GARDENING

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GARDENING

Illustrated. For Town & Country.

A Weekly Journal for Amateurs and Gardeners.

FOUNDED BY W. ROBINSON,

Author of "The English Flower Garden," "The Wild Garden," "Hardy Flowers," "Alpine Flowers," &c.
Founder of "The Garden" and "Farm and Home."

"YOU SEE, SWEET MAID, WE MARRY
A GENTLE SCION TO THE WILDEST STOCK;
AND MAKE CONCEIVE A BARK OF BASER KIND
BY BUD OF NOBLER RACE: THIS IS AN ART
WHICH DOES MEND NATURE—CHANGE IT RATHER: BUT
THE ART ITSELF IS NATURE."—*Shakespeare.*

"CALL THE VALES AND BID THEM HITHER CAST
THEIR BELLS AND FLOWERETS OF A THOUSAND HUES."—*Milton.*

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TUFTED PANSIES (VIOLAS) AND THEIR CULTURE.

During the past five years a large number of new varieties have been distributed by different growers, and these have in many instances superseded the older sorts in gardens. Among the older varieties, of course, there are still to be found those which will bear comparison with others of more recent introduction, notably in the case of Ardwell Gem, a bright yellow sort, which easily holds its own for massing in beds. Yet the majority of the older kinds are weedy in growth and less beautiful in colour than the newer sorts. Another good point in the more recent introductions is their sturdy habit of growth, combined with a robust constitution, two most essential characteristics in short-growing hardy plants. It is with such plants that the perpetuation of the different sorts becomes such a simple matter, and because of this useful quality they deserve more attention than those varieties of comparatively weak and sickly growth.

To Dr. Stuart, of Chirnside, N.B., belongs the credit of introducing a race of plants quite distinct in several particulars from any other Pansies sent out previously. After a long series of experiments, extending over several years, he eventually secured for all lovers of hardy flowers a charming miniature variety, which he called Violetta. This is a very hardy kind. The flowers are almost pure white, on short, stiff foot-stalks, and very fragrant. This is probably accounted for by the fact that in the course of his experiments Dr. Stuart is stated to have used the pollen of Viola odorata (Sweet Violet). From this beautiful little flower quite an interesting progeny has resulted, until at last there is a wide range of colour in which these beautiful miniature flowers may be obtained. Another variety, with larger flowers, but not quite so large as those of the ordinary large-flowered type, was also raised by Dr. Stuart, and named Sylvia. This has turned out to be the parent of a valuable progeny, and amongst them are found most of those which are highly valued for bedding—really the only place suited to this class of plants. The painstaking example so ably set by Dr. Stuart has found adherents in the south, and now within the neighbourhood of London and its suburbs are growers—both amateurs and professional gardeners—hard at work in their endeavour to get improvements on existing forms of the Tufted Pansy. In this praiseworthy effort they are meeting with considerable success. At the meetings of the Viola Conference Committee at the Botanical Gardens, Edgbaston, Birmingham, in 1894 and 1895, and again in the Royal Botanic Gardens, Regent's Park, in 1896, a good list of novelties were submitted for certificates. In several instances first-class certificates were awarded, and to receive such a distinguished mark of favour the flowers must be very fine. The Tufted Pansy trial in the gardens of the Royal Botanic Society, Regent's Park last year was a distinct success. The hot weather early in the spring and right on until August was a severe time; but the long expected rain, which succeeded the very serious drought, and which came just in time during the early part of August, altered the aspect of affairs, and caused the plants in the trial to grow and blossom profusely. The papers read at the conference and the committee's awards are in the printer's hands, and will be published very shortly by the National Viola Society for 6d. per copy. This useful organisation is doing a good work just now in London. Last year a good exhibition was held at Regent's Park, and again this year—probably in the early part of July—their second exhibition will take place in the gardens of the Royal Botanic Society. Arrangements have been made for a further trial this year.

A matter of considerable importance to growers is the trial of Pansies for bedding by the Royal Horticultural Society, in their gardens at Chiswick. The border in which the trial is to take place is admirably suited for the purpose. On this account alone the gardens should be quite worth a visit from May onwards, few persons being aware of the great wealth of blossoms which a collection of plants of this description will give. The Tufted Pansy is everybody's flower, being equally well-suited to the owners of either large or small gardens, and their cost is so very trifling that they are within the reach of the poorest. I know of no other flower capable of giving such a prolonged display, being seen in perfection from the spring until autumn is well advanced, for so little attention to its wants throughout the flowering season, and the only wonder to me is that the plant is not more often grown by those with limited purses, in the place of the more tender subjects which one is so accustomed to see in many gardens where the Tufted Pansy would revel.

Culture.

I propose to commence the consideration of Pansy culture from the present time in order that all the details necessary to ensure success, as far as in one lies, may be successfully dealt with. Beds and borders, and any other portions of the garden which it is proposed to plant, should be taken in hand without the least delay, and treated to a thorough and deep system of digging. It is also essential that there be incorporated with the soil a good dressing of well-decomposed manure. This is very important, as Pansy roots are very active all through the summer, and, if the plants are to be kept in a healthy and vigorous condition, it is of the highest importance that something good in the way of plant food should be incorporated at the time of digging over the beds and borders intended for their reception. Soils of a light to medium character would be improved by the addition of old cow-manure, while those of heavier and more retentive kind would be well served with that from the stable after first becoming well rotted. Should there be any who find a difficulty in obtaining the former, and who also feel somewhat disposed to give up all thought of taking in hand the culture of these beautiful hardy flowers because of this initial difficulty, let such individuals be not discouraged, because they may secure very satisfactory results without strict attention to this detail, although, of course, by the aid of proper soils still better results may be achieved. It is more than probable that the majority of my readers have no other ground than that which has been used for many years without being renewed, and which also may be impoverished and sour. In such instances it is absolutely necessary that some good manure be used when digging over the garden, and in a very liberal manner too. The ground should be turned up and left rough for whatever frost we may yet get to pulverise and sweeten. If left rough for a week or too it is remarkable how much better the soil works afterwards, and also ensures healthy and vigorous root-action when once the plants are in position.

D. B. Crane.

FERNS.

MAIDEN-HAIR FERNS (ADIANTUMS).

These Ferns are very popular amongst all classes, and particularly so with market growers, who send into Covent Garden vast quantities of fronds in a cut state, and alse pot-plants during the season, as the fronds blend admirably with cut-flowers arranged in almost any manner, and the pot-plants are most valuable for decorating greenhouses and rooms. All the Adiantums are no doubt well worth growing, but for all practical purposes about a dozen kinds will be ample for anyone to have. Those kinds which growers for market cultivate will generally be found to answer the purpose of all other cultivators, as they consist of the hardiest, quickest-growing, and most useful members of the family. The kind most in demand is the well-known Maiden-hair (Adiantum cuneatum), and with this, so great a favourite is it, it would be difficult to overstock the market. It is of medium growth, and stands well in rooms when not subject to the baneful influence of gas-light. It is, in fact, everybody's Fern. It is easily increased by division of the roots, and by spores or seeds, which are best sown in pots filled with light sandy soil. A little finely-sifted brick-dust is generally placed on the surface of the pots, because it sucks up moisture and prevents the plants, when making their appearance, from damping off, which they are otherwise very liable to do. The pots should be plunged in beds under glass, in which there is a little heat, and then be covered with bell-glasses, small lights, or circular pieces of glass. When the young plants are well established and large enough to handle, they are pricked out thickly in small pots, and afterwards divided and potted on until they are in 5-inch or 6-inch pots, or larger ones as desired. All Ferns can be increased and grown the same way, excepting such kinds as the British Maiden-hairs (Adiantum Capillus-veneris var.), which have creeping rhizomes. These are usually multiplied by cutting up old plants into small pieces and potting them at once into 3-inch pots. To furnish a plentiful supply of green fronds of A. cuneatum for cutting, large market growers frequently devote several houses to their culture for cutting, and for this purpose the plants are grown in 12-inch pots in good peat, loam, and sand, with abundant drainage. When these large plants have become exhausted from the constant cutting of the fronds they are pulled in pieces and potted in smaller pots, and are replaced by a batch which has been treated previously, and then become well established again in large pots. In this way a continuous succession of fine, healthy plants is kept up. The house set apart for plants for the present cutting is kept much cooler than those in which they are being brought on in succession, and by this means the fronds become hardened and assume a deeper green colour, and then last in good condition after being cut for a much longer period than if they had been subjected to a warmer temperature. Adiantum gracillimum, a variety of A. cuneatum, has long been a popular market plant on account of its light and graceful fronds, which are excellent for bouquets. It comes true to character from its spores or seeds, and is, therefore, a favourite with growers. A larger variety, A. concinnum latum, is also held in high esteem as a market plant, as it can be raised to any extent by means of its spores, the produce of which in one year may be grown into beautiful little specimens, well furnished with large and graceful rosy tinted fronds. Adiantum decorum, an old variety not unlike A. cuneatum, still maintains its value as a market Fern. It is a fast grower and a universal favourite. A. scutum is also a good variety, resembling, when well grown, the beautiful A. Farleyense, but it is much more easily managed, and the fronds last long in perfection. With some growers A. hispidulum and A. formosum are favourites, and so are also the stronger-growing, broad-leaved kinds, such as A. trapeziforme, macrophyllum and Catharinæ; in fact, most of the Adiantums when grown into neat little specimens soon command purchasers, but many of them are useless for cutting and too slow growers to be remunerative. The culture of Ferns is very simple, whether grown in rooms or in greenhouses. They require plenty of water at the roots, a moist rather than a dry atmosphere, plenty of drainage, and a partially shaded situation. They cannot stand a gas or fire-heated room for any length of time; indeed, a low temperature would do them less injury. They will grow in almost any good soil free from worms, to which is added some silver-sand or road-drift. Repotting need only be done about once in two or three years, but a top-dressing of artificial manure or a liberal supply of weak manure-water are necessary when the pots are very full of roots. When the fronds are getting brown or musty, the best plan is to keep the plants rather dry, and tie the old fronds in bunches and draw them over the sides of the pot. This allows young growths to come up, and when this is the case, water more freely and remove the old fronds.

H. B.

TREES AND SHRUBS.

THE MYRTLE.

Though the true home of the Myrtle is in the sunny south, such a fragrant shrub is cherished by all who love their gardens. We cannot so far north have the Myrtle groves such as the classic poets have immortalised, but we can grow with care luxuriant bushes of every sort of the common Myrtle against a sunny wall, and

A spray of Myrtle.

if a cruel winter, such as 1895-6, takes them from us, we must replace them. In Cornwall and Devon the Myrtle is seen as a bush in company with the Fuchsia in a tree-like way, but inland we must be content with it as a wall covering, and a most beautiful covering it makes. The common broad-leaved kind as seen in most old gardens has been with us since the culture of foreign shrubs began in England, and therefore a peculiar interest attaches to it. But there are many other kinds which one sees commonly grown in Italy and the south that excel the typical kind in beauty of flower and foliage while retaining the balmy fragrance. The dwarf sorts are the Roman, Box-leaved, Nutmeg, Portuguese, Italian, and the Dutch, all different and having characters that recommend them, but, unfortunately, they are difficult to obtain. But, fortunately, one of the best, and one that is procurable in nurseries, is the Rosemary-leaved Myrtle (M. communis mucronata), also called minima or angustifolia. It has much smaller leaves than the common kind and produces a sheet of white feathery bloom against a warm wall. Besides these more or less botanically distinct varieties there are several with variegated foliage, such as the gold-striped and silver-striped of the various forms mentioned above, but they are not so desirable as the simple green-leaved varieties, and are mostly seen grown in pots for cutting from. In any but the mildest localities or near the sea the place for Myrtles is a wall where they can get plenty of sun, and if there is an overhanging ledge, such as a window-sill, so much the better. The best specimens I have seen have been against a wall that was warmed by a chimney, and bushes 10 feet or 12 feet high are not uncommon.

G.

ABOUT RHODODENDRONS.

You have kindly given me in Gardening for February 13th (No. 936), the names of some of the best and hardiest Rhododendrons; but I asked for the names of some raised from R. ponticum and the Indian Rhododendron, mentioned in Gardening, January 23rd, "to thrive in mild districts and in the south of England, but not hardy in the country generally."

W. W.

*** To describe the numerous hybrids raised from the Indian Rhododendrons would occupy much space. From a botanical point of view the subject is a wide and very interesting one. Broadly speaking, the progeny of the Indian Rhododendron is not hardy in this country unless in favoured localities in the south of England, as mentioned in Gardening, Jan. 23rd, but with the protection of cool conservatories they will come through our winters unscathed. They have played a very important part in adding beauty to our conservatories in early spring, and have also been used in crossing with the hardy species—namely, R. ponticum, R. catawbiense, etc. The progeny from these well-known species is varied both in habit of growth, freedom of flowering, quality and colour of the flowers. Of the Himalayan species which have been used with excellent results, are: R. Aucklandi, R. arboreum, R. Dalhousianum, R. Fortunei, etc. The progeny raised from these have been crossed with other species and varieties, conspicuous either for their vigorous constitution or freedom of flowering. The variety named Alice Mangles is a cross between R. Aucklandi and R. ponticum. It is a lovely variety and deserving of wider cultivation. R. altaclarense is a cross between R. arboreum and a seedling, R. catawbiense, which had been fertilised by the pollen of R. ponticum. It is a very beautiful and early-flowering variety; flowers bright scarlet with numerous black spots. R. altaclarense and R. catawbiense produced R. blandyanum, a handsome variety with rose-pink flowers borne in large trusses. R. altaclarense has been employed extensively and with considerable benefit in hybridising with many species. Some of the best hybrids will be dealt with in a subsequent issue.

Pinus in South Devon.—I should be much obliged if you or any of your correspondents who know the climate of South Devon, in the neighbourhood of Totnes, would kindly inform me whether Pinus insignis californica will stand the winter there, and grow into timber-trees? Also, whether the Euonymus is hardy in these districts, and if so, for what price the former can be obtained per 100, say 1½ inches to 2 inches, and also the Euonymus and where (two or three times transplanted)?—Strelna.

*** We know of no Pine called Pinus insignis californica, but P. californica is an absolute synonym of both P. insignis and P. tuberculata. To whichever you refer there is no doubt of its thriving in an ordinarily sheltered spot. You do not say which Euonymus you refer to; presumably it is the evergreen one, E. japonicus. This will succeed well in your district as well as all the others, with the exception of some Himalayan species. As to where you will be able to obtain these plants in quantity, we should advise you to apply to some leading nurseryman, or advertise in some horticultural periodical.

Forced Lilacs not flowering *(Sherborne).*—It is very evident that the wood of the previous year's growth has not been thoroughly ripened. The Lilac delights in sun-heat, especially if planted in a moist and fairly rich soil. Encourage your plants to make good wood this season, and plant or plunge (if in pots) in a sunny spot. During the growing season they should be well supplied with water, which must be reduced as growth matures. Treated thus, your plants will again yield a supply of blossom.

THE KITCHEN GARDEN.

GLOBE ARTICHOKES.

There are not many varieties of the Globe Artichoke, and in some places the plants are not quite hardy, but with a little care in cultivation, necessary protection in cold soils or exposed situations, they gave a good return. As may be seen by the illustration, the Globe variety differs much from the root or the Jerusalem type, which latter is quite hardy. I am pleased to see that of late years there has been improved culture, and with more attention the growth is better. As my note more concerns the Globe section, I will briefly refer to its culture and the best means of getting a first-class variety. With the Globe section there are both bad and good types, and I think an inferior Globe Artichoke not worth culture. The poorer varieties are small, more prickly, and less succulent than the better kinds. As these are mostly produced from seed care is needed in selection. The best variety I have seen from seed is Large Green, which appears to be a distinct variety from the common Chard or small prickly kind. My readers may not know that the Cardoon and Artichoke are so much alike that I have seen one substituted for the other, whereas a Cardoon is a fair vegetable when grown well, but the heads are poor. The stalk portion of the Cardoon is edible and requires much blanching. Like the Globe Artichoke, the Cardoon is not very hardy. Of varieties the best green is the one noted above, and this is the variety much grown for the Paris market, where Artichokes are much appreciated, and to get it true from seed requires care. The seeds must be cautiously saved, and as I will briefly refer to culture I do not think it advisable to recommend amateurs to save their own seed. I feel sure better results will be obtained from good seed from a reliable source.

Globe Artichokes. From a photograph.

There is no difficulty in keeping up a good stock of plants by division of plant in the spring. This is an excellent plan when one has got a good variety. The Purple Globe is a fine variety and by some large growers preferred to the green. It is grown under various names in different localities, and no one will regret giving it a trial. I have seen it described as the Large Purple Paris. It is a delicious vegetable when well cooked. Others are grown, as the Crown Globe and Green Globe, and these with the above constitute the best varieties under cultivation. Another point deserving of note is the small quantities of these plants grown by amateurs. Large quantities are not needed, but where there is space they give variety, and I think this is a point not sufficiently considered in vegetable culture, as one may, with advantage, have as much variety as possible, and thus get more enjoyment from the kitchen garden, the portion often most neglected.

On the Continent, the Globe Artichoke is much grown, but the climate is milder in most parts and no protection is therefore needed. Heads are produced much later than is possible here. When we can have good heads for four or five months—say, from June to October—a fairly long period, and at no great cost, I certainly advise extended culture, and feel sure, when once grown, they would be liked. Of course my notes, as regards hardiness, do not apply to many parts of the country, as on the south coast and in the warmer parts the Globe Artichokes will prove quite hardy, and in northern localities very little protection will preserve the plants.

The culture from seeds is simple, and to gain time we sow three seeds in 4-inch pots in cold frames in March, and when the seedlings appear thin to the strongest, expose the plants freely in fine weather, planting out early in May. Unfortunately, unless our seasons are most favourable, the plants, even when sown under glass, do not attain size to carry many heads the first season, hence the necessity of protecting the plants, as the next season they will produce well. Another and ordinary mode of culture is to sow in the open, and thin to the strongest plant. These will not fruit much the first season, but will the next, and with care last many years. Artichokes to do well require much room and richly-manured and deeply-dug land. We give ours 4 feet between the rows, and 2 feet between the plants. Double-dig the land, and manure freely. The plants produce an abundance if given a top-dressing of manure annually when established, and few plants repay so well for copious supplies of liquid-manure during the growing season. The cultivation by division is well worth a trial, as many may be able to obtain suckers by planting in March. Nice heads will be obtained in August the same year. I should explain that suckers are side growths. These, if taken off with a small portion of root from the parent plant at time named, soon make headway.

The culture given for seedlings is the same as above, but plant firmly and water freely if weather is dry at planting. Protection in winter is readily given by dry fine ashes round the plants, say, 4 inches to 6 inches deep, and over this dry leaves or Bracken. If the crowns are preserved they soon grow in the early spring.

G. W.

Lettuces not "hearting in" *(North Wales).*—Do not plant the Lettuces upon a very loose soil, and tie them up with bast or raffia when almost fully grown. Some of the Cos varieties "heart in" better than others. Paris Green for summer and Brown Cos for autumn and spring are among the best; but all are improved by being drawn together when almost fully grown.

TOMATOES FOR AMATEURS.

(In reply to "J. H.")

Of late years Tomatoes have become more popular and their culture better known. Less importance should be placed upon mere variety. The plant has been so much improved upon that there are few poor kinds in cultivation, and I am aware those who fail at times are inclined to place it to the sort, whereas it is cultivation that is wrong. Amateurs are often too good to their plants, use too much manure and too much soil, with the result of a gross growth and poor crop. Take soils—in the first place I have seen some of the best crops taken from very poor soil. One large grower who grows many tons of fruit relies largely upon common garden soil. With this he uses spent Mushroom-manure, which is light and does not encourage rank growth. Early summer is the earliest season that most amateurs can expect to get ripe fruit, as if they only have a little glass it is the middle of May before they can give the house up entirely to Tomatoes, and to do this by sowing early in March good plants may be secured by that date. Many may be able to purchase their plants, and these are obtained at a reasonable price, but it has its advantages if the purchaser obtains the variety he desires (be sure to raise plants from seed saved from healthy plants). Disease is so readily transferred.

I advise the following simple way of getting a strong plant: The Tomato in its early stages is very tender, many losses occurring in the seed-pan, and if sown in March the sun is powerful, and with a little fire-heat at night plants may be raised. Sow the seeds in a 3-inch pot in a light sandy compost, and give little moisture until the seedlings are above the soil. It is well to place the pots over a flue or pipes until the seeds have germinated, and then place on a warm shelf, close to glass, removing the weaker plant. By this plan the check of potting up seedlings out of the seed-pot or pans is avoided, and by the time cutting is needed there is a strong growth and no risks. When repotting shift into 6-inch pots, also pot firmly. Place the ball low down on drainage; this will permit of roots coming freely from the stem. Replace on shelves, and give a stick to each, and grow on until the middle of May.

By the date named the grower will decide if to plant out in the house or grow in pots or boxes. If planted out the plants give more fruit, but are longer coming into fruit; on the other hand, plants well treated in pots or boxes can carry 8 lb. or 12 lb. of fruit, and a planted out plant cannot be expected to do more. With pot-culture one can feed better—in fact, pots or boxes, or a restricted root space, are to be greatly recommended.

If grown in pots, transfer to 10-inch or 12-inch pots in the middle of May. Pot firmly, and use more soil and less food. I prefer to give half-a-bushel of bone-meal to a yard of soil. Other foods may be given in a liquid state or as a top-dressing when in fruit. The plants, when potted, may be placed in their growing quarters, and for a short time must be watered very sparingly until new root-growth is active. Planted-out Tomatoes need free drainage, not too rich soil, and firm planting. Care in watering is necessary at the start, and if there is 12 inches depth of soil it is sufficient. Avoid draughts and feeding too early. The usual method is to get some bloom set before feeding commences. Plants are best grown to one stem, and from the start all stems or lateral growths must be kept stopped hard back. Where bunches show stop one joint beyond the bunch. As regards room for plants—if in pots the pots may touch. Train them up the roof if planted out, 2 feet each way being advisable. It is well to give air freely on all fine days. A close atmosphere means thin, barren growth. Also leave air on at night on the ventilators from June to September, and give ventilation freely in the day. Give ample water as the plants increase in size, also food. I do not advise cutting leaf-growth to excess, as it injures the plants.

G. W.

Potatoes.—Small plots may now be planted on warm, sheltered borders in southern gardens, bearing in mind that the plants will require protection for some considerable time after growth appears, so no more should be set out

than can be easily and conveniently protected whenever the weather is frosty. If the soil be heavy, wet, or of a cold nature, it will be much better to wait another week or fortnight before commencing planting; the time gained by commencing now is considerable, and the crop will probably be much smaller than it would be by waiting. Shallow planting is best for the earliest lot; 4 inches below the surface will be ample if a little soil is drawn up to the plants as soon as they get into growth. As a heavy crop is not expected from the earliest plantings, the rows need only be set about 21 inches apart, close planting making after-protection easier.

EARLY PEAS.

Those who are restricted in glass accommodation must necessarily depend on the round sorts for the earliest gathering. Generally these are valued beyond any other vegetable, whether early or late, and the gain of a few days in point of maturity to many gardeners is of very great consideration. The extent of the demand and the convenience for production must be the determining points for every individual grower. Those who can sow under glass have an undoubted advantage over those who cannot do so in seasons such as that of 1895. Even round Peas that were sown early and exposed to the long-continued spell of severe frost perished, while the indoor ones were enabled to make progress comfortably. Pots, no doubt, afford the readiest means of maturing the crop early, but boxes are more often adopted. From pots they can be planted in the open border almost without their realising the change, and the growth advances without the check that must result from the disturbance to which they are subject when turned out of boxes and pulled to pieces. Some private growers provide specially-made boxes for forwarding early Peas, so as to minimise the check in their removal for planting. If ordinary cutting or Pelargonium boxes are used, I prefer them made shallow, or not more than 2 inches deep. Sown in deep boxes filled with soil, the roots descend into the drainage and leave the surface unoccupied, and at planting-time they come out badly, and are stationary for a few days after being planted. In shallow boxes the soil becomes almost filled with strong roots, which can be dealt with much more easily in every way.

There is no need for so large a sowing of round Peas as formerly, because varieties of early Marrow sorts are becoming more numerous each year, but at present, unless under exceptional circumstances, one sowing at least I think is advantageous. I find it so for the reason that when the Pea crop commences the demand is very heavy and frequent, and from a small indoor sowing this cannot satisfactorily be met. This has reference more particularly, of course, to growers who have a large family to provide for. An early outdoor sowing of round Peas will come into use close upon the indoor favoured ones of the Marrow type, and if they are not so good as these, they are appreciated more than other vegetables then in season. Crowding of a lot of seed into boxes is bad practice, for the seedlings become drawn, the roots closely matted, and unless given ample ventilation, there is a danger of losing the greater part of them from an attack of damp. I once saw a lot of seed very thickly sown, and before the weather was warm enough for planting the seedlings out more than half had collapsed from damp, and this continued after they were put out. Where cold-frames are available, the Peas should be sown early and forwarded under these conditions. They can then be planted out earlier and with less risk of injury should a spell of cold weather follow, which often happens in the month of March after they are finally planted. Some Spruce, common Yew, or other evergreen branches should be used as a protection, but they need only be inserted on the side from which cold winds may be expected. Varieties requiring stakes should have them put in on completion of the planting. W.

FRUIT.

APPLE HAWTHORNDEN.

I quite agree with those who hold that we have far too many varieties of Apples under cultivation, but if we wish to meet the demand we must keep the best of each section. The line dividing them is generally sharply defined, but there are exceptions to the rule, as some so-called dessert Apples are useful for cooking, but these are rarely among the best in either section, and many of them might be well spared altogether. In the best cooking Apples we generally look for size, a good colour both before and after cooking, and a fairly piquant acidity; some, if not all, of these points are missed when the best dessert varieties are tried. The old Hawthornden was for many years a noted sauce Apple, and for this purpose it is very well suited, being a most abundant bearer of moderately large fruits of excellent quality. The tree is in some places a little subject to canker, but neither more nor less so than many other good Apples; indeed, if we eliminated all the varieties liable to this we should have no reason to complain of "too many varieties." Its season unfortunately is rather early, as it comes in at a time when there are so many varieties requiring immediate use—that is to say, during October and November. This is probably one reason why it is rarely mentioned favourably, and has led to its being superseded by that fine Apple the New or Winter Hawthornden, which is a much larger variety, equally free fruiting, while it comes into bearing when the tree is still quite small. For orchard culture it has the additional advantage of being a more robust and larger grower than the older variety. The fruit is very handsome, very large, regular in form, yellow when ripe, and with sometimes a red flush on the side next the sun. J.

Apple Hawthornden.

ROSES.

ROSES THAT SHOULD NOT BE PRUNED.

It is too much the custom amongst the unskilled workers in the garden to prune all Roses alike, with the result that many a useful hardy garden Rose gets a bad character for not flowering freely when it has not had the chance of doing so, because the growth that would have blossomed in early summer was cut away at the spring pruning. Take the old Cabbage Rose, for instance, and see the freedom with which it flowers in cottage gardens where generally it has to take care of itself. We do not want any better evidence that this is one of the Roses that does not want any pruning. I admit it does it no harm just to take off the points of the shoots that blossomed last year, but to do more than that reduces the number of flowers. The Scotch Roses also can take care of themselves as far as pruning is concerned, as they will blossom all the better for being left alone. It may not be usual, but I have actually seen the shears used to bring them into form, and the owner afterwards complained because there were so few flowers. Moss Roses for the most part when cultivated as dwarf plants require no pruning for the first few years after planting, except, if one must prune at all, to deal with them as I have advised for the Cabbage Roses. In the course of time, perhaps, the old stems may get weak and crowded, and then they should be cut clean away from the bottom. Moss Rose Lanei is a variety that does admirably when treated in this way, and will extend itself by its suckers for several feet on each side of the plant. That beautiful white variety named White Bath is excellent for massing if left to itself, and we have no Rose purer in colour or more beautiful in its mossy bud. The Roses that suffer the most from the use of the knife in the majority of gardens are the Austrian Briers. These should not be pruned, not even when grown as standards, because in any form they are not vigorous growers; therefore to shorten the growth in any way in the spring is to lessen the quantity of blooms in the early summer.

I mention the standard form because I have so grown the Austrian Brier, and I shall not soon forget the graceful heads on the unpruned plants. Can anyone imagine a more pleasing sight than several shoots from one plant gracefully arching over from a stem 2½ feet high of Harrisoni laden with its golden-coloured flowers? It is, however, the dwarf plants, and those principally on their own roots, that suffer the most at the hands of the pruner. There seems to be an impression that these strong shoots are only produced to afford work for the pruner. There never was a greater mistake, as these are the very growths which, if left unpruned, show the capacity of the plant to produce a large quantity of flowers.

Banksian Roses do not perhaps come so forcibly under the heading of these notes, but there is no question but that they are a failure, sometimes owing to the efforts of the spick-and-span gardener to trim them into shape in the spring, which efforts end in his cutting away the principal part of the shoots that would have blossomed had they been allowed to remain. In the case of old-established plants that are in vigorous health there may be some long growths that it may be desirable to cut away, but that is all that should be done to them in the spring. The proper way to deal with the plants that have filled the allotted space is to get a pair of hedge shears and shear them hard back as soon as they go out of flower, and that is all that should be done to them until next year, when the same operation may be repeated. In the meantime some long shoots that should be removed in the autumn may be made, but the short spray growth must be left, as it is this which furnishes the flowers.

Rose Celeste I have grown now for ten years, and I have not yet seen the necessity of pruning it, and every year the number of flowers increases. My friends in Ireland tell me that with them it grows to a height of 8 feet, but here, in the west of England, it is likely to be many years before

it reaches such proportions. Rose Perle d'Or is a miniature Tea Rose of a weakly character. The growth is so diminutive that I am satisfied it will be best not to prune it at all. J.

THE ROSE GARDEN AND ITS IMPROVEMENT.

There is a great loss to flower gardens from the usual way of treating the Rose as a thing apart, and the Rose is absent at present from the majority of gardens. It is surprising to see how poor and hard many places are to which the beauty of the Rose might add delight, and the only compensation for all this blank is what is called the rosery, which in large gardens is often an ugly thing with plants that usually only blossom for a few weeks in summer. This idea of the Rose garden arose when we had a much smaller number of Roses, and a greater number of these were kinds that flowered in summer mainly. Even now enough account has not been taken of the many Roses that flower now throughout the summer and autumn, among these being the best of Roses—Teas and Chinas. The old standards had something to do with this separate treatment of Roses, it being laid down in the books that the standards did not "associate" with other shrubs, and so it came about that all these standards were placed in the rosery, and there held up their buds to the killing frost. Shows, too, have had a bad effect on the Rose in gardens, where it is many times more important than as a show flower. The whole aim of the man who shows Roses was to get a certain number of large flowers, and any stock which enabled him to get this at the least cost was what he thought most of; so, if we go to any Rose-showing friend, we shall probably find his plants for show as standards or half standards in the kitchen garden with a deep bed of manure on the surface. This idea of the Rose only as a show flower leads to the cultivation of Roses that have not a high value as garden flowers. Teas and others that do not open well in our country and are not really successful in it are grown because they happen to produce flowers now and then that suit the shows. So altogether the influence of the shows has been against the Rose as a garden flower, and a cause why the large country houses of Scotland and England are as yet quite free of the grace of the queen of flowers. What is wanted mainly is that the very finest Roses, and above all long blooming ones like Monthly Roses and Tea Roses, as George Nabonnand, Marie Van Houtte, and Anna Ollivier, should be brought into the flower garden in bold masses and groups to give variety and prolong bloom without having any hard and fast line, but using only the choicest Roses in the flower-garden and freely on covered ways or pergolas and walls.

In most gardens where people pay any attention to Roses the ground in which they grow is in winter densely coated with manure, very often ugly to see in a nice garden. This is the regulation way advised in catalogues, but it is needless in a beautiful Rose garden. Most of our garden Roses being grafted on the Brier (that is, the Dog Rose of our fields and hedgerows), the conditions which suit are well known. The Dog Rose does best in the heavy, cool loams of the midlands, and if we want the ordinary garden Rose to do well we must give it about 30 inches in depth of like soil. In forming Rose beds, people who know what they are about always use stiff soil when they can get it, and it is very easy to add, in putting the soil in, all the manure which the Rose may want. We have beds of Tea Roses in which the common Irish mossy Rockfoil has been growing for seven years without showing any sign of suffering. Beautiful beds of mossy plants of all sorts, or pretty little evergreen alpines associated with the earliest Scillas, show that the surface of the Rose garden itself might be a charming garden, and not a manure-heap. In the old way of having what is called a "rosery" it did not matter so much about covering the surface with manure, but where we put our Rose beds in the centre of the very choicest flower garden or under the windows of the house it is a very ugly and needless practice. The Rose can be nourished for six or eight years without adding any manure to the surface, and after six, eight, or ten years most beds will probably require some change, or we may change our view as regards them.

Important as it is to get rid of this conventional way of growing Roses, the more important thing of all is to get out of the common fixed way of planting them. As regards form, we ought to have much more of the Rose as a climber and as a garland in the old way on chains and walls and pergolas; also the free-growing Roses should be allowed to form bushes on lawns in their own shapes, and certainly the old garland kinds are the best single Roses. How little could be seen now, even in good Rose gardens, of the beauty of the form of the Rose, which is so evident where it is grown in a bold and varied way. One of the handsomest things we have ever seen was a collection of climbing Roses grown over Oak arches at intervals along a Grass-walk in M. Cochet's nursery in France. Seen in the blooming season it was a thing not to be forgotten; but there are many other graceful ways of growing Roses apart from the stiff standards and few feeble ways one generally sees, especially in the large gardens.

Roses over arches.

W. A. Richardson Rose.—I have this Rose, which was planted about three years ago, growing on a south wall. It is very strong, and has made plenty of growth, but I shall have to thin out this spring. Will you kindly tell me the proper mode of pruning this Rose? Should I cut out all the weak shoots, and how are the laterals treated? Should they be spurred back or laid in, and where the shoots are crossing each other or standing out straight from the main stem, should they be cut out altogether? How soon may the tree be pruned?—A. M. G.

*** An article upon pruning is being published in which you will find the question dealt with fully. By no means thin your plant much until it has bloomed. It would be a pity to lose so many flowers, and you can thin with advantage immediately afterwards. Early in March is a good time to prune.

Umbrella Rose-tree (*W. A. Sewell*).—So much depends upon how high you wish the centre of your Rose-tree to be. If you wish it to form a cover for seats, such as are often found beneath Weeping Willows, etc., you must use an iron standard and get some smith to fix a ring or two to form support for the Rose growth; but if you only want a Rose-tree in the form of a weeping flowering shrub upon a stout and high stem, select some such variety as the Banksians, Austrian, and Persian Briers, Ayrshires, or Hybrid Sweet Briers, and work these upon a tall stem of the common hedge Brier-stock. They will droop over with weight of foliage and blossom.

Seedling Brier (*E. K. B.*).—You can purchase seedling Brier-stocks from any nurseryman now, and this would be far better than attempting to raise a few, which would not be fit until two years after sowing.

Pruning Gloire de Dijon Rose (*Omanna*).—Simply remove weakly wood and cut away any of the worn-out growths. Leave the strong shoots, as it is upon these that flowers will be borne. You must not hack about climbing Roses. See notes being published now upon Rose pruning.

EDGINGS.

Much beauty is lost to gardens by not using suitable plants for edgings—not an insignificant part of the garden I assure you. Edge the walks tastefully. Oyster-shells, bits of broken china, and tiles are not pretty. Wood is objectionable too—a fruitful source of fungus troubles. Get stone if possible, and plant against it tufted creeping things, as the Mossy Saxifrage (S. hypnoides), like a soft mat, spongy as it were, and of a cheerful green throughout the year. The common Sea-shore Thrift (Armeria vulgaris), Pink Mrs. Sinkins, or the old Fringed White; Creeping Jenny, or the deep blue Gentianella (G. acaulis) will be happy under such conditions. The Gentianella is the most quixotic of these, sometimes flowering and growing delightfully, sometimes the reverse; it likes a warm, light, gritty soil, then one may expect the rich harvest of blossom as deep as sapphire in tone. A garden may be made beautiful in a way with edgings alone. People lose much by not knowing what to plant, where to let it revel, and the soil for the things to root into. Every inch of a garden should contain some plant. The beautiful Speedwell (Veronica prostrata) makes a thick mat, hidden for several weeks in summer by a profusion of rich blue flowers. I once saw a superb edging of this Speedwell, a picture in itself, and taking the place of ugly tiles and brick ends in many gardens. I love to see the so-called common White Pink as an edging. In June it is covered with flowers as white as a snow-drift, and a fragrance as sweet as a Tea Rose scents the garden. When all this glory has departed, the silvery tufts are like a satiny sheen in autumn and winter.

C.

Galanthus Elwesi ochrospeilus.—This is a very distinct form, and noteworthy on account of the colour of its blossoms, which are of a distinct yellowish hue. For this reason it is at least interesting, though, to our mind, a Snowdrop should ever be an emblem of beauty.

OUTDOOR PLANTS.

USEFUL BEDDING PLANTS FROM SEED.

With the improved taste for more natural summer arrangements than carpet bedding, we are not only able to make a larger show at less cost, but many very pretty subjects may be raised from seed the same season they are required. The Ricinus (Castor-oil), Tobacco-plant, and several more were treated upon in a recent note on sub-tropicals from seed, and while not despising the Aster, Stock, Zinnia, and other annuals, we need to commence soon if Begonias, Verbenas, Petunias, etc., are to be in a sufficiently forward condition to make an immediate show when transplanted to the open early in June.

It is rather late for Begonia semperflorens, and the seed may be raised similar to the tuberous-rooted varieties so ably treated upon by Mr. Crane in the issue for January 23rd. But as soon as the seedlings can be handled they must be pricked off into a half-spent hot-bed, and care taken to gradually bring them to a hardy condition by the middle of May. For two or three weeks after they are able to stand full exposure by day, it is well to cover at night in case of late spring frosts, especially early in the morning. B. semperflorens is hardly ever out of bloom, and we can now have a good variety of colours. They are compact-growing little plants, and need no more attention when once planted out. The bluish-green foliage and deep scarlet flowers of Begonia Davisi are particularly showy. The large-flowered single varieties are among our best bedding plants; indeed, the Begonia has taken so great a lead, and can be had in so many forms and colours, that probably no one plant is more generally useful.

Petunias are old favourites, not nearly so often used as they deserve. Sow and treat the same as Begonias during the early stages. Early in March is soon enough for these.

Verbenas may be sown at the same date and grown on in small pots similar to the Petunias, a spent hot-bed being a capital place to stand them in for a few weeks previous to bedding out. Both of these may be pricked off into boxes or pans; 2½ inches apart if intended to stay thus until planted out, in which case a good soaking should be given before disturbing them. I prefer small pots, and place them in these when the seedling has grown 3 inches, and had its tip pinched out. A stout and bushy plant results, and there is much less root disturbance when transplanting. Ageratums may have the same treatment in every respect. Unless we sow Lobelia and Centaurea candidissima early, they do not come into full use soon enough. Perilla nankinensis and Pyrethrum (Golden Gem or Featherfew) will be forward enough if sown by the end of March. The pretty and graceful Nierembergia gracilis also needs early sowing to obtain plants in full beauty for trailing over vases, window-boxes, etc.

Single Dahlias, especially the Tom Thumb varieties, growing about a foot to 18 inches, are very showy and effective. Sow in April and grow on in a warm frame or greenhouse, planting them out late in June. There is an exceedingly pretty race of miniature Roses (Rosa polyantha multiflora) that may be raised from seed, and will bloom in the open air during the same season. Sow them as soon as possible, and pot them off in the same way as Verbenas. The blossoms are only semi-double, but produced in great profusion and variety of colour. P. U.

Cactus Dahlias.—In answer to "R. M." ("Best Exhibition Dahlias"), if he will look on page 706, Gardening, Feb. 13th, he will see a note on Dahlias, also a list of show varieties. I will give a list of Cactus Dahlias which succeed well with me: Delicata, Blanche Keith, Lady Penzance, Matchless, Harmony, Bertha Mawley, Gloriosa, Mrs. Bennett. "R. M." will do best to get a catalogue from some well-known Dahlia-grower, who could also advise as regards soil. My garden is a splendid mixed soil of mould and loam. As regards culture a rich, deep, and moist soil is essential. Dig the ground thoroughly in March, incorporating with it a good supply of well-decomposed manure. Procure your plants as early in May as possible. Pot them in 4-inch pots and place them in your cool greenhouse, well watering them. Harden them off about the third week in May, and when all danger of frost is past plant out 3 feet apart, well securing them to stakes; frequently water with liquid-manure. A good mulching of decomposed manure is very beneficial. Most of the Cactus varieties require disbudding and thinning to produce fine flowers. —E. Howard, *The Rookery Gardens, Dedham, Essex.*

DAFFODIL QUEEN OF SPAIN.

This is one of the finest Daffodils the amateur gardener can grow, or, in fact, anyone who cares for this family. It belongs to the Johnstoni group, that is distinguished by its long, tubular trumpet, as shown in the accompanying illustration. This Daffodil is remarkably robust, the flowers bold, of a soft and charming self-yellow shade, and very sturdy in aspect, though not in the least degree coarse. The bulbs will thrive if planted in Grass and also in the border, whilst to grow in pots for the greenhouse few kinds are more valuable.

Narcissus Johnstoni "Queen of Spain." From a photograph by Mr. S. Major, Paignton, Devon.

THE MIXED BORDER.

I was pleased to see in Gardening recently an illustration of a mixed border, and send you the following notes:

Many of the suggestions I have made in these notes cannot, of course, be acted upon by all flower-lovers; but the principles underlying the whole theme can be put into practice whether the garden is two acres in extent, over which a bracing wind blows, or a small plot in a city suburb.

Our aim should be to clothe the brown earth with flowers that reveal themselves as season follows season—a girdle of blossom from the time of Christmas Roses until the same wintry flower is again in beauty. We get a fascinating result like this from hardy plants, a race that comes to us from many lands and that charms us with its varied expression and glorious wealth of colour.

When English gardens were in the clutches of a bedding-out fever, daubs of red, yellow, and blue, from Pelargoniums, Calceolarias, and Lobelias, and—a thousand times worse—horrible coloured stones, hardy flowers were under a heavy cloud. We are happily seeing this dark overshadowing of all that is fair and beautiful in English gardening gradually disappearing with the better appreciation of hardy perennials.

Beauty of a mixed border.

There are many ways of using hardy plants, and the quite small garden may be made bright and fragrant with them for many months. Use them in a bold way. A few things well cared for and placed are more precious than treble the number jumbled up without a thought as to the ultimate effect produced. Let there be no niggardly use of plants, but each should tell its own tale, and reflect the season of the year. From January until December a well-planted mixed border should give colour, more or less varied, of course, according to the time of year. In such a border plant Daffodils, Crocuses, Chionodoxas, and the rest of a beautiful race of early bulbous plants, Primroses, Auriculas, followed by the flowers of summer—the Pink, Carnation, Tufted Pansy, Larkspur, Evening Primrose, and many more, then the cooler-coloured flowers of autumn, finishing with the Winter Cherry, Christmas Rose, and a rough corner for the spicy Coltsfoot. The dense green of a Rockfoil (Saxifrage) is as beautiful to look upon in winter as almost the veil of white flowers in summer, and the satiny sheen from the foliage of the Pink has its beauty, too.

A border so full of colour as this should not show bare earth patches, but cover the surface with creeping plants, such as the Stonecrops, Saxifrages, and similar things. We get a lovely earth-covering by their use. At this season the common practice in gardens is to dig up the mixed border as if it were a Cabbage plot, with unfortunate results to the bulbs beneath the soil and perennials anxious to extend themselves. This annual digging is a curse; it is unnecessary, hurtful, and stupid. When the border or a part of it gets worn out the proper course is to lift the plants, and enrich the soil. Of course, the mixed border needs attention, but far less indeed than bedding-out demands—of the richer and more varied flower-beauty it reveals I need not describe.

A mixed border is not so easy to plant as one might suppose. We want to study each thing, not muddling up strong growing plants as the Golden Rods with things of less vigour. The earth-covering is the carpet, so to say, from whence the other things arise, and each kind should be represented by a bold group, the Delphinium perhaps at the end of the border, and then repeated in other parts—not, of course, with mathematical regularity. We can then enjoy the flowers, and know what a Primrose, Larkspur, or whatever the plant may be, is capable of giving us in rich colouring. Many a border is spoilt by a regimental way of setting out things—a row of one plant at the back, and then another dwarfer perennial, and so forth—not beautiful in the least degree. I hope none here present are guilty of bunching up the taller perennials. This is needful with a cornstack, but not a fair garden flower that delights to bend its stems about in the wind. A good stake is necessary for many things—Dahlias and Hollyhocks as examples—but that support may be given without sacrificing the natural habit of the plant.

I have written of the mixed border at some length, for the reason we see in gardens so many opportunities of making such splendid colour pictures to tell the year's seasons.

Remember, too, that a beautiful mixed border can be made in quite a small garden attached to a modern villa residence. I saw a charming mixed border last year in a garden but a few yards in length. C.

CLIMBING PLANTS.

By close training upon wall or fence we lose more than half the grace of climbing plants, as they are never so beautiful as when permitted to grow and flower with unrestricted freedom. It is desirable that all bare walls should be perpetually clothed with foliage, but hitherto when this has been done we have ceased to use climbers further, and have missed the true idea, or the prettiest way of using them. By the roadside I often see hedges wreathed in Honeysuckle, Convolvulus, or Hops, and our wild Clematis climbs to the tops of the highest trees and veils their branches in beauty. Similarly in gardens we might garland hedge, bush, or tree, if only we take a little trouble to establish the climbers by giving them a good start, and there would be no need for restriction. There are about most gardens common trees and shrubs upon which this idea could be easily carried out, and the gain in interest and beauty would be great. Any isolated tree or shrub is the best adapted for the purpose, for it would be useless to plant creepers in the average shrubbery where things are already choking one another to death. By selecting a suitable tree a hole can be dug as near the stem as possible, the climber planted and encouraged to grow by the addition of a little fresh soil. A little early training is necessary till its growth reaches the branches, when it can be left to take care of itself, which it will do. Tall trees might have their naked stems clothed, as I have seen them occasionally, with Honeysuckle, Jasmine, and Clematis. Moreover, the extension of the idea would permit of the use of many other things that are far too rampant, according to our present ideas of climbers and our ways of using them. I was once rambling around some grounds of a large garden late in autumn when I came upon a great Hawthorn enshrouded with a Vine whose foliage was crimson and yellow, whilst the amber leaves and crimson haws upon the Hawthorn made up a colour combination beautiful beyond description. Again, how pretty must this be in spring when the Vine has its fresh green leaves, and the Hawthorn its clusters of sweet white flowers. This example suggests a good use for many of the wild Vines so handsome in foliage, but rarely seen in gardens.

The Clematis family is quite a host in itself for this purpose, especially such kinds as C. montana and flammula. The latter I once saw upon a large Holly, and from a height of 40 feet down to the ground it hung like a white sheet, so profusely was it blooming, whilst its delightful fragrance pervaded the air for a long distance around. C. montana upon a Yew-tree makes a charming picture quite early in the year, and C. graveolens in late autumn is equally as pretty; in fact, many of the species of Clematis that have not come into general cultivation would be sought after and grown when such a happy way of using them had been discovered and carried out.

As shown in the cut is also a pleasing way to grow the Clematis.

The Honeysuckles, again, are quite a large family, and if we would enjoy their fullest beauty we must permit them to grow unrestricted. Early in the present year I noted the effect of an Aristolochia upon a Laburnum, and the contrasting forms of leaf have been pretty the whole season, long after the flowers of both had passed away. Many of our vigorous climbing Roses that resent restriction would be quite at home rambling over a tree. Even the good old Gloire de Dijon will take care of itself, as I once saw it monopolising an old Apple-tree, and growing and flowering to such an extent that the Apple-tree had very little chance of doing much good. The cluster Roses, so rampant and so free, must disport themselves upon tree or shrub to develop all their grace and beauty. Such kinds as Mme. d'Arblay, Adelaide d'Orleans, or Ruga will cover a low tree or shrub, and in their season make it a perfect mound of blossom. Some of the fine Rose species of climbing habit, such as R. Brunoniana and others, could be put to good use in this way, although they are rarely seen in gardens.

These random suggestions show that there is an abundance of vigorous climbers that can be used in a free way, and it is to be hoped that our garden planters of the future will pay greater attention to the beautifying of gardens in this way, as the less formality and the more natural beauty we have in and about them the more interesting and tasteful they will be. Now is a good time to plant. A.

Clematis Jackmani over walk. From a photograph by Mr. C. Metcalf, Mill House, Halifax.

PROTECTING WALLFLOWERS.

How to keep Wallflowers safe from the effects of severe frost and boisterous, cutting winds.

Amongst our popular plants for spring bedding there are few, if any, that are greater favourites or that more frequently disappoint us than the well-known Wallflower. This is for the most part brought about by full exposure to severe frost and strong, cutting winds from the north, east, and north-east, and should the latter greatly prevail after severe frost, these plants are frequently totally destroyed, leaving a sad blank in the spring display, and it is almost impossible to find a suitable substitute for their soft, pleasing colours and delightful fragrance. The object of this article is to show how this can be avoided and to have an abundance of stiff, stocky plants annually. From very long experience I am convinced that it is a mistake to plant them into their flowering position during the autumn or early winter months. Should the winter be of a mild nature, such as that of last year, all may be well, but that was a very rare exception, and not the rule for our winter seasons in this country. Frequently, too, these plants are allowed to stand very thick together throughout the summer, so as to become much drawn, and the sudden check they receive in being transplanted at that ungenial season causes them to shed much of their foliage, and are thus in a very bad condition to resist the effects of a severe winter.

I can, with confidence, recommend the following method: Sow the seed about the second or third week in April on light fine soil not overrich from manure. When the seedlings are 3 inches high, and before they are in the least drawn up by being too thick, prick them out into beds from 5 inches to 6 inches apart each way, the beds to be from 4 feet to 5 feet wide, and length in proportion to number of plants required. Let the beds be marked out and the top spit be dug out, clearing out the loose soil, and leave the bottom of the trench smooth and firm; spread a little partly-decayed manure or leaf-mould on the firm bottom, then return about 6 inches or 7 inches of the best soil that was taken out of the bed, make firm, and prick out as above. Keep the plants perfectly free from weeds, and water in dry weather sufficiently to keep them healthy. If the plants are desired to be very dwarf and bushy, as soon as their side branches are 5 inches or 6 inches in length, pinch out the point of each. This will cause them to be very dwarf and compact, but, perhaps, at some little sacrifice of length of spikes and size of individual flower. Previous to frost setting in, let a rough wood frame be formed round the bed, about 12 inches or 15 inches high. This can be simply and economically done by driving in some strong flat-sided stakes at intervals and nailing the boards to them; then nail across the top of the frame some rough laths from 6 inches apart, and the frame is complete. During sharp frosts and cold, withering winds the frame should be covered with old mats, rough canvas, with some flat bundles of straw or long stable-litter. Expose the plants fully whenever the weather is favourable. About the second or third week in March, if the weather is favourable, the plants may be carefully lifted and planted in the beds or borders, where they will, if of a good strain, produce a charming effect. The frame or pit, when the Wallflowers are removed, will be found most valuable for bedding-plants generally that may require slight protection during the hardening-off process until again required for the Wallflowers. H. Ellis.

Saxifraga (Megasea) Stracheyi.—This is undoubtedly the gem of the early forms of this race, and for the cool conservatory or winter garden would be valuable. It should be remembered that this is not always a perfectly hardy plant, and only reaches perfection when accorded slight protection during the winter in frames or the like.

ARTIFICIAL MANURES.

(In reply to "J. W. H.")

We have been asked to give a few notes as to the value of artificial manures and the season to apply them. Though space does not permit us to go into details of all kinds, we gladly give "J. D. H." any information which may be useful, and these remarks will doubtless interest our readers generally.

These manures must be used with care, and are of greater value when growth is active and can absorb the food.

Bone-meal, one of the most handy and cleanly foods, if given to Grass land from March to April, with such aids as wood-ashes or fine soil mixed, is a grand food for worn out soil. We mention Grass lands first as lawns are so seldom assisted in this way, rather with decayed animal manures, which are offensive to the eye and nose. Take

Superphosphate, which "J. W. H." mentions in his letter. This is not an expensive manure, but it is good for Potatoes, root crops of various kinds, and Grass land, and may be applied at the rate of 3 cwt. per acre. It is a quick-acting food, and is readily dissolved if required in a liquid state, and for pot plants is very useful. The next food consists of

Dissolved bones, and these are the raw bones dissolved with sulphuric acid. These largely contain nitrogen, and may be used on any soils, and in a liberal manner. This manure should be spread on the surface, and dug in when preparing the ground for the crop, using it at the rate of 4 cwt. to 5 cwt. an acre. This food may be used from October to March with advantage, and in old gardens would do much good, omitting animal manures for a season.

Bone-meal, of late years, has found much favour with growers. Formerly the bones were given in a broken state, not ground, with the result they required longer to decay, and the plants could not obtain benefit quickly; but with meal the bones are converted into quick-acting food, containing ammonia and acids. This can be used at the rate of 4 cwt. to 6 cwt. per acre for soils, except those containing lime, as for the latter soil superphosphate is best. In gardens of limited size few artificial foods are more useful than bone-meal; it makes quick root-action and is good for vegetables, fruits, or flowers, and if mixed with the soil before planting will encourage fibrous root-action in fruit-trees. For long-standing crops ¼-inch bones are a useful food, as these last longer.

Kainit is a food less known than the above, and as a pure food not mixed with others we are not over fond of it. We admit it is one of the cheapest foods, but that is not the point. This food is a mixture of sulphate of magnesia, chloride, and a large proportion of common salt, and is best applied in the autumn or winter at the rate of 5 cwt. or 6 cwt. per acre. We always mix fish-manure or guano at the rate of half and half when kainit is used as a food for impoverished land. As a spring or summer food we do not like it unless in the proportion named. This is a good food for most crops, and when mixed as advised, half the weight recommended per acre is sufficient.

Guano.—This is a powerful food, quite distinct from the preceding, needing more care in its application. Doubtless, as "J. W. H." will know, it is a substance from foreign lands—the accumulation of sea birds and dead matter. The original Peruvian guano was much stronger that that now sold as such. The best kind is very rich in nitrogen, and still commands a high price. It is a splendid fertiliser for most soils, and makes a grand liquid. Twenty-five pounds of guano will make half a hogshead of liquid, and if used in a dry state as a top-dressing, 1 oz. mixed with some dried soil (about twice as much) is a quick-acting fertiliser. For Peas, Strawberries, Onions, or any crops this is excellent used in showery weather and just raked in on the surface, and for fruit it is valuable used thus and well watered in afterwards.

Fish-manure is not mentioned by "J. W. H.," but it is valuable used the same as guano as a top-dressing for Asparagus, Seakale, or roots. It is a fine fertiliser also for Onions in showery weather, quick-acting, and soon builds up plants, but it must not be thought that it supplies saline matter, as it is not rich in salt. It is a splendid manure to mix with kainit, applied in its natural state. Three cwt. to 5 cwt. is a good proportion per acre, but it is a manure best used in a fresh state, and is excellent for Vines, Tomatoes, Cucumbers, and fruit.

Native guano is a good food as a top-dressing, and may be dug in. It is mostly composed of dried sewage and night-soil.

Nitrate of soda is a fine fertiliser and soluble in water, therefore valuable, quick in action, rich in potash, and good for garden crops; it is recommended for all soils. We advise frequent dressings to heavy ground. Use it as a top dressing (not dug in) at the rate of 2 cwt. to 3 cwt. per acre.

CAMPANULA GRANDIS ALBA.

This is a beautiful Campanula. To grow it well it should be taken up and divided in the autumn, retaining only the very strongest crowns for replanting in the border, and throwing away the small crowns, or planting them in the reserve garden. If this is done, each strong crown will throw up a fine spike from 3 feet to 4 feet high, which will be covered for the greater part of its length with large, pure white flowers for two months or more. In common with C. pyramidalis alba, it continues pushing buds from the stem, and if the earliest flowers are picked off as they fade the spikes remain fresh and beautiful for a long time. This annual division and selection are necessary to secure the best results, for if left alone many weak growths will be made, and the group will be patchy, while the few spikes thrown up will be comparatively small. About forty crowns planted 8 inches apart will make a fine group, and from this number we have this year had thirty-seven good spikes. C. persicifolia and its white variety succeed well with the same treatment. The flowers will be much finer, and the spikes will run to twice the height of those plants left undisturbed; in fact, I believe this to be the proper treatment for all tall-growing varieties. Another fine Campanula is C. latifolia macrantha alba; this and C. latifolia macrantha are capital plants for rough places.

J.

The Tall White Bellflower (Campanula grandis alba). From a photograph by Mr. S. W. Fitzherbert, Lanscombe House, Torquay.

ORCHIDS.

Cool Orchids.—I am putting up a small lean-to, facing north-east by north, and I propose to grown therein cool Orchids. It will not be ready much before April 1st. What Orchids would you recommend me to start with then? And if this is a bad time to make a start, when would you recommend me to commence?—Be.

*** You should commence purchasing plants immediately your house is completed and ready to receive them. We would confidently advise you to buy such species as Odontoglossum crispum (in quantity), O. triumphans, O. luteo-purpureum, O. Halli, O. cirrhosum, O. Pescatorei; also others which, although belonging to the same genus, are quite distinct in habit from those already mentioned, as: O. Uro-Skinneri, O. pulchellum, O. nebulosum, O. Madrense, O. Harryanum, and O. Edwardi. All of the species here enumerated grow thoroughly well in pots, yet it is always advisable to make as much use of house room as possible by suspending some from the rafters of the roof. And for this purpose the following varieties are suitable: O. Rossi, O. Cervantesi, O. Hunneanum, O. aspersum, O. Œrstedi, Sophronites grandiflora, Mesospinidium vulcanicum, and Cochlioda Noetzliana. These latter are small growing species, and for which shallow pans are preferable.—W., *B.*

Oncidium flexuosum. — This pretty Oncid is almost always in flower, and the graceful racemes of bright yellow blossoms are never more useful or welcome than now. They are capital for any kind of decoration, either as cut flowers or on the plant, making up nicely for coat and dress sprays, and very serviceable in épergnes and other contrivances for holding flowers. If the spikes are cut off about 9 inches

from the bottom, I find they break again, and frequently give some useful little sprays. O. flexuosum does well in an intermediate-house in three parts of Sphagnum Moss to one of peat. Pots are better receptacles for the plants than baskets, as they show off the flowers to greater advantage.—W. J.

Odontoglossum hebraicum. — This closely resembles O. odoratum in habit and manner of flowering, but the bloom-spikes are usually longer and more branched. Individually the flowers measure nearly 3 inches across. They are pale sulphur-yellow with spots of deep rich brown. The lip is very attractive, deeper in colour than the sepals, and has bright reddish-brown markings and a wavy margin. It does well in the cool-house under similar conditions of culture to O. triumphans and luteo-purpureum, care being taken not to overpot the plants or to give too much water during the winter months. It is a native of New Grenada, having been introduced in 1879, and occasionally appears among importations of O. crispum.

CHRYSANTHEMUMS.

Flowering Chrysanthemums in a temporary structure (*P. C. N.*).—No better position could be chosen to stand your Chrysanthemums during the summer than that described—namely, against a sunny south wall. We should advise you, all the same, not to place the plants too near the wall, but arrange them in such a way that a free circulation of air around them can be assured. A temporary structure, as you suggest, making the roof of old frame-lights and sides of canvas, would be sufficient to keep out a few degrees of frost, and enable you to flower the plants fairly well. You would be well-advised, however, to purchase a stove or lamp of some sort for use in damp and dull weather, and also during a spell of severe frost. We know of many instances of very satisfactory results from plants grown under similar conditions.

Late Chrysanthemums (*Amateur*).—Your plants are rather a mixed lot, and might easily be improved upon. Carew Underwood and its parent, Baronne de Prailly, are very poor, and should be discarded in favour of more recent sorts. Lady T. Lawrence is a difficult variety to bring to perfection, and should be superseded by another white—say L. Canning. As your object appears to be a late display, grow your plants on to the terminal buds—*i.e.*, the termination of their growth, when these should be seen in clusters. Plants for a late display should never be stopped or pinched after the first week in July, and be kept outdoors until really severe weather sets in. When placed indoors the plants should be kept in a cool state, and a free system of ventilation adopted. By these means you should get the buds to develop satisfactorily. Late plants are sometimes spoilt by placing them in heated structures, where the shoots get drawn and weak, and consequently unable to carry out their proper functions. Florence Percy makes a capital bush plant, and gives flowers of a very singular and novel character.

Eighteen Chrysanthemums for decoration (*L. E. Lewin*).—You are more likely to succeed if you dispose of your old plants and obtain rooted cuttings or established plants of the varieties we mention below. In making a selection to meet your case, we have avoided the newest and more expensive sorts. The varieties are recognised as those with a good constitution in each case, combined with free-flowering properties, so highly prized for decorative purposes. None of those in the selection can really be considered tall, and should flower under ordinary treatment on growth less than 5 feet in height. Pot your young plants on their arrival—if rooted cuttings—in a compost of loam and leaf-mould in equal parts, and a small supply of rotten manure, adding sufficient coarse sand to it to keep the whole nice and open. All these constituents should be well mixed. Keep the plants in a cool greenhouse or cold-frame, where protection from frost can be afforded. On fine days admit air, so as to encourage healthy and sturdy growth. You cannot very well do better than follow the cultural instructions given in Gardening from time to time, as these may always be relied upon. The following eighteen varieties are recommended: Source d'Or, old-gold; Yellow Source d'Or, deep-yellow; William Holmes, crimson; Emily Silsbury, white; Mlle. Lacroix, white; Mr. Chas. E. Shea, yellow; J. Shrimpton, crimson; O. J. Quintus, mauve-pink; Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; L. Canning, white; Mrs. W. Filkins, yellow; Mons. Chas. Molin, bronze; Mrs. W. S. Trafford, bronzy-rose; Niveum, white; M. Chenon de Léché, old-rose; Phœbus, yellow; Golden Dart, yellow.

GARDEN WORK.*

Conservatory.

Climbers add a great deal to the effectiveness of the conservatory, especially at the dull season of the year. Clematis indivisa just now is very beautiful trailing about the roof and producing freely its white star-shaped flowers, which are also very useful for cutting. This is one of the easiest things to grow. It may either be planted out in the border or be grown in a pot. We have a number of plants flowering freely now in 5-inch pots. This is certainly one of the best early-blooming climbers. I like indivisa better than its variety indivisa lobata. Another plant which is producing a charming effect now is Fireball Tropæolum. It is a variety of Lobbianum and has neat foliage and bright scarlet flowers. May either be planted out or grown in pots. I had it several years ago planted in a large house and led up vertical wires to the roof, where it formed veritable columns of bright colour. Used in association with the white Clematis named above the effect is very beautiful. Passifloras, Tacsonias, and other climbers that were pruned back in the autumn will now be breaking into growth and it will be as well to get the disbudding done early. When allowed to grow into a thicket it will be difficult without inflicting some damage to get things put right. Camellias and Azaleas which have done flowering should be taken to a house where the plants can be kept a little closer to make their growth. A vinery will suit them, only be careful about thrips; if any are introduced to the vinery they will find their way on to the Vines and be troublesome. The same remark applies even more forcibly to plants infested with mealy-bug, which is such a horrid insect on Grapes or on plants either. No one can eat Grapes with any relish if attacked by bugs. The vaporiser will kill both thrips and bug, so there is not much excuse now for those who have insect-eaten plants. Any plant in a growing condition which requires more pot-room may have a shift now, only be careful about the watering till the roots work into the new soil. Bulbs which have done flowering should be hardened off and planted out.

Stove.

The choice foliage plants, such as Marantas, Anthuriums, Alocasias, etc., should be gone through and repotted. It is better to repot all these as they grow more freely in sweet fresh fibry compost. Old plants may be broken up to increase stock if required. The compost in which these plants are potted should be very rough and peaty. Lift all the fine soil from it, as these fleshy-rooted plants do so much better when the compost is of a fibry character. If the material is right the plants should be firmly potted. Caladiums will be ready for repotting now. The strong growers of the bicolor major type may be potted in yellow loam and old cow-manure. They make grand leaves in it and are more robust in habit. Just the same remark applies to Gloxinias. Try a few plants in a rougher richer compost and give more pot-room, and have plants from 2 feet to 3 feet over. Cuttings of Coleuses will strike now in heat. These are not so popular as they were, but a few should be grown for brightening up the conservatory in summer. More water will be required now both in the atmosphere and also at the roots, but water all recently potted things with judgment. There are many things which may be propagated now from cuttings of the young shoots in a close frame or under a bell-glass, but in all cases where a bell-glass is used, wipe the condensed moisture from the inside of the glass every morning. If this is not done the damp will settle on the cuttings and destroy them.

Rose House.

A house devoted to Roses is very interesting now; the young growth of the Teas, as the leaves expand and the blossom buds swell, may be watched from day to day with pleasure, and even after dark a run round with the lamp is not without interest, as the crimson and other shades of foliage show up well under artificial light. But in some hands there is a drawback to this enjoyment in the presence of mildew, especially in stuffy houses. The moment a green-fly is seen use the vaporiser, and to keep out mildew ventilate so as to prevent draughts. This can usually be done by opening the lights on the south side only. Give liquid-manure to strong-rooted plants as soon as the buds become prominent.

Tomatoes.

The beginning of March is a good time to plant the houses which are only heated sufficiently to keep out frost. Unheated houses had better wait till the end of the month, as if the plants get touched with frost, even slightly, they are a long time getting over it. It is a mistake to crowd the plants. If planted all over the house the rows should be 3 feet apart and 2 feet between the plants in the rows. They are often planted much closer, but there is nothing gained by it, and they are more subject to disease. The plants for outside planting should be raised now and be kept moving till third week in May and then planted out.

Melons in Frames.

If the beds are in the right condition so as to secure a steady heat for some time, strong plants may be planted now in hills of good loam. To do Melons well there must be a regular bottom-heat of 80 degs. or so. The loam must be good, and the root must be made firm. Do not shade.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Window Gardening.

There are plenty of plants in bloom now. Keep Cinerarias in the coolest window and look sharp after green-fly. Primulas, Cyclamens, and Mignonette require sun. To flower now Mignonette should have been sown last September, and have been kept in a light window all winter. Mignonette sown now in pots will flower about next May or June. Plants in spare rooms will require water now, and ventilation should be given on fine days.

Outdoor Garden.

Everybody is, or ought to be, busy in the garden now. In fine weather stir the surface between young plants, such as Pansies, Pinks, autumn-planted Carnations, and hardy annuals. Tulips coming through should be mulched with old cow-manure, first stirring up the surface. Hardy herbaceous plants are beginning to grow, and anything to be divided should have attention before the growth is much advanced. Phloxes, Michaelmas Daisies, and Perennial Sunflowers, and other strong-growing things should be divided every two years. The beds should be ready for Carnations, so as to get them planted early in March. Large growers of the named florists' varieties find that there is not the same demand for them that there was twenty years ago; the border varieties are more run upon. Those who love one class of Carnations might grow the others, for they are very beautiful and hardy enough to grow outside. These are never likely to be lost, but it would be a pity if they were less freely planted. The old florists' Ranunculus is in the same predicament; those who wish to grow these may plant now. Take cuttings of Dahlias in heat, and sow seeds of Salvia patens in the hot-bed; this is one of the best really blue flowers for massing; it may be raised either from seeds or cuttings. The old roots are preserved in the same way as Dahlias, and when started in heat cuttings of the young shoots will strike.

Fruit Garden.

The stopping and tying down of Vines will shortly be furnishing a good deal of work in amateurs' greenhouses. It is important work, and it should be done promptly; when the young shoots are left till they reach the glass there is risk of injury that will reduce the crop. The usual way of stopping is to leave two leaves beyond the bunch if possible, but rather than overcrowd the foliage I should be contented with one, as one well-developed leaf is better for carrying on the work of the Vines than two half-starved leaves. The cultivator has the matter entirely in his hands, and the arrangement of the foliage has a good deal to do with the weight and quality of the crop. Assuming that we stop at the first or second leaf, the buds in the axils of the leaves will start immediately, and these should be pinched to one leaf. Many good Grape-growers, probably most of the best men, remove all sub-laterals below the bunch and pinch all above to one leaf. This gives a sufficient number of outlets for growth, and the leaves near the base of the shoots have no competition to meet. In tying down Vines for the first time, draw the shoots about half-way to the wires, and then leave them a few days to get used to the pressure. Those who have fruit-trees to plant or prune should lose no time. Strawberries also may be planted now when the ground is in suitable condition. One of the best cooking Apples in season is Normanton Wonder or Wellington; plant it largely where it succeeds.

Vegetable Garden.

Marrow Peas may be planted now with certainty of success. Huntingdonian, an improved Champion of England, used to be largely grown—probably is now under another name. Fortunately, our best Peas are preserved in this way. Someone gets a selection from it and gives it a new name; thus no harm is done, and the seedsman gets paid for his trouble in selecting and keeping the stock true. There is in well-managed seed-grounds a good deal of time taken up in pulling out the rogues. Another good old Pea which has been the parent of some of the principal late Marrows is British Queen, still a good Pea for late planting; its greatest drawback, from the amateur's point of view, is its height, which is seldom less than 6 feet. One of the best midseason and late Marrows is Walker's Perpetual. This has a branching habit, and is a very free bearer of excellent quality. There are many gardeners who only grow one Marrow Pea for midseason and late use, and this is Ne Plus Ultra, still one of the best Peas, and if this is sown fortnightly from the first of March till the first of June there will be abundance of the finest quality Peas. When I was a young man I was inclined to test novelties, and one day I got a rebuff from those for whom I catered, for they preferred the old varieties, to the flavour of which they were accustomed. Get on with the Potato-planting; Spinach, Onions, Parsnips, early Carrots, Leeks, Lettuce, etc, may be sown now. E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from March 6th to March 13th.

This is always a busy month in the kitchen garden, as the main-crops of many things are planted and sown in March. We generally begin planting early Potatoes on the warm border early in February. The warmest place we have is a border about 6 feet wide in front of a range of forcing-houses, where some little extra warmth is obtained from the three rows of 4-inch pipes on the other side of the wall. On this border the early Potatoes, Radishes, Carrots, Lettuce, Cauliflowers, etc., come in very early. The second early border is not quite so warm, but still very suitable for early crops of Potatoes, Peas, etc. We always plant a few rows of Ellam's Early Cabbage on this border to supply a few early dishes, as they are fit to cut a fortnight before the open quarter. Cabbages require warmth early in the season, and as fast as the hearts are cut the stems are pulled out. We plant much thicker on this warm border, as large Cabbages are not required, and they come off in time to plant French Beans, New Zealand Spinach, or some other sun-loving plants. Sowed a few rows of Egyptian Turnip-rooted Beet; this variety turns in quickly. As some of the early-sown plants may bolt, only

a few plants are raised now, and for late use we depend on one or two of the long-rooted kinds sown end of April or very early in May. Pricked off the earliest Celery. We only want a few plants of this sowing for flavouring. We have just sown the main-crops of red and white Celery, and if no check is given they will be quite soon enough. It is not so much early sowing as growth without check which gives the finest produce. Disbudded Peaches under glass; this work will be continued from time to time as required. Fixed the nets over Peach and Apricot-trees; the blossoms on the earliest trees are just showing colour. We used to use Britain's netting, but as these wore out we replaced them with fishing-nets, which are much cheaper and the results are quite as good. Shifted on Chrysanthemums; we grow several thousands, and, of course, the early-struck plants are now making progress, and as regards the latest, lots of cuttings are only just put in, and we shall put in more cuttings yet. I believe as good blooms can be grown from February or March-struck cuttings as when the plants are struck earlier. A rooted cutting 6 inches high would be pinched in April, and one shoot taken up, or two at the outside, and only one bloom permitted on each, and the plants should be limited to 7-inch pots. If carefully managed there will be good foliage down to the pots and the plants of moderate height, just the sort of plants for grouping in the conservatory.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1—**Longest-flowering dwarf annual.**—Please name one or more of above to be used as an edging for a long border at a railway-station and oblige?—N. B. R.

REPEATED QUERIES.

2875—**Rose in Norway.**—Will some reader kindly tell the name of the single yellow Rose which is seen in the gardens in Norway? It has beautiful large, waxy petals, and a quantity of long stamens, golden-yellow in colour.—BILL.

2877—**Potato-growing in South Devon.**—I should be very grateful if you or any of your correspondents would kindly give me the result of any experiments they have made in Potato-growing on a large scale, say 10 acres to 12 acres, in the South Devon country, say in the neighbourhood of Totnes or Newton Abbot? What cultivation they recommend for neglected arable ground, manure, time of planting, and variety of Potato? The ground is stony, and therefore well drained. A Clover crop on it had failed.—PENZANCE.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2—**Time-table for sowing vegetables** *(Taplin).*—This was given in Jan. 23rd last, page 667.

3—**Aspidistra-flowers** *(A. F. B.).*—You can pick off the flowers if you like, but they are harmless to the plant.

4—**Lamb Abbey Pearmain Apple** *(Amateur).*—This variety can be got at any good fruit nursery. See our advertising columns.

5—**Clematises** *(N. H.).*—The Clematises mentioned in GARDENING, page 631, are quite hardy and may be planted now, but not pruned this season.

6—**Destruction of "stare"** *(Kerry).*—We do not know of such a pest. Perhaps you can give us another name for it, and we may be able to suggest something to destroy it.

7—**Treatment of Cherry** *(Chircombe).*—The best way to treat the Cherry is to scrape away the gum and dress over the affected part with a mixture of fresh lime and cement.

8—**Weeds** *(E. K. B.).*—Persevere with the digging, and pick out as much as possible of the Sorrel; also see that none of it seeds, and we think you will succeed in exterminating it.

9—**Growing Mushrooms** *(Fred Cooper).*—You say your land produced Mushrooms last year; that was owing to a hot summer and a moist autumn following. As regards spawning, you will see reply to "A. H." this week. If your land is liberally manured we do not think spawning necessary, but dress with salt in April. Give a good dressing of salt yearly, and if the weather is fine you will not miss a crop, but in cold, wet summers you will not get so many.

10—**Manuring Rose-beds** *(L. E. Lewin).*—By all means fork between your Rose-trees and give them a good mulching of some rich manure. This is a most important operation for the spring and may be carried out when convenient.

11—**Seakale** *(C. E. C.).*—We are pleased to note your success. You have got good return. You would find another lot force much quicker. You would do well to plant forced roots in March in good soil to get a good crown growth.

12—**Polyanthus-Narcissus after flowering** *(Constant Reader).*—The Polyanthus-Narcissus are of no use for greenhouse again after being forced for one year. It is best to plant them out in a border or some convenient place, and buy in a fresh supply for pot culture. They will bloom all right out-of-doors next year.

13—**Sowing Rhubarb-seed** *(A. M.).*—Sow now if you have a frame, in pans and plant out in May, pricking out the seedlings, when large enough to handle, into pots or boxes. If glass is not at hand sow in light fine soil on a warm border in March or early in April, and transplant when large enough into permanent quarters.

14—**Setting up wall-box** *(Amateur).*—The best way of setting up a box against a wall in a greenhouse is to have iron or wooden brackets fixed into the wall to allow the box to rest on, and it can be removed when required. Or a very good plan would be to have it hanging from the roof by means of stout wire or cord.

15—**Treatment of worn-out lawn** *(W. J. B.).*—Grass-seed for lawns should be sown in the autumn, or it may be sown in spring; but if sown as previously stated and the winter be mild it will soon grow and make a fine cover. The seed can be had from any leading nurserymen who sell special mixtures for certain soils.

16—**Best eighteen Cactus Dahlias** *(Wellington).*—Gloriosa, Matchless, Countess of Kintore, Lady Penzance, Delicata, Mrs. Peart, Harmony, Beauty of Eynsford, Bertha Mawley, Countess of Gosford, Ernest Cannell, Juarezi, Kynerith, May Picton, Robert Cannell, Blanche Keith, Mr. Francis Fells, Earl of Pembroke, and Fusilier.

17—**Mushroom-spawn in meadow** *(A. H.).*—We fear you will have poor results on a gravel soil for open-air Mushrooms. It should be good loam or a holding soil. The best time to plant is end of March or early in April. Break up spawn size of an egg, make holes in turf a few inches deep, insert spawn and cover with good soil, rammed over the spawn or trodden.

18—**Clubbing of winter vegetables** *(F. W. H.).*—You will find gas-lime the best preventive. Failing this, dress freely with fresh lime and soot or wood-ashes. We think gas-lime more effective in your case, if procurable. Dress freely, allowing lime to remain on surface a few days before digging in, and take care that the gas-lime is broken finely as the dressing proceeds.

19—**Seakale** *(W. H. J.).*—Seakale planted out a year ago may be planted at any time from now to end of March. On the other hand, you will do well to save a portion of the thong-like strongest shoots at base. These, cut 5 inches or 6 inches in length, will make good plants for another year and not injure the roots you take them from, but may be planted like the older roots.

20—**Myrtle unhealthy** *(L. E. Lewin).*—You should prune your two plants at once, and into any shape you may desire. Water freely and syringe daily from March till October, less freely afterwards. If the plants are in pots they may be placed outdoors in a sunny position from June till September. This treatment should quite alter the appearance and health of your plants.

21—**Compost for Tomatoes** *(Earnest Inquirer).*—The soil you mention will do very well for Tomatoes, but you must be careful it does not contain wireworm. Look over it thoroughly before using it, otherwise the plants will suffer. Begin to feed when the fruits are fairly well advanced. It is a mistake to mix much manure with the soil. We believe more in surface feeding.

22—**Plants for flower shows** *(Amateur).*—You might have Begonias, Fuchsias, Ferns, Gloxinias, Streptocarpus, and Hippeastrums, which are always showy at that season; but you must remember most awards in these cases are given for taste in arrangement, and rightly so. We have often seen poor quality plants so tastefully arranged that others had no chance whatever.

23—**Best six show Pinks** *(Pinky).*—We presume you mean the florists' laced kinds? If so, select from Clara, Rosy Morn, Harry Hooper, Boiard (very fine), Modesty (an excellent show kind), Empress of India, Duke of York (very fine for exhibition), The Rector, and Favourite. We do not recommend individual nurserymen, but try at any good house. Look through our advertising columns.

24—**Green Ivy-leaves as manure** *(An Old Reader).*—Green Ivy-leaves are useless in any shape for a hot-bed. We answered this question recently and stated they did more harm than good. You will find leaves if fresh or stable-manure well mixed the best material you can use, and avoid overheat at the start, which causes a sudden check before growth has made much progress.

25—**Begonia-flowers dropping** *(Begonia).*—It must be the fault of careless ventilation which caused the buds of Begonias to drop off just as they were opening. No doubt you allowed too much front air, which caused excessive drought. Begonia flowers will quickly drop where a cold draught is allowed in a house. They require a cool temperature from 50 degs. to 55 degs. and a shady position.

26—**Sycamore and Plane** *(A. K.).*—The Sycamore and Plane-trees are quite distinct from each other, the name of the Sycamore being Acer Pseudo-Platunus, and the Plane Platinus orientalis. The name of Plane-tree has, however, been at times applied to the Sycamore from the earliest date, as it shows by its botanical name of Acer Pseudo-Platanus (the False Plane), given to it by Linnæus.

27—**Raspberries to fruit in autumn** *(E. M. R.).*—We think you will do well to cut down before middle of April as the season is early. By no means allow young shoots to grow in a clump, as you must thin. You must also bear in mind that your young plants will not give much fruit the first season. All the strength of the plant is needed to build up a good growth for next season; they lack roots to mature fruit.

28—**Treatment of Peach-tree** *(M. B.).*—Prune the coarse Peach-wood at once. Cut back to quite half the length, but cutting close to a wood bud, and this on the side of the shoot, not a front or foreright bud. On the other hand, too much leaf-mould, if your turf-mould was light, is not at all good for the trees, as it encourages gross wood growth and few fruits. Not knowing your soil or proportion of leaf-soil employed, we can only surmise, as by your note it appears you used leaf-mould freely.

29—**Muscat Vine Mrs. Pince in vinery** *(Young Gardener).*—The best way to inarch is by getting a pot plant of the Gros Colman, and to do this would mean a season, it being necessary to strike the one now for next season's inarching. But you could also inarch with a strong cutting from your Gros Colman, placing the end of the graft in water in a bottle and thus save a season. At anyrate why not try both if you strike a Vine from eyes now. If the other failed you would be able to work next season.

30—**Peaches in greenhouse** *(J. B. Hanley).*—We do not know what information you desire; you give us no particulars whatever. You say you have Peaches in blossom—you do not say if these are unhealthy in any way—Vines up roof, growing Ferns and plants in variety, but you give us no particulars. We know such plants can be grown, but amateurs often try to grow too much in one house. Why not grow Vines well with plants, or Peaches and plants. Tell us what is wrong and we may help you.

31—**Fertilising flowers** *(Ortho).*—A strong pocket lense, such as one of Browning's platyscopic lenses, would suit you, we imagine. They are made in three different strengths. The strongest is said to magnify 30 diameters, and is certainly a very powerful glass. Other makers provide very similar glasses. Perhaps an ordinary Codrington lense, which may be bought at any optician's, would suit you. A compound microscope would, of course, be much stronger, but it would be much more expensive and not so convenient for your purpose.

32—**Three Roses for line-posts** *(E. H. P.).*—You should get what you want from the following: William Allen Richardson, Gloire de Dijon, and Aimée Vibert. Your garden soil will not need any special preparation. After making the holes for their reception place in the bottom of each one a liberal quantity of good rich manure, covering this with loam or your garden soil, if this is as you say in a fairly good condition. Let the roots of the plant be stood on this, and the soil filled in with care and in a firm manner.

33—**Treatment of Tuberous Begonias** *(Hortu).*—If your Tuberous Begonias are commencing to make a start do not delay in repotting them. Shake the tubers out of the old soil and pot on into the same-sized pot or a size larger, according to the bulb, in a mixture of sandy turfy loam and peat. Place in a temperature from 55 degs. to 60 degs. to encourage them to make a good start, and afterwards place in a cooler position. In May or June a larger pot may be afforded if they have made good plants and are required for exhibition.

34—**Use of pigeon-manure** *(A.).*—The manure is good for the garden dug into the soil in the winter or early spring. We would advise its use in a partially decayed condition; that is, laid up in a heap for a time and mixed with some soil, or, what is better, wood-ashes or burnt refuge from garden. We do not advise sawdust, and to make a hot-bed it is useless, as we cannot see how you can obtain the necessary warmth that constitutes a hot-bed. Of course, mixed with a liberal quantity of straw and manure from stable it would do then.

35—**Neglected Pear-trees** *(Jacotines).*—We fear root-pruning is the only remedy, as cutting tops hard in only adds to the evil. It is full late to root-prune, but we think you may do it safely. Proceed thus: Get out a trench 3 feet from wall and 4 feet deep. Undermine the tree and cut away tap-roots and all the coarse gross roots in digging out trench. By so doing you will check gross growth. The tree will form fruit-buds, not wood. In filling in trench ram soil firmly, but do not give manures, but such aids as burnt refuse, wood-ashes, or old mortar.

36—**Weed on lawn** *(Amateur).*—We advise you to rake off the patches of this weed in your lawn, taking care not to leave any, as it spreads very quickly when once it is well-rooted into the soil. Afterwards give the lawn a slight dressing with fine soil and wood-ashes, and scatter a little fresh seed. It is advisable to go over it after sowing with a garden-roller once or twice to press the seed into the soil, and to get the lawn level. If the spring and summer should be dry a constant supply of water will be necessary to keep the young Grass moist and in growing condition.

37—**Sowing Sweet Peas to bloom in July** *(Amateur).*—You are late for these. Sweet Peas do not flower freely so early as you name unless sown in the autumn or else raised under glass as soon as possible now. Sow a few—say, three or four—in a small pot and keep them under cover until next May, when turn out into a rich loam. They are some time coming to full beauty, and to have them so by July 25 it is best to sow late in the autumn. We find it a good plan to sow in deep pots during October, keeping them in a cool pit until middle of March, and then transplant them to their permanent quarters.

38—**Green vegetables in abundance** *(H. H.).*—To get Cabbage you must sow Rosette Colewort in July, and plant out in batches for succession. Broccoli sow in April. Sow Autumn Protecting, Main Crop, and Sutton's Late Queen; these will give you a succession. Kales sow in March and April. Plant when ready. These give a supply from October to April. Dwarf Green Curled, Asparagus Kale, and Read's Hearting are good kinds. If you sow Brussel Sprouts in March you should have plenty in winter, but do not crowd any of above kinds in the seed-bed; also sow in good land and plant before plants get drawn.

39—**Treatment of Hydrangeas** *(Amateur).*—If the Hydrangeas are commencing to make fresh growth we advise you to repot them, but cut out any dead woods that may be found and prune into shape a little. Turn out of the pots, and take a little of the old soil from the roots, just sufficient to allow a size larger pot. Good turfy loam with a small portion of leaf-soil and sand is most suitable for Hydrangeas. It is no advantage to Hydrangeas to overpot them, as it induces them to flower more freely when the pots are root-bound. As regards turning

the pink variety blue, that depends chiefly upon the position they are placed in. Stand them in a shaded position where the sun will not affect them, and by careful watering do not allow the plants to become dry. A greenhouse temperature of about 50 degs. is essential, and the longer they are kept better will be the colour of the flower.

40—**Dahlias for show** (*Name lost*).—Very good single Dahlias for show are Amos Perry, Annie Hughes, Beauty, Eclipse, Demon, Conspicua, Duchess of Fife, Dorothy, Duchess of Westminster, Gulielma, Formosa, Duke of York, Mikado, Mr. Kennett, Paragon, Northern Star, Yellow Satin. Of Pompons select Arthur West, Comtesse von Sternberg, Darkness, Dolly Keith, E. F. Jungker, Eurydice, Fairy Tales, Gem, Glow-worm, Little Darkie, Mabel, Pure Love, Whisper, Tommy Keith. We think the Tom Thumb Dahlias are disappointing, but as you ask for a dozen varieties select from the following: Canary, Daisy, Fairy, Gem, Lilliput, Midget, Pearl, Bantam, Bootles, Venus, Little Nell, Bo-peep.

41 — **Manure for forcing Strawberries** (*H. F. Battersby*) —There are many erroneous statements regarding manures. Of course manures containing ammonia are excellent, also lime, but not a necessity, the latter especially so. We find excellent crops may be grown with liquid-manure from animals. Of course this is largely charged with ammonia, but so much depends upon the soil the plants are growing in, and we find a quick-finishing crop like Strawberries needs a quick-acting fertiliser and prefer such. By no means feed until the flowers have set. If you do you may lose your crop. Sparingly at first, when set, freely. As growth increases you will then see the value of liquid; there is so short a time for the crop.

42—**Plants for front border facing east** (*E. H. P.*)—We advise you to plant your border with hardy perennials, as you are more likely to get a satisfactory display from these than the more tender subjects, many of the latter requiring a sunny position. Plant, therefore, herbaceous Phloxes, Pæonies, Hellebores (Lenten Roses), Solidago Virgaurea (Golden Rod), Lilium Martagon, croceum, and tigrinum, Anemone japonica alba and rosea, Lily of the Valley, Solomon's Seal, etc. Tufted Pansies will also do exceedingly well in such positions, either in masses or as a margin to large beds or borders. Almost any hardy plant will do, and you could also have a few of the best hardy annuals from seed sown this month. Remember to sow thinly.

43—**Blighted leaves** (*Countess*). — It is evident you have kept the plants in too uneven a temperature. All of them are suffering from this cause. You have ample ventilation, but it would certainly be better if top ventilation could be given. Pick off as many of the Cineraria and Primula leaves as you can that are affected. It is a small maggot eating between the cuticles of the leaf, and unless you check them more will appear another season. Burn the plants as soon as bloom is past. The Hydrangea leaf is burnt from bright sun during the past few days after so long a spell of dulness, and is also dirty from insects—probably it is beneath a climber infested with aphis. From the leaves sent we do not think you are sufficiently particular about cleanliness from insects.

44—**Starting Tuberous-rooted Begonias for bedding** (*L. K. W.*).—A good plan in starting these tubers into growth and preparing them for bedding out later is to place them in shallow boxes, first spreading a layer of compost over the bottom and standing the tubers on this. A light covering of the same material will be all that is necessary until roots are freely emitted. The compost should be made up of equal parts leaf-mould and loam, and a free use of coarse sand. Light syringing overhead will assist in starting the growth, providing the temperature can be made just nice and warm. When it is observed that roots are freely emitted, the tubers should be potted, using pots of a size convenient to the proportions of the roots. When those pots are well filled with roots, another shift into those 5 inches in diameter, will be necessary. After a time, and providing frost can be excluded, these may be placed in a cold frame, and gradually hardened off preparatory to being placed in the open, which should be towards the end of May or when all fear of frost is over.

45—**Tufted Pansies from seed** (*E. H. P.*).—You may easily raise these charming plants from seed now, providing you have a greenhouse with a fairly warm temperature. Obtain your seed from a really good house if you wish to be successful. Any light and gritty compost will answer the purpose, and boxes or pots may be utilised. Only just cover the seed, and before placing the seed box in the warmest portion of the house, hold it in a bath of tepid water so that the water may percolate up through the holes in the bottom. In this way the soil becomes saturated, and may not need again to be treated in like manner. Cover the box or pot with a piece of glass, taking this off occasionally to remove excessive moisture. In a week or two the seedlings will be seen in large numbers, and these, when large enough, may be transferred to other boxes and eventually placed in a cold frame and planted in the open during May or June. During July or August they should flower freely. Sow outdoors during July or August, pricking off the seedlings when large enough, and transferring them where they are to flower in the spring, before the hard weather sets in.

46—**Will charcoal keep?**—I have had a small sack of charcoal by me for a year. Will it be good now for potting purposes? Also please say if it deteriorates if kept in a dry place, and how long it can be kept good?—Indefatigable.

*** *Charcoal keeps for years in a dry, cool place, does not deteriorate, and is good for any purpose.*

47—**Japanese Wineberry.** — I cannot see the Japanese Wineberry advertised in Gardening, and I wish to procure one. Can you help me?—M. L. P. F.

*** *You will see this in any good nurseryman's catalogue under the name of Rubus phœnicolasius. We do not recommend individual growers. Look through our advertisement columns.*

48—**Flowers for bed.**—Will you kindly give me suggestions as to what hardy perennials are suitable to plant upon a bed sloping to the south, and which is somewhat overshadowed by trees?—Westmoreland.

*** *German Irises, Pinks, Pansies, especially the beautiful Tufted kinds, Michaelmas Daisies, Perennial Sunflowers, Œnothera Fraseri, Phloxes.*

49—**Flowers for a shady place.**—I am about to raise from seeds Stocks, Asters, Lobelia, Zinnia, Verbena, Mimulus, and Petunia. Which of the above do you think suitable for planting out, when sufficiently grown, on westerly border, which only gets about three hours' sun during the summer-time? Open neighbourhood; good soil.—Shade.

*** *We should confine the selection to the Mimulus and Petunias.*

50—**Plants for edge of pond.**—What plants are best to put in, or what seeds best to sow, round the edge of a pond close to the water?—R. C.

*** *Plant Iris sibirica, Kæmpferi, Ranunculus Lingua (Great Spearwort), Spiræa palmata, Marsh Marigold, Loosestrife (Lythrum Salicaria rosea), Primula japonica, P. rosea (if it is not likely to get overrun), Oswego Tea (Monarda didyma).*

51—**Pansies.**—What is the difference between Viola and Violetta, Pansy and Tufted Pansy, or are they all the same, but only different names for the same thing?—E. H. P.

*** *The term "tufted" has been very properly used to distinguish plants of a spreading habit, like Pinks, Aubrietias, and Alpine Violets from plants with single erect stems, like, say, the Stock, Lupine, and Aster. The German, French, and older Pansies in our gardens do not spread at the root as Tufted Pansies do. Plants of this "tufted" habit are often a mass of rootlets even above the ground, so that they are easily increased, and the term Tufted Pansies is a good one in all ways. Without an English name we shall always have confusion with the Latin name for the wild species, to all of which belong the old Latin name of the genus Viola. It is now agreed by botanists that all cross-bred garden plants—including Tufted Pansies, of course—should have popular English, and not Latin, names. "Bedding Viola" is a vulgar compound of bad English and Latin; whereas "Tufted Pansy" is a good English name with a clear meaning. Violetta is a name given to a group of Pansies with smaller flowers than the tufted kinds, but such a name is wholly wrong to apply to a g oup.*

52—**Blenheim Orange Apple.** — Is Blenheim Ornge Apple the same as Blenheim Orange?—M. B.

*** *Yes; no difference whatever.*

53—**Double Begonia-flowers dropping.**—Last year I had some Double and Single Begonias, which I kept in a small greenhouse, where they were shaded from the sun in hot weather. They looked very healthy, but they dropped most of their buds when about three-parts open. The double ones were the worst, but they all did it more or less. Can you suggest the reason and how to avoid a repetition of the failure this year? Are 48 pots large enough for Begonias and Achimenes, six in a pot?—Anon.

*** *Evidently over-watered or the reverse.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*C. H. B.*—Dendrobium Cambridgeanum.——*G. A.*—1, Clematis indivisa; 2, 3, and 4. Varieties of Pteris serrulata; 5, P. serrulata cristata.——*Olive.*—Camellia japonica semi-duplex.——*A. K.*—Specimen sent is Acacia longifolia.——*Narcissus.*—1, Ophiopogon Jaburan variegatum; 2, Please send flower; 3, Cyrtomium falcatum; 4, Bertolonia sp.; 5, Phlebodium aureum; 6, Iresine Lindeni; 7, Onychium japonicum; 8, Pteris longifolia.——*Northampton.*—1, Deutzia gracilis; 2, Adiantum pedatum; 3, Lemon-plant (Aloysia citriodora); 4, Pteris cretica; 5, Bromeliad. Please send flower.

Names of fruits.—*Amateur.*—Fruit much shrivelled, but probably Sturmer Pippin.——*Cwircombe.*—The name of the Apple is Hollandbury, a very good culinary Apple and free cropper.——*A. J. New.*—Alfriston.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. Grundy.—White Gem Celery is one of Messrs. Sutton's, of Reading, specialities.

GARDEN PESTS.

Grubs for name (*Constant Reader*).—The greenish caterpillar you sent was that of the yellow underwing-moth (Triphæna pronuba); the two others were those of the common dart-moth (Agrotis segetum). Both are most injurious to the roots of most plants. They are, unfortunately, very difficult to destroy; the only practical way is to turn them up out of the ground and kill them. This is no doubt tedious, but no insecticides can be made to reach them so as to be of any use.

Grub infesting greenhouse (*F. N. C.*).—The grubs infesting your greenhouse are those of the Marguerite Daisy-fly (Phytomyza affinis), or a very nearly allied species. The best way of destroying this insect is by pinching the leaves where the grubs are. They may easily be seen by holding the leaves up to the light. This may seem a tedious proceeding, but it is very effective, and insecticides will not reach the grubs within the leaves.

Sparmannia-leaves attacked (*Perplexity*).—I cannot say what has attacked your Sparmannia-leaves. What you sent in the piece of gummed paper I thought at first was the case of one of the case-bearing caterpillars, but on pulling to pieces I could not find anything inside, and it did not appear to be hollow, so I do not think it had anything to do with the injuries to the leaves.—G. S. S.

POULTRY.

Delayed hatching (*Brockweir*).—Eggs selected for hatching should, if possible, be under a fortnight old. Freshly-laid eggs hatch in proper time, and produce strong, healthy chickens, while stale eggs will hatch sometimes as much as two days late, the chickens being weak and unable to emerge from the shell. There can be no doubt that the older the egg the weaker the chicken, and the time occupied in breaking from the shell varies according to the strength of the chicken, and, again, some chicks have greater obstacles to overcome than others, as all shells of eggs are not of equal consistence or thickness. There can be but little doubt that the eggs were of various ages when placed in the incubator. As yours is "an entirely reliable machine, never having varied one degree," there is no other way of accounting for the irregular hatching.

Loss of feathers (*Wychwood*).—Fowls, when not well supplied with green food, have not access to lime in any form, or are too closely housed, often acquire the bad habit of destroying each other's plumage by pulling out their feathers. You had better remove the cockerel from the other Fowls, and anoint the damaged parts with sulphur ointment; nothing will, however, restore the plumage, but the feathers will be renewed at the next moult. Let all your Fowls have an abundant supply of green food if they are not on a Grass-run, a good dust-heap to roll in, and plenty of old lime or mortar-rubbish to peck over. The inflated wattles should be dressed with cooling applications, such as spermaceti or zinc ointments. Keep the bird in a dry, warm place, and if it is in low condition supply it with plenty of nourishing food, and twice a day give it a tonic bolus containing ground Ginger and sulphate of iron, or some bread soaked in strong ale.

Hens not laying well (*York*).—You are evidently crowding your Fowls in too small a space. We should advise you to kill off the old hens and keep only last season's pullets, reducing the stock to about half the number you have at present. You do not say if the whole of the run is covered in or not. Where so many Fowls are kept in an uncovered run it is almost sure to be constantly damp and muddy under foot, which keeps the hens in a constant state of chill and retards their laying. A poultry-run should be thoroughly drained, and the ground raised by the addition of a foot or so of chalk or bricklayer's rubbish, over which should be spread a few inches of sand to be raked over daily, and renewed from time to time. Most of the diseases to which Fowls are liable arise chiefly from stagnant wet in the soil, and overcrowding. You should give the first meal in the day in a warm state, and as hens cannot lay well without a portion of animal food being included in their diet, you might give a little minced meat when worms are not to be obtained. Do not fail to provide your Fowls with a good dust-heap, it being an excellent health-preserver, and let them always have a small supply of old mortar, crushed oyster-shells, or ground bones.

Preserving eggs for winter use (*Mrs. Sydney Ponsonby*).—Eggs packed in salt will keep fresh for many months, but the salt used must be absolutely dry, and be kept dry from the time the eggs are put into it till they are removed. A box should be used, the top and bottom of which can be easily removed as required; a convenient size is one that will hold about five dozen eggs. A layer of salt having been placed on the bottom of the box, the eggs should be placed upon it, on their sides. These should be covered with another layer of salt, and another lot of eggs packed in, and so on till the box is full. This packing may go on from day to day as the eggs are collected, and care must be taken to press and pack the salt as firmly and closely as possible without breaking the eggs. The lid having been fixed on firmly, the box must be stored away in a dry place. When the eggs are required for use the box should be inverted and the bottom removed, so that the eggs that were first put in may be the first used. Lime also affords one of the simplest means for preserving eggs fresh for a length of time. A number of eggs having been placed in an earthenware crock, a mixture of lime and

water should be poured over them, filling up the vessel nearly to the top, so that other eggs may be dropped in from day to day. Only as much lime need be used as will be held in solution by the water, for if a thickness of lime settles upon the bottom of the crock the eggs will become embedded in it and be difficult of removal without breaking. Eggs can also be preserved by coating them with the thinnest possible layer of pure fat or butter, it being only necessary to take a piece about the size of a Pea upon the finger, and rub it all over the shell, leaving no portion untouched. The grease filling up the pores of the shell excludes the air, and keeps the egg fresh, for an egg exposed to the air is continually losing a portion of its moisture, in place of which air enters, causing it to become tainted and in course of time putrid.

Rearing Geese for market (*M. C.*).—Geese would succeed very well indeed upon your rough Grass-land with a stream running through it. The common Goose, such as is seen in most parts of the country, would prove the most profitable and easy of management. These are generally white, or white and grey mixed. The gander should always be white and of large size. The Toulouse produces a large number of eggs, but is not good at sitting or rearing its young. Your land would carry two breeding stocks, consisting of gander and four or five Geese each; these would produce upwards of one hundred Goslings in a season. Geese, being grazing birds, obtain the greater part of their living where they have a good range of Grass-land, but should be allowed a small supply of grain, such as Barley or Oats, every morning and evening A night shelter should be provided for them, and paved with brick, over which a little fresh straw should be constantly littered, while a compartment 2½ feet square should be provided for each Goose wherein she can lay and sit. The time for commencing laying is the early part of February, and about thirteen eggs is the usual number produced before sitting, and this number is quite as many as the largest Goose can well cover, although Turkey hens that are sometimes used for sitting on Goose-eggs will easily cover fifteen or sixteen, and prove excellent mothers for Goslings. March and early in April is the best time for hatching; Geese should, therefore, begin to sit in February or early March. Goslings hatched after April are difficult to rear. The Goslings need not be fed for twelve hours after hatching, when their food may consist of either warm bread and milk, or thin Barley-meal and water, with chopped Lettuce leaves or Goose Grass or Chivers, which grows so plentiful upon hedge-banks in spring, and of which they are very fond. The mother with her brood should be cooped for a few days, when, if the weather be mild, they may be allowed to go abroad, taking care that they do not go out too early in the morning, or remain out too late in the day, and that they do not go into the water till they are ten days or a fortnight old, or they will be liable to cramp. What are known as green Geese are young Geese fattened at about the age of four or five months (and are very delicate eating) upon Oatmeal mixed with skim milk, Peas, Oats, and other grain, or where they can have the run of stubble-fields after the corn is harvested, they are often in fine condition for killing by Michaelmas. Young Geese can be soon brought into a condition for killing if at about four months old they are put into a sheltered pen, kept clean and dry, and supplied with Oats, plenty of fresh water for drinking, and an abundant allowance of green food, such as Lettuces or Cabbages. They will consume a great quantity of the green food, which greatly helps in bringing them to perfection in a short time. To fatten Geese for Christmas give for the first fortnight or so Oats moistened with water, and afterwards Barley-meal mixed to a crumbly-paste. They can be plucked more easily, and the feathers are in better condition if they be allowed to go into the water a few hours before being killed. You could keep Ducks as well as the Geese, and they would pay you very well, as the Ducklings so quickly become fit for market, and the stock birds would be quite at home in, and get much of their living from your weedy stream; they would, however, have to be well looked after during the laying season, as Ducks are very much given to the bad habit of depositing their eggs in any place where they may happen to be at laying time, and there is more difficulty in getting them to take to a nest than there is with the Goose, although when once accustomed to a nest, they seldom forsake it.—S. S. G.

LAW.

About Broccoli (*Anxious*).—When you ordered the goods as advertised and the advertiser accepted the order there was a complete contract between you, and it was the duty of the advertiser to supply the goods in question, and it was your duty to receive and pay for them. As the Broccoli supplied was of a different variety to that ordered and agreed to be sent, the advertiser has been guilty of a breach of contract, and you are entitled to damages for the injury sustained through the breach of contract. The measure of compensation will be the loss you have sustained through planting the variety sent instead of the kind ordered.

Haystack left on land at expiration of lease (*Inkhorn*).—If the lease contained no provision permitting you to allow a hayrick to remain for removal at a future time you had no right to leave a hayrick when you quitted, and the incomer may treat you as a trespasser and summarily eject you whenever you attempt to remove it. You cannot remove it without committing a trespass, unless he gives you permission to enter. As he has requested removal, you had better have it removed while you have the opportunity. He cannot recover rent for the standage of the rick, as the relation of landlord and tenant has not existed between you, but he can recover from you for the use and occupation of the land by the stack. If he asks a reasonable sum as "rent," pay it, and be thankful that he allows you to remove the stack at all.

Railway company taking possession of garden.—I rent a garden upon a written agreement for a yearly tenancy, with six months' notice from either side to determine the tenancy. The agreement contains a clause in which the landlord contracts himself out of all compensation for improvements. The garden adjoins a railway, and during the summer the railway company bought the garden of my landlord. They broke into my garden on the 1st of September, cut down fences and fruit-trees, knocked down doors, and did a lot of damage to the crops. On September 28th my landlord's solicitor gave me notice to quit on March 25th, 1897, and in October the company fenced out their ground and commenced to widen the embankment. Can I claim for damage done before my tenancy expires, and if so, from whom? After giving me notice the landlord's solicitor instructed the rent-agent to deduct 50 per cent. of the rent, but the solicitor now sends me notice to pay the full amount or proceedings will be commenced.—An Old Subscriber.

*** As the railway company have purchased the land by agreement and not under their statutory powers they were trespassers when they entered on the garden. The landlord could only sell them his reversion; he could not sell them actual physical possession of the land, as he had parted with that and could not resume it till the expiration of a proper notice to quit, duly served upon you. If the landlord authorised the company to enter for any purpose and without your express consent, he is liable for breach of covenant for quiet enjoyment, and damages may be recovered from him. You can certainly recover damages from the railway company, as the permission of the landlord will avail them nothing; they are trespassers from the beginning, and may be made to pay dearly. The best course you can take is to put the matter into the hands of a solicitor, who will recover ample compensation for you without any great expense to yourself. No legal proceedings will be necessary, but until you have consulted the solicitor you should pay no rent under any circumstances.

Verbal tack of market garden—English law and Scotch law.—On the 1st of November last I took a quarter of an acre of ground at the foot of a man's garden on a verbal tack for five years, and I erected upon it a greenhouse, which I have filled with plants. The man now refuses to allow me to dig the ground, and denies the letting, as he had no power to sub-let, and he has directed me to clear out. I took this ground to grow produce for market. What should I do? Are the answers to the law queries in your issues of January 23 and 30 applicable here? Is the law the same in Scotland as it is in England?—N. B.

*** The law in England and the law in Scotland are in many respects very different. The provisions of the Market Gardeners' Compensation Act, 1895, have no application in Scotland, for this Act merely amends and extends the Agricultural Holdings (England) Act, 1883, and has no application to or connection with the Scotch Agricultural Holdings Act. But even if this land had been in England the provisions of the Act of 1895 would not have applied, for its provisions have no effect in the case of a holding let after January 1st 1896, and cultivated as a market garden, unless it has been in writing agreed that the holding shall be let or treated as a market garden. Your "tack" was a verbal one, and so the Act would not have applied, even if the land had been situate in England. In one respect the law is exactly the same in England and in Scotland. A verbal lease or tack for more than three years is not binding in either country. In England a tenant may sub-let if there be no written agreement or covenant by the tenant not to sub-let, but in Scotland the position is reversed, and the tenant has no power to sub-let if he holds under a lease for a term not exceeding nineteen years. We do not profess any acquaintance with Scotch law, and we merely give you these examples (which apply to your case) to show that there is a marked difference in the law of landlord and tenant. We think you had better remove the greenhouse and give up possession of the ground, of course paying nothing for the time you have been in partial possession. If this advice is unpalatable you had best consult a solicitor or law-agent on the spot.

The rating of greenhouses.—Can you give me any particulars of cases tried relating to the rating of greenhouses? If we understand aright, the decision of the Master of the Rolls in Purser *v.* the Worthin Union, greenhouses should not be rated at all.—Gardener.

*** You are probably aware of the provisions of Sections 211 and 230 of the Public Health Act, 1875, under which the owner of tithes, or the occupier of any lands used as arable, meadow, or pasture ground only, or as woodlands, market gardens, or nursery grounds is to be assessed in respect of the same in the proportion of one-fourth part only of such net annual value thereof to an urban district rate, or to a rate made to defray the special expenses of a rural district council. It was at one time contended that when greenhouses were erected in a market garden the buildings were to be rated separately on their full annual value, in the same way as other buildings are rated, and that the remainder of the market garden was to be rated on the one-fourth scale. The first case decided was in 1885, and there a market garden of 2½ acres in extent had a large number of greenhouses thereon; in fact, 2 acres were covered with greenhouses used for growing flowers and fruit for sale, and the Middlesex Court of Quarter Sessions decided that the garden and the greenhouses should be rated on the one-fourth scale. This was the case of Kay *v.* Finchley. Then came the case of Purser *v.* the Worthing Local Board, where the owner of a market garden covered nearly all the soil with hot-houses for increasing the growth of fruits, flowers, and vegetables, and the local board rated him for the value of the buildings instead of a market garden, and the Court of Appeal held that that the local board was wrong, and that the owner was rateable only for a market garden, under section 211 of the P.H. Act, 1875, as the garden was none the less a garden because glass-houses were over it. These are the two cases which lay down the law at present, and there has been no subsequent case in which these decisions have been questioned, still less overruled. The effect of these decisions is not to prevent greenhouses from being rated, as you appear to imagine, for the greenhouses are taken into account as enhancing the value of the garden and are valued with the garden. The garden is then rated on this valuation to the poor rate, but to the district rate it is rated on the one-fourth scale. If it had not been for these decisions the greenhouses would have been

separately valued and rated upon the full annual value to the district rate, and the remainder of the garden would have been separately valued and rated on the one-fourth scale to the district rate. For the purposes of the Agricultural Rates Act market gardens are "agricultural land," but there is a serious difficulty as to the meaning of the words "market gardens and nursery grounds" in this clause. Upon the whole, it seems that the legislature must have intended that the buildings in market gardens should not be separately valued, as the definition of the latter enactment follows so closely the terms of sections 211 and 230 of the Act of 1875, and it must be presumed that the legislature intended that the words should be interpreted in the same way as under the earlier Act; and, if this view be correct, greenhouses must be valued with the garden in which they stand, and not separately from the garden, and the occupier of the garden will pay one-half the rate in the pound payable by the occupiers of houses, buildings, and other hereditaments.

BEES.

COMMENCING BEE-KEEPING.

In reply to "Lady Amateur."

You will find Bee-keeping a very interesting pursuit, and after having obtained a little practical experience, will be quite able to manage a few hives without assistance. Even the hiving of swarms is not such a difficult operation as it may appear to the uninitiated. With the protection of a veil for the face and thick woollen gloves on the hands, with the addition of ordinary coolness and confidence, it becomes a very simple matter; but, in point of fact, Bees do not use their stings except in self-defence, and, as a rule, are in the best of tempers at swarming time, from the fact that each individual has gorged itself with honey before leaving the hive, and is, therefore, quite indisposed to do anything more than to join in forming a cluster around the queen upon the nearest suitable twig or bush. The swarm becomes so dense and compact that a slight shake of the twig upon which it is hung will cause every, or nearly every Bee to drop into the inverted skep held below to receive them, what few may be left behind soon rejoining their friends in the skep, now placed upon the ground for a short time before being placed upon its permanent stand. In examining the interior of the hive, manipulating the Bees, and so forth, you will find a bellows-smoker most useful, as a few puffs of smoke from smouldering brown paper, rags, or decayed wood, injected into the hive render the Bees harmless. The smoke is used, not to stupefy them, but to cause alarm in the hive, the effect being that the Bees fill themselves with honey from the combs, and with their honey-sacs full they rarely sting unless hurt. If yours is a bar-frame hive your Bees will afford you much more interest than they would if housed in a straw skep. In either case we should strongly recommend you to place any swarms you may have from your stock in frame hives, for, although Bees will work in almost any kind of receptacle they may be placed in at swarming time, they will succeed better in such hives as can be adjusted to their requirements from time to time. In a bar-frame or movable comb hive complete control is obtained over the Bees. Sectional boxes can be placed over the tops of the combs for the reception of surplus white comb honey, Bees and comb can easily be interchanged from one hive to another, swarming can be controlled in great measure, and the honey extracted from the combs during the honey season, and the combs returned to the hive to be refilled by the Bees. As your hive is supplied with candy you need do nothing more for a few weeks beyond seeing that it is well protected from the weather, and that the tops of the combs are warmly covered up if it is a frame hive, because the rearing of young Bees will soon commence, and if the hive is well protected there is a great chance of the brood becoming chilled should there be a sudden spell of cold weather. During fine, mild weather at the end of March you may begin to feed with sugar-syrup, and this may be continued, in small quantities, till the Bees are bringing in sufficient stores to carry on the brood-rearing operations. If, however, the hive contains abundance of sealed stores by the end of March, the Bees can be stimulated to increased brood-rearing if some of the honeycomb be uncapped by means of a thin, sharp knife. It is seldom that much surplus honey is obtained when swarming is allowed to take place, and swarming can usually be prevented if more room is given in the hive and supers, and the hive is kept cool and well ventilated; but, probably—during the first season, at least—you would like to increase the number of stocks. We get most swarms from straw hives, as in these it is more difficult to check the swarming fever. You will probably find the articles upon Bee-keeping, appearing from time to time in Gardening, useful to you in the management of your hive. S. S. G.

BIRDS.

Canaries going blind (*C. B.*).—For a tumefaction, or swelling of the eyelids and surrounding skin, to which Canaries are subject, and which is sometimes of so severe a character as to render the patient completely blind, Dr. Greene, in his "Diseases of Cage Birds," recommends fomentations with warm decoction of Poppy-heads or Camomile-flowers, together with a gentle purgative of liquid-magnesia, in doses of one drachm to each ounce of the drinking-water, and if the bird appears weak, some Parrish's Chemical Food should be administered once or twice a day in doses of six or eight drops. The trouble to your birds' eyes may have arisen from cold; in any case keep them in a warm temperature, above 60 degs., and give them a greater variety of seed. To counteract the fattening tendency of the Canary-seed you should add some Rape-seed to the diet—the small summer Rape being the best—and do not fail to supply green food daily in small quantities, and freshly gathered. Do not give sugar or sweets of any kind, although a little fresh bread and milk now and then will be beneficial. Supply plenty of sharp grit-sand and some old mortar for the birds to peck at. Cuttle-fish-bone is good at all times for Canaries, tending to keep them in good health.

Birds for garden aviary (*E. Gunn*).—The foreign birds that would do well in your sheltered aviary are the Java Sparrow, the Zebra Finch, the Diamond Sparrow, the Turquoisine, the Budgerigar, and the Cockatiel. All being hardy, they would do better than if confined to a cage indoors, and some would breed freely if pairs were kept. Any or all of the species of our native hard-billed birds would suit you; but soft-billed warblers, being less hardy, and, in many cases, difficult to keep in confinement, would not prove so satisfactory. In the way of shrubs you cannot have anything more suitable than small Box and Fir-trees. If planted in tubs or large pots and exchanged or renewed as required, those not in use being put out in the open to recover from the spoliation of the birds, and to be refreshed by the rains, you would find them very suitable aviary trees. Creepers would not do so well, as the birds would be likely to nibble off the young growths. Your idea of putting about 3 square yards of turf upon the floor of the aviary is good, as it will both add to the rustic appearance of the interior and afford the inmates healthy occupation in pecking it over. It will be well to give the turf a slight watering occasionally, and to renew it upon its becoming much soiled.

Budgerigars ailing (*Nancy Lidington*).—You do not say how you treat your birds, or what you feed them upon. As you keep them in an aviary, with other kinds of birds, they probably are feeding upon unsuitable food. Millet and Canary-seed is their proper diet, and if they have access to food of a more heating and stimulating nature, such as Hemp-seed, they have probably become surfeited. Give them a cage to themselves, feed them chiefly upon Millet, adding a little Canary-seed, and give some liquid magnesia—a good teaspoonful to each bird in an ounce of drinking water. There is an awkward disease known as surfeit, which appears in an eruption about the head, causing the feathers to fall out. A slight anointing of the bare places with scalded lard is beneficial in this case. Maybe some of your birds have acquired the bad habit of feather-eating, and are destroying the plumage of their fellow-captives. The only cure for this is to remove the offender immediately upon being detected in the act of despoiling a companion of its feathers. Budgerigars are, however, very subject to loss of feathers at unreasonable times, and sometimes become very unsightly. Do not keep your birds in a high temperature; they are perfectly hardy, and would enjoy the best of health, and breed freely in an outdoor aviary.

Birds for garden aviary (*F. H. L.*).—All the birds you name will do well in your aviary, as also will Goldfinches, Siskins, Redpoles, Canaries, and Greenfinches among seed-eating birds. With regard to feeding, there is some little difficulty where seed eaters or hard-billed birds, and insectivorous or soft-billed birds, are kept in the same aviary. We have, however, used a paste recommended by Bechstein, the German naturalist, with great success in an aviary of mixed birds, made in the following manner: Take a small, well-baked, stale loaf or portion of bread and put it into fresh water, leaving it there till well soaked through, then squeeze it as dry as possible with the hand, and pour boiled milk over it, adding about two-thirds of well-sifted Barley-meal, working the whole into a crumbling paste. Those birds which live on seeds only, on a mixed diet, or on insects only, consume this paste with equal avidity, remaining in good health and plumage. To this is occasionally added a little Rape, Hemp, Poppy, and other seeds, for the benefit of the seed eaters, and a few meal-worms, ants'-eggs, and dried Elderberries for the other kinds. It need hardly be said that the above paste requires to be made fresh daily. Glazed flower-pot saucers make excellent food dishes and baths, and possess the advantage of being easily cleansed. You could keep twenty to thirty birds in your aviary.

FLOWER SHOWS AND SOCIETIES

The National Viola Society.—The first annual general meeting of the members was held on the 10th ult., at Winchester House, Old Broad-street, E.C., when there was a large attendance, Mr. W. Robinson, the president, occupying the chair. A very favourable report of the work carried out by the society during its first year, together with a balance-sheet showing that the society had been able to meet all expenses and carry forward a small balance, was adopted. The following officers were re-elected for the ensuing year: Mr. W. Robinson, president; Dr. Shackleton, chairman of committee; Mr. H. A. Needs, hon. treasurer; Mr. A. J. Rowberry, hon. secretary; while Mr. C. Jordan, of Regent's Park, and Mr. J. Moorman, of Victoria Park, were elected to fill two vacancies on the committee. It was decided, subject to arrangement with the Royal Botanic Society, to hold a show in the society's gardens, and also carry out another trial of Violas and conference during the coming summer, a sub-committee having been reappointed to undertake the work in connection with the latter. It was also decided to publish a report of the proceedings of the conference, together with particulars of the result of the trial of Violas made last year in the Botanic Gardens; and copies (price 6d. each) may shortly be obtained from Mr. A. J. Rowberry, of The Crescent, South Woodford.

54—**Glass bottles for fruit.**—I shall be much obliged if you will inform me where to obtain large-mouthed 3 lb. or 4 lb. glass bottles for preserving the smaller kinds of fruit whole—*e.g.*, Currants, Gooseberries or Plums?—W. I.

*** *Dan Rylands, Ltd., Barnsley.*

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Geum coccineum, brilliant scarlet, hardy, 4 for 1/3 .. 2 6
Marguerites, large white, yellow, blue, 6 for 1/3 .. 2 3
Passion-flowers, white or blue, 2 for 1/3 .. .. 5 6
Plumbago capensis, white, 9d.; blue, 1/3; 1 each, 1/9.
Pelargonium. Show, Regal, Spotted, 6 for 2/3 .. 4 0
Salvia patens, lovely blue, 4 for 1/3 .. .. 2 6
Tropæolum Ball of Fire, a grand creeper, 3 for 1/3 .. 3 9
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THE DISEASES OF CARNATIONS.

Nearly all our garden favourites are liable to be attacked by diseases or insect pests, and, as I may venture to write from my own experience, I find that the more highly the plants are cultivated so much the more are they liable to be attacked by disease. My own plants have always been singularly free from diseases of any kind, which, I am inclined to believe, is owing to the fact that I never use artificial manure amongst the plants grown in pots, and, as a rule, only in the form of bone-dust in the open garden when the ordinary farmyard-manure is not easily to be obtained. For Carnations out-of-doors in the open garden I recommend well-trenched and freely-drained ground, and the best manure is that from stables where peat-Moss-litter has been used; but it is well to have it trenched into the ground three months, or, better still, six months before planting out the Carnations. I am sure, if the plants are clean to begin with and are well cultivated afterwards, diseases and insect pests will not be troublesome. The disease most difficult to eradicate, consequently the one most dreaded by Carnation-growers, is that technically described as Helminthosporium echinulatum; it is usually described as

Rust.

In the early stages of its growth it is found as a fungoid development between the membranes of the leaves. As this growth increases, it speedily bursts through the thin membrane and the coffee-coloured spores are scattered, and in a dry air and high wind the fine powder is carried to a considerable distance; wherever this rests upon healthy leaves, it speedily forms pustules as before, and the disease, if not checked, would soon decimate any collection. Many different specifics have been recommended to destroy this fungoid growth, but the nature of the disease is such that none of them have any effect upon it until it is too late, for the sufficient reason that the fungus is protected by the membranes within the leaf itself. It is better, therefore, to cut off all diseased leaves before the pest bursts forth, for the spores are soon scattered. In some cases that I have seen, the only way has been to destroy the entire collection and start afresh, but this could have been avoided if it had been taken in time. When a collection of Carnations is clean it is always best to isolate additional plants that are added to it, and watch for the development of this disease. It is easily recognised by the appearance of blisters on the leaves, and the complete remedy is to cut off the affected leaves at once, and burn them before the blisters burst. Another, and much more common, though less dangerous disease, is Uredo dianthi or

"Spot."

There are few gardeners or amateurs but have some knowledge of this. I have known it so bad that in some collections the plants have been killed by it, but on tracing the growth of plants from the time of layering in July and August I have generally found that something in the culture had to do with it. The "grass," as it is termed, had been drawn up by overcrowding or overshading the plants in a greenhouse. The plants may also be attacked when they are grown in undrained or unsuitable soil. "Spot" is easily distinguished from the "rust" by the non-appearance of any dark-coloured powder. Decay spots spread all over the leaves, and, as previously mentioned, sometimes to such an extent that they are quite destroyed by it. Usually they do not suffer nearly to this extent, and even if no attempt is made to check the disease the plants will grow out of it, and by May no trace of it remains. Here, again, the best remedy is to cut off all diseased portions, and any plants in flower-pots should be removed into a dry, airy greenhouse. Stir the soil up a little with a pointed stick, and do not water any of the plants until they really need it. If they are out-of-doors, planted out in the open garden, and become much infested with the spot, it is not easy to deal with them; but, as I have hinted previously, the ground ought to be well drained, and the hoe should be kept at work amongst the plants to keep the surface dry and open. This is all that can be done to prevent the disease from spreading. But, of course, it is much better if the disease can be kept away altogether; and I believe even this can be done if the culture is right. Dry sulphur on the leaves stops its further progress. Another disease has appeared amongst our Carnations, probably introduced from America, as it is very prevalent in the United States, where it is known as

Bacteriosis.

Its correct name is Bacterium dianthi. The leaves have the appearance of being blistered or burned. The diseased portions should be cut off and burned, and the leaves sprayed with water containing a small quantity of ammoniacal copper carbonate. Keep the plants dry, and if under glass the house should be freely ventilated; but it also appears upon plants put out in the open borders. Spraying with the same solution should be tried, but I insist strongly on cutting off all diseased portions first. There is another disease prevalent in some collections, and differing entirely in its character from any I have named. It is usually termed

Gout,

as the stems of the plants attacked by it swell considerably at their bases. It is caused by numbers of minute nematoid worms, distinguished by scientists under the name of Tylenchus. They attack the collar of the plant, get inside the stems and eat upwards into the leaves. It is difficult, of course, to reach the cause of this disease, and I do not think it possible to cure a plant badly attacked by this pest. The best way is to destroy the plants and begin with fresh ones. It does not usually do much mischief, and is the more readily stamped out by the destruction of the plants. The

Carnation-maggot

(Hyelemia nigrescens) is another troublesome pest to the Carnation-grower, and, unless promptly dealt with, may also become very destructive. When plants are known to be attacked by it, care must be taken not to allow one of them to escape. The maggot is the larvæ of a small black fly, not unlike the common house-fly. It deposits its eggs on the Carnation-leaf, and the maggot works down into the centre of the plant, which it either destroys altogether or renders worthless; it will eventually eat out the centre of the stem, and should be destroyed at all hazards by picking it out with a needle. I have sometimes sent a lad to watch for the insects and to kill them before they had time to deposit their eggs. While writing about diseases and insect pests one cannot omit the dreaded wireworms. Many persons do not know whence they come or whither they go. They are too well known to gardeners, and are the larvæ of small beetles belonging to the family Elateridæ; they are known under the popular names of the skipjack, snap-beetle, and click-beetle. The more hurtful species are Agriotes lineatus, A. obscurus, and A. sputator. They remain in the ground for a period of three to five years, and a full-grown specimen is about an inch in length, of a clean brownish-yellow, and feels like a piece of wire between the fingers. I really know no cure. They work underground, and eat into the stem of the Carnation immediately below the surface, and the first notice of anything being wrong is the plant shrivelling up, and on taking hold of it it can be gently pulled out quite dead, and by that time the pest is, perhaps, off to another plant. Examine potting-soil thoroughly before using it, and if ground is infested with wireworm, dig into it a good dressing of gas-lime four to six months before planting out the Carnations. Slices of Carrots buried in the soil attract them, and numbers can be destroyed when they are examined. Avoid the use of fresh turf in the garden, unless it has been thoroughly examined before digging it in.

The ordinary green-fly is very troublesome, and can be destroyed when the plants are in small pots by dipping them in a solution of Tobacco-water, or of soft-soap dissolved in hot water, 2 oz. to the gallon; but when it can be conveniently done, fumigating with Tobacco-smoke is the best remedy.

In hot seasons thrips attack the flowers when in bud and quite spoil them. Amateurs and others sometimes wonder what is the matter with their flowers, that they open badly, and the petals are quite discoloured. The reason will be found in the fact that thrips have got into the calyx before the flower has even shown itself, and they quite spoil the blooms. If the plants are grown in pots, and the blooms required for exhibition or any special purpose, the best plan is to take them into the house and fumigate with Tobacco-smoke; this may require to be done three times if the flowers have been badly attacked. Daily syringing out-of-doors plants in hot weather up to the time the flowers open is a good way to keep off both this pest and green-fly.

J. Douglas.

Flowers for sunless hall (*A. L. O. F.*).—Whatever plants you grow in your hall, they are certain to draw towards the window. Try the India-rubber (Ficus elastica) and Parlour or Milk Palm (Aspidistra lurida), and keep them turned once a week or so. The African Asparagus would also do well.

TUFTED PANSIES AND THEIR CULTURE.

Position.

The Pansy is not in the least fastidious, and will thrive even in an open, sunny position. But the best plants and flowers are obtained where the beds and borders are shielded from the noon-day sun. The plants revel in a nice light position, and where the early morning sun and that of the late afternoon can reach them. It will thus be seen that the best results may be attained where a hedge or screen, either natural or artificial, can shield the plants when the sun is in the south. I have secured excellent results from beds in an eastern position, especially so during a very hot summer, the colours being rich and the flowers robust. A northern position, too, has given equally good results, especially so when it has been possible to obtain, as it were, filtered sunshine through a hedge or fence.

Spring planting

should be carried out during March, preferably about the third week. By this period severe frosts are generally past and the ground is in good condition. Previous to planting the surface of the soil should be raked over and left in an even condition. For ordinary garden decoration the space between each plant, and also that between the rows, need not be so wide as for those intended for exhibition. Nine inches between each plant and a foot between the rows will answer the purpose very well. Under proper treatment the plants should easily cover the intervening space before the season is over, and they should be literally covered with bloom. For exhibition it is important that plenty of space be allowed for each plant to develop its growth without becoming unduly crowded. A good rule to observe is to allow the space of a foot between each plant, and 15 inches between the rows. In this way the plants are easier to overlook, and liberal top-dressings may be given during the summer. The rows should be so arranged that the plants of one row alternate in position with those in the next row—thus : * * * * * By these means the distribution of the plants over the beds in equal proportion is easily effected. Mass the plants well. Small beds of one colour, or at most two, and only then to produce a pleasing contrast, are more effective than dotting a plant here and there. As an edging to a mixed border they are very beautiful, and if a double row of one colour be left to form a margin in this way the result is a very happy one. The Pansy is more used now for associating with other plants, those of a more tufted habit forming a compact carpet to other plants of a spare habit of growth. Then there are others with a trailing and taller form of growth which are highly prized for planting between beds of Fuchsias, Carnations, and plants of a similar character. In this way many Pansies which were at one time accorded only a small share of attention because of their somewhat coarse growths are now appreciated for the purpose just described.

It is well to have at the time of planting a good heap of nice light and gritty compost, and made up of equal parts of loam, leaf-mould, and rotten manure, to which may be added freely coarse sand or road-grit, the whole of these ingredients being well mixed before using. A good hole should be made with the trowel, and a layer of the compost just described placed over the bottom. The roots of the plants should be evenly and carefully spread over this, and these covered with the ordinary garden soil. I should have stated that previous to planting, the head of the plant should be dipped in a vessel containing about 2 oz. of soft-soap to a gallon of water, as this is a very effectual way of disposing of any insect pests, which at this season are sometimes troublesome. If the names of the different varieties are desired to be retained, each plant should be labelled as it is planted.

As a screen against cutting winds, 5-inch pots placed in an inverted position over the plants form an effectual protection and also afford shelter from the sun. Should there be an absence of the easterly wind at night, the flower-pots may be removed, when the plants will appreciate the moister atmosphere. After the third or fourth day, if no rain has fallen, the plants should have a thorough watering, using a fine-rosed can for the purpose. This will answer for some time to come, unless the weather should be exceptionally dry.

After-treatment.

Pansies need an occasional inspection in case any troublesome pest, such as green-fly, red-spider, and others which have a special liking for this plant may have put in an appearance. To check these evils resort must be had to the use of the soft-soap solution already referred to. This may be squeezed into the tender growths by the aid of a sponge, and generally soon stops the evil. This should be done when the sun is not shining on the beds.

Top-dressing the beds.

By early June the plants will appreciate a top-dressing or mulching of old manure, or, better still, a mixture of leaf-mould and manure, each passed through a coarse sieve. This material should not be carelessly placed around the plants, but should be worked in around the base of the plants with the hands. For exhibition purposes I always mix some concentrated manure with the top-dressing—say, a 6-inch pot-ful to a bushel of soil, and have obtained blooms of exceptional size and beauty by its careful use. In a short time the benefit the plants receive through the mulching is very noticeable. Another advantage in mulching is that water is not so often needed. D. B. Crane.

HOUSE AND WINDOW GARDENING.

THE LIGURIAN HAREBELL (CAMPANULA ISOPHYLLA).

This is a charming little Bell-flower for a window. It is very easily grown from cuttings of the

The Ligurian Harebell (Campanula isophylla) as a window plant.

young shoots taken now, and these will make plants for flowering this year. No Campanula is so vigorous as this, and though a little tender in some places, for it comes from southern Italy, will live out in most counties in sunny positions and gritty soil. The flowers of the species are blue and smother the slender growths, while those of the variety alba are pure white and produced quite as freely. It is also a very useful plant for window-boxes.

Cypripedium Lathamianum.—The flowers of this hybrid are large and distinct, and as it blooms freely in an intermediate-house it may be recommended for anyone who has not the convenience to grow the stove kinds. The dorsal sepal is white, with a line of deep purple midway, and a blotch of green at the base. The petals are yellowish below, brown above, and the labellum is pale brownish-yellow. It was raised in the Botanic Gardens, Birmingham, and is the result of fertilising C. Spicerianum with the pollen of C. villosum. It first flowered in 1888, and has since been raised in several other collections.

Musk to carpet Rose-bed—Is it injurious to Rose-trees to have Musk as a carpet on the bed they are in—both standard and bushes? If not, what is the proper method to obtain the desired effect? And would the Musk come again year after year without cultivation? Also if Forget-me-nots were mixed with the Musk, what is the name of the best kind for this purpose? The bed in question is of rich loam, with subsoil of clay.—T. St. J. M.

*** There is no harm in the Musk. In fact, we strongly advocate some such carpet covering for standard Roses. Sow some Musk in heat and transplant them during summer. Or, better still, get some dormant roots and plant at once. They will come year after year and you can protect them, and manure the Roses at the same time by giving a mulching of stable-dung each autumn. Forget-me-nots, Pansies, and Polyanthus look well, and give some colour before the Roses come on. These can be raised each autumn and planted early in the year; the necessary disturbance will not injure the Musk, which will soon get a hold. Myosotis dissitiflora is a good variety.

FERNS.

HARDY FERNS.

A collection of hardy Ferns forms an important addition to any garden, and if arranged as far as possible in a natural manner, they may be made to assume almost as beautiful an appearance as they do in a wild state. It is difficult to lay down any definite rules for the construction of a fernery, so much depending upon the position which it is to occupy and the space at command. In fixing on the site, the first thing to be aimed at should be a slightly-shaded, secluded nook, not one that can be seen from the windows of the dwelling-house, nor yet from the flower garden, but a part that is unexpectedly come upon when walking around the grounds (and this may be done in a very limited space). The situation for such a fernery should be one that is sheltered from boisterous winds. Moisture, too, is essential to the well-being of hardy Ferns, but this cannot always be given in sufficient quantity to carry them safely through hot summers, so that provision for watering when required is advisable. In forming a fernery, some object to tree-roots because they often breed fungi; but I have never found any inconvenience in that way from their use. Anything like straight lines must be avoided. If the space to be occupied be long rather than broad, it should be broken up here and there so as to form miniature dells, recesses, and projections; but all should have as rustic an appearance as possible. The plants in all cases should be allowed sufficient space in which to develop themselves. Where outdoor Ferns have hitherto failed to do well, they have very often been cramped for space. What is wanted is breadth and length of ground, height being of secondary importance. If the fernery be so arranged that it can be traversed by a narrow pathway, from which the plants could be examined, all the better. The stones and roots employed should be placed in as natural a manner as possible. Anyone who has searched for Ferns in their native haunts cannot fail to have observed that they luxuriate in a light sandy soil, and this must form the main bulk of the soil of the fernery. I have, however, many times used Cocoa-nut-fibre mixed with turfy loam, and it has always appeared to answer admirably. For very delicate sorts of hardy Ferns a compost may be formed of peat, leaf-mould, and loam, with a sprinkling of silver-sand to keep all open and porous; but the stronger sorts will succeed best in loam without the addition of peat. When I have used Cocoa-nut-fibre I have found that it retains a considerable amount of moisture without becoming sodden. Fern-roots of hardy kinds being generally of a wiry nature, they will often grow in almost any soil that is of ordinary texture, but it ought not be heavy. Ferns generally dislike manure, whether it be solid or liquid. In arranging the plants I would not separate the evergreen from the deciduous kinds, but so dispose of them that when the foliage of the latter dies down in winter there would still remain enough evergreen kinds to interest the cultivator. I would, therefore, plant plenty of sorts that would retain their verdure throughout the winter—such, for instance, as the Blechnums, Scolopendriums, Polystichums, and Polypodiums. In planting, an error of too common an occurrence must be avoided—viz., that of planting too deeply. Generally speaking, the crowns of the plants

must be kept well above the soil, but they should be made firm, and the stronger-growing sorts should be planted first. Dwarf-growing varieties, with fine fronds, should have the most sheltered nooks assigned to them. If a very damp spot exists in the fernery a place must be afforded for the Royal Fern (Osmunda regalis). A list of the many hardy Ferns is not given here, inasmuch as most cultivators have their own particular favourites. I may, however, add that a small hardy fernery may be constructed in any shady corner, even in London, where flowering plants will not succeed, and if arranged with good taste and judgment, it will always be a source of enjoyment to the cultivator.

H. B.

2938.—**Ferns unsatisfactory.**—May I suggest that "A Young Beginner's" failure is due to the method of heating his fernery?

A vase of flowers of Spiræa Lindleyana. From a photograph.

ome few years ago I experienced a similar ailure, accompanied with much discoloration of ne fronds, which after many experiments I was ble to trace to the down-draught from my ove. However, now that I have remedied is by preventing the entrance of the sulphurous mes, combined with care in watering, I have e pleasure of possessing a very satisfactory rnery, in which I can not only cultivate many rieties of Ferns, but also hurry forward the owth of Begonias, Gloxinias, etc.—C. E. C.

Cytisus stenopetalus.—Scarcely any eenhouse plant is better known or more valued an Cytisus racemosus — frequently called enista. No better recommendation of this rly related species, therefore, need be given an by saying that whilst it closely resembles racemosus, it is in some respects a superior plant. It has the same stamp of foliage, but the leaves are rather larger and of a glaucous colour. The flowers, too, are finer individually and are borne in larger racemes; like those of the better known species, they are bright yellow. The name—Cytisus stenopetalus—does not occur in the dictionaries, and is perhaps of trade origin.

SPIRÆA LINDLEYANA.

This, the noblest of all the shrubby Spiræas, a native of the Himalayas, sometimes, under favourable circumstances, reaches a height of 15 feet. A large specimen in a well-chosen situation, backed by evergreens, at some little distance is, when producing its spreading panicles of ivory-white flowers, an exceedingly handsome object. It possesses an additional charm in its graceful pinnate leaves, which lend to the shrub, even when not in bloom, a highly decorative effect. The North American S. ariæfolia when in a flourishing condition attains a height of 12 feet, and is, perhaps, even more beautiful at its flowering period than S. Lindleyana. It is usually a freer bloomer than is the subject of the accompanying illustration, and its pendent blossoms, whether in their unopened state, when they appear like clusters of pearls, or after their plume-like inflorescence is expanded to the full, are very lovely. In the matter of foliage, however, S. ariæfolia is far inferior to its Himalayan sister from an ornamental point of view. A large example of S. flagelliformis, or, as it is sometimes styled, S. canescens var. flagellata, 7 feet high by as much in diameter, is a striking sight when in flower, its long curved shoots being studded throughout their length with rosettes of white, Hawthorn-like blossoms. Another pretty shrubby Spiræa is S. prunifolia flore-pleno, which in the spring bears clusters of double white flowers. This Spiræa with good culture will reach a height of over 6 feet. There are in this section many other valuable Spiræas beside the four alluded to in this note, but those already mentioned form a good selection.

It is rarely that full justice is done to these beautiful shrubs. Unfortunately, perhaps, for themselves they manage to exist under the most adverse circumstances. One often sees them crowded into a shrubbery of evergreens, jostled by Rhododendrons and Laurels, whose roots meanwhile impoverish the soil to such an extent as to render it a matter of wonder that the Spiræas do not relinquish their struggle for life. For these to attain their finest dimensions and to exhibit to the full the beauty and symmetry of which they are capable, they should be given a position which shall not be encroached upon by stronger, or equally strong-growing plants or trees and should be afforded a sheltered site in the proximity of water. If the soil be deep and rich they will soon assume large proportions and will amply repay any trouble expended upon their environment. Indiscriminate pruning, which is too often indulged in, should be avoided. Many specimens which would otherwise reveal themselves in their true form are prevented from so doing by being cut hard back yearly. All that is necessary is to cut out the weakly shoots and to shorten back old flowering wood to a strong bud. S.

FRUIT.

STARTING BANANA-PLANTS.

(In reply to "Deodara.")

Now is the best time to start growing the Banana; and "Deodara" mentions the fact that in a recent article in Gardening no particulars were given as to where plants could be secured. But we never recommend individual nurserymen; it would not be fair. Our advice is: plant good specimens now—those which have been potted up some time or have ample roots, as if the latter are deficient Bananas make slow progress. Heat and atmospheric moisture are essential to success, and give a good soil, not excess of manures, at the start. No matter how the plants are grown, much better results are secured when liberal heat is given, also bottom-heat; for instance, when in pots or tubs, if possible these should be stood over a grating. On the other hand, bottom-heat is not a necessity. If it cannot be given the plants are much longer before they fruit. For instance, a strong sucker planted now with ample warmth will fruit next spring; and, again, we have seen plants take three years to fruit when grown in a conservatory. In planting we find a restricted root-space best with ample drainage—hence the importance of pot or tub-culture. On the other hand, such plants need much food in the way of top-dressings and liquid-manure when of large size. We find good turfy loam, with a few lumps of charcoal and a liberal portion of bone-meal, the best compost, and rely upon liquid food for future growth—not rank manures at the start. Plant firmly if in beds, and in pots or baskets allow ample space for future surface-dressings. It is essential to encourage the surface-roots to the top. Avoid excess of foods or moisture at the root at the start, and though the plant likes atmospheric moisture do not go to extremes, as if syringed overhead too much the plants decay in the centre, but give moisture in all parts of house. B. Cavendishi is the best variety grown, and dwarf plants require a brisk stove temperature from now to November, with a little less in winter months.

Cyrtanthus lutescens.—This is an interesting amaryllidaceous plant. The pale yellow blossoms number about four or five in each scape, somewhat tubular in outline, and each nearly 2 inches long. The scape is about 12 inches high from the pot, and it is altogether a pretty as well as a distinct species. It is of comparatively easy culture, requiring conditions in this respect similar to the Hæmanthus. A native of the Cape of Good Hope.

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VIOLET CULTURE.

I am most anxious to know something about the culture of Violets. Could you tell me: 1, If I got them now would they flower in the spring? 2, Should I grow them in a cold frame, greenhouse, or outside? 3, What are the best kinds for me to get? (I want them very sweet-scented.) 4, What soil and position in general do they like best? 5, Would you kindly give me some hints as to their general culture, and tell me if they flower this spring can I expect them to do so next winter also?—E. M. L., *Tuam, Ireland.*

*** Unless "E. M. L." can obtain established plants in pots, when these would give flowers if kept in a light position in the greenhouse, one must wait until the spring before commencing Violet culture. For winter flowering, the best results are to be obtained from plants grown in frames; these, however, must be grown in the open ground during the summer. For choice, the ground on which the runners are to be planted should be well worked up and enriched during the late autumn, but it is by no means too late to do this now. At the end of April or commencement of May the little plants, runners for preference, or divisions of the old plants, should be planted in rows 12 inches apart, the individual plants not being less than 10 inches from one another, the bed having previously received a top-dressing of well-rotted hot-bed or Mushroom-bed manure and leaf-mould. If planted during a spell of dry weather, a copious watering should be given to settle the ground around the runners, which watering should be repeated at intervals if the plants show signs of failing owing to excessive drought. Slight shade afforded by Larch boughs or other light foliage will be found effective as a prevention of flagging after planting, should the sun be very hot. A mulch of well-rotted manure is beneficial during the month of June, and applications of liquid-manure through summer and autumn will add greatly to the strength of the plants, which, if all runners formed are cut off as soon as they appear, will be fine sturdy clumps, well furnished with flower-buds when they are lifted for transference to the frame at the end of September. About the commencement of that month it is well to go over the plants and, with a sharp spade, cut off the outlying roots, this inducing the formation of fresh root-fibres, which are ready to take hold of the fresh soil in the frame at once.

The base of the frame may be fitted with any material affording good drainage, such as garden refuse, hedge clippings, or long manure, the upper layer of soil consisting of fibrous loam and leaf-mould, with which a good proportion of old hot-bed manure has been incorporated. Lift the plants carefully, with a good ball of soil, planting them about a foot apart each way, and taking care that they are not more than 8 inches from the glass. After planting, expose to the air for three weeks, unless excessively rainy weather or frost should surpervene. When the lights are permanently in position air should be given freely when practicable, a moist, close atmosphere being inducive to damping. At the time of planting in the frame a few plants may be lifted and placed in pots, when they will flower in the greenhouse.

For growing in the open air the same routine as has been indicated should be observed, with the exception that the plants, instead of being lifted in September, will remain undisturbed. Success can never be attained if the old plants are left undivided year after year.

As to soil, Violets do not thrive in one of a clayey nature nor in a light, shady medium, but succeed best in a deep, cool loam. For position, a southern exposure in the northern districts, and a slight slope to the north-west in the southern counties, is the most satisfactory.

The following are good varieties: Marie Louise and New York, rich violet, which are practically synonymous; De Parme, dark lavender; Madame Millet, heliotrope; and Comte de Brazza, white. All the foregoing are doubles. Of the singles, the new California, of large size, violet in colour, and very fragrant, does well in frames with many growers, while Princess of Wales and Wellsiana, of the same colour, bear large, sweetly-scented flowers. Admiral Avellan (red purple) is a new introduction of some merit, while the best single white is still the White Czar.

GARDEN PESTS.

THE GOLD-TAILED MOTH (PORTHESIA AURIFLUA).

This moth is, fortunately, not so common as many others, but occasionally it is very abundant, and its caterpillars appear in very great numbers, when they are most mischievous. They feed on the leaves of various trees, their favourites being most fruit-trees, Elms, Oaks, White Thorns, and Black Thorns. They were so very abundant, particularly near London, in 1782 that, according to Curtis, the greatest alarm was occasioned not only for the trees, but also for the corn and Grass crops. One shilling a bushel was paid for the webs of these caterpillars,

The gold-tailed moth.

which were burnt in the presence of the parochial authorities, and prayers were offered up in some churches that the country might be delivered from this plague. These pests were in such numbers that 81 bushels were collected in one day in the neighbourhood of Clapham, which, it is hardly necessary to say, was a very different kind of place to what it is now. Though no such plague of these insects has been experienced in late years, much injury is done at times by this insect. Unfortunately, there is no royal road to the extermination of the pest. The best way is to wage war against it on every possible occasion. The moth, being of considerable size and, with the exception of their tails, pure white, are very easily seen, and as they are very sluggish during the day may be shaken from the trees. The caterpillars may be found at the end of the branches sheltered in a web spun round a few

Caterpillar of the gold-tailed moth.

leaves. These bundles of leaves should always be cut off and burnt, particularly any that do not fall with the rest of the leaves in the autumn, as they often contain caterpillars which become torpid and pass the winter in these nests. The caterpillars are unfortunately so hairy that few birds will eat them. They should always be very carefully handled, as their hairs come off very easily and stick into the skin, sometimes causing a considerable amount of irritation. They, however, suffer much from the attacks of various parasitic flies, which assist very much in keeping the numbers of this insect within bounds. The moths generally make their appearance about the end of June, and the females soon afterwards lay their eggs. This is an operation which the female seems to be very careful about. She generally chooses the underside of a leaf for this purpose; there she deposits her eggs in a heap, some two or three hundred in number, and of a yellowish colour, and covers them carefully with the yellow hairs from the end of her body. These she is said to pull out with her ovipositor (the organ at the end of the body through which she lays her eggs). The caterpillars are generally hatched in August. At first they only feed on the softer parts of the leaves, which they partly curl up by spinning threads across them from side to side. They remain under this shelter until they have reduced the leaf to a skeleton; they then remove to another as they increase in size. They fasten several leaves together and cover them with a thick web. They attach this nest very securely to the branch, so that when the leaves die they shall not fall. The inmates now obtain their food from leaves outside the nest, only returning to it for shelter. They leave off feeding in September or October, and soon become torpid, and then seem to be able to withstand any amount of cold. The same influences which cause the buds to open in the spring seem to reanimate the caterpillars, which at once spread themselves over the trees, and feed on the opening buds in June. They roll up a few leaves and become chrysalides within them; often several chrysalides may be found together. The moths, as before stated, are pure white in colour, with the exception of a tuft at the end of the body which is yellow. The wings measure about an inch from tip to tip, the forebody and body are covered with long hairs. The caterpillars when full grown are about 1¼ inches in length, and are of a brownish-black colour. They are covered with tufts of grey hairs. On the back of each joint, with the exception of the first, are two white spots which form two rows down the back of the caterpillar; between these two rows is a double red line. On each side of every joint is a reddish-brown raised spot, each being joined to its neighbour on the next joint by a red line. On the back of the fourth and fifth joints there is a fleshy hump from these, as well as from the raised spots on the sides, and from the back of the middle of each joint grows a tuft of long hairs. The first, second, third, and the sixth, seventh, eighth, ninth, and last joints each bear a pair of legs. G. S. S.

TREES AND SHRUBS.

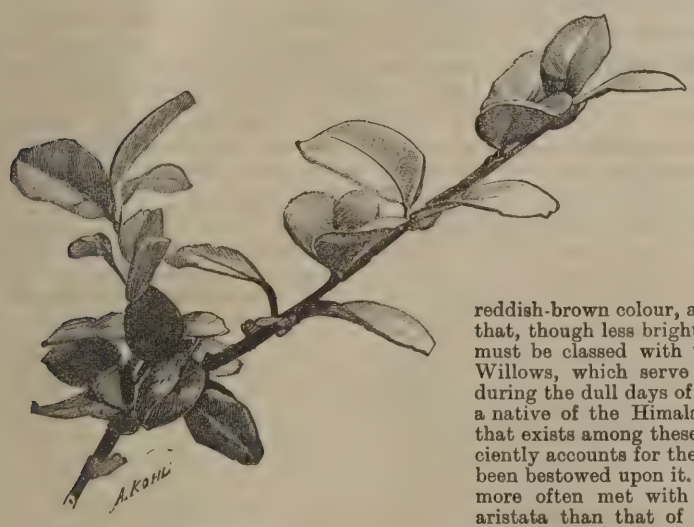
VARIETIES OF THE BOX.

Buxus sempervirens.

The varieties of the common Box have now become so numerous in gardens and nurseries that it may be, perhaps, desirable to mention a few of those that are most useful for the garden, and especially the winter garden. It must often be a puzzle to those who are planting a new garden to select the best sorts from the long list given in most nursery catalogues. Some of the sorts are not particularly distinct and beautiful, while others are so much alike that one sort will answer the purpose of two of them. The common kind, which we call the type, is, next to the Holly, our most beautiful evergreen, especially when seen wild, as at Box Hill, near Dorking, and other chalky hills in England, often mixed with the Juniper and the Yew. It is, and perhaps always will be, indispensable in a garden, because there are few evergreen shrubs that succeed so well under the shade of trees and give us such a bright mass of greenery during winter. It is, therefore, like the Holly, the Laurel, and the Mahonia—the stock plant that a garden designer always relies upon, especially in districts where the soil is of a chalky nature, it being specially suited to such soils and always to be depended upon.

There are about a score of named kinds of Box enumerated in the various catalogues, English and Continental, but half-a-dozen of these would suffice for anyone who does not aim at forming a collection. Of the Tree Box (arborescens) there are several kinds with variegated leaves. Aurea marginata has leaves margined with yellow, and in semi-shade is a handsome evergreen if seen in a mass with some tree or shrub near of a distinct colour to serve as a foil. Argentea variegata differs from the last in having the variegation whitish or silvery, and is also an effective shrub. Handsworthiensis, which originated in the Handsworth Nurseries, is a particularly fine variety, with broad foliage

and dense and massive habit of growth, and the form of it called aurea marginata is finer even than the form of the same name mentioned first. Glauca is distinct in having the undersides of the leaves conspicuously whitish, and pyramidalis has a decided tendency to assume a conical outline in its growth. Then we come to the varieties which have much narrower leaves than



Common Box.

the type, and these are particularly useful for formal gardening as an edging to beds, masses of choice evergreens, or as dwarf hedges as a change from Yew, which is, perhaps, becoming to be a too common feature in formal gardening, to the exclusion of the many other suitable evergreens. The best of these narrow-leaved forms are those named myrtifolia, rosmarinifolia, and thymifolia, names which are supposed to be descriptive of the foliage of the sorts. They are all dwarf-growing kinds, dense in growth, and probably are forms of the garden edging Box, B. suffruticosa. These small Boxes are suitable either for lines or in masses as groundwork for other plants or shrubs. They look absurd if dotted about singly or on the margins of shrubberies, as one too often sees them.

One of the finest of all the dwarf Boxes is the Japanese B. japonica, which is regarded as a distinct species. The golden variety of it, B. japonica aurea, is the most recent addition to the list of dwarf Boxes, and decidedly one of the best, as it is a dense and strong grower, thoroughly hardy, of a distinct golden hue, and is capable of producing a beautiful effect in winter if tastefully planted in masses as a ground or carpet to something else. It is finest always in autumn and winter, for if fully exposed it is liable to acquire a sickly appearance under a hot sun. It is, therefore, always best to plant it as an undergrowth to some light growing shrub. There is also a variety of B. japonica named microphylla, with much smaller leaves than the type, but this form is not readily obtainable. The Minorca Box (B. balearica) is what may be termed a neglected shrub, seeing it is one of the handsomest evergreens we have, much finer than our common Box in every way, growing to a larger size and having bolder foliage. The leaves are larger and of a paler green, and grown on the chalk in full sun it takes on a bronzy tint, which is different from that of most other evergreens. It is, perhaps, not quite so hardy in a severe winter, but it cannot be termed tender. In some old gardens in the south I have seen it tree size, and being so distinct it at once attracts attention. In the midlands and the north it is advisable to plant it on sloping ground where the soil is warmer and well drained. The Chinese Box (B. longifolia or chinensis) is not such a satisfactory evergreen, as it is really tender in cold districts. It is dwarfer and smaller in leaf than the common Box, and therefore is not particularly valuable.

The Box is purely a fine-foliaged shrub, most useful when intelligently used in the garden, but not nearly so much in demand now as formerly, when it was the fashion to clip the Box into animal forms and other monstrosities. As there is now a decided tendency, and a most commendable fashion, of planting masses of dwarf evergreen shrubs as a groundwork for the finer of the herbaceous perennials in formal beds on terraces in place of "bedding" plants, the various forms of the Box are likely to be put to a more extended use. They furnish the beds in winter with the necessary greenery, relieving the bareness of the ground after the perennials are cut down in autumn. W.

Berberis virescens. — This Barberry is during the winter months the most attractive of all the deciduous members of the genus, as the bark of the young shoots is of a warm reddish-brown colour, and so noticeable is this that, though less bright than the Dogwoods, it must be classed with them and some of the Willows, which serve to enliven our gardens during the dull days of winter. B. virescens is a native of the Himalayas, and the confusion that exists among these Asiatic Barberries sufficiently accounts for the various names that have been bestowed upon it. For instance, it is far more often met with under the name of B. aristata than that of B. virescens, while it is sometimes known as B. Lycium and B. asiatica. From a flowering or fruiting point of view, B. virescens does not possess any special characteristics, and it is only in the winter, when devoid of foliage, that the warm-coloured bark is particularly noticeable.—T.

WHITE-FLOWERED AZALEAS.

Azaleas may be divided into two classes, the deciduous hardy kinds and the evergreen or greenhouse varieties, to which we here confine our remarks. They belong to the Heathwort family, and are very closely allied to Rhododendrons. Thanks to the persistent efforts of the florist and hybridiser, Azaleas are now to be found of almost every shade of colour, whilst they are extremely free-flowering, and their blooms yield a delicate perfume. These qualities combined have led to their becoming universally popular, and they are now almost indispensable, not only to those who have accommodation for them as window plants, but also for those who grow them into specimens for the embellishment of their greenhouses and conservatories.

Azaleas yield very easily to the influence of artificial heat, so that with a little gentle forcing plants may be had in flower from Christmas to midsummer, if a sufficient stock can be kept to maintain the succession. Moreover, the plants that have been forced for a year or two will naturally produce their blooms earlier, and, therefore, these particular plants should be kept for the earliest bloomers, as very little forcing will be necessary. Those plants which have been forced should be kept in heat to finish their growth, and when this is completed, removed to the greenhouse, and afterwards to the open air, in order to thoroughly ripen their wood and set their buds for the next season, but those plants which have not been forced I prefer to grow in the open air, and if the plants are not too large and unwieldy planted out in the open. I am quite aware many disagree with this system, but I have never known anyone who has given it a fair trial have anything to say against it. The advantages to be obtained by adopting this system of planting out Azaleas are rich deep green foliage, entirely free from thrips, and with such an abundance of bloom as cannot be imagined by those who have only seen them under pot culture. It is true, however, that treated in this manner they do not increase in size so rapidly as those specimens grown under glass, because the growths made in a season are much shorter, but this is really an advantage to those having but limited space, at the same time the plants become very dense and compact. The only drawback I have found in practising this system was that as the plants rooted so freely when lifted in the autumn, they required, after a season or two, a much larger pot than was compatible with the size of the plant. To obviate this I had the sides of the balls of earth scored and slightly reduced every year before planting them into their summer quarters, a plan which I found to answer admirably. These Azaleas are not planted indiscriminately in the borders, but in properly prepared beds, and as the subsoil was sand no further drainage was necessary.

The compost consisted of peat, loam, leaf-mould, and sand, in the proportion of about three parts of the first and one each of the other ingredients. The plants were never allowed to become dry at the roots, and during dry weather the water was applied by means of a hose to the foliage and roots every evening, and I have never seen cleaner or more handsome specimens, and none which could approach them for freedom of flowering. All growers have not the convenience, however, to carry out the planting-out system, but I strongly advocate growing the general collection of plants in the open air. In the first place, it produces foliage of such depth of colour and cleanliness as is impossible to obtain under glass, even with great expenditure of labour and expense. The plants become well and regularly set with flower-buds, and not one-sided and gappy, as is often the case with indoor grown specimens. The plants should be set outdoors in an open space, so that the sun may shine upon them on all sides at some time in the day, and so arranged that each plant will shade its neighbour's pot. In order to prevent the pots becoming sufficiently heated to burn the roots, the outside row of pots should be surrounded by a low hedge or fence, which should not be higher than the pots, otherwise the bottom part of the plants may be deficient of bloom. In the autumn the plants should be

Azalea Deutsche Perle.

housed before the frosts begin, and they should be kept cool and quiet, but not allowed to suffer from drought. An oversupply of moisture, however, is equally dangerous.

Azaleas are specially valuable for cut flowers, as they bear cutting with impunity. Azaleas are easily propagated from cuttings or by grafting. The latter process is the most usual, because many of the finer kinds are somewhat bad growers upon their own roots, and derive much benefit by being grafted upon a strong-growing stock.

The following comprise some of the very best white-flowered Azaleas in cultivation:—Deutsche Perle, which is illustrated on page 19, is a very early and free-blooming variety. The blooms in the bud state are very charming, resembling miniature Rose-buds, whilst they in all stages are of the purest white; A. Borsig, a variety of good form, very double, and pure white; Bernard Andre alba is a compact-growing variety, and has a fine double flower; Imbricata is the most perfect double flower I know; it is, however, sometimes streaked with rose; Louis Von Baden, one of the best single whites; Madeline, flowers very large, smooth, and of great substance, pure white and semi-double; Madame Charles Van Eckhaute, very handsome, large, pure white, the flowers having crisped edges; Mlle. Marie Lefebvre, an excellent form; Princess Louise, an exquisite double form of great substance; Pucelle de Gand, a very fine pure single white variety; Raphael, a fine, sweet-scented double white form; Reine de Portugal, a double form of great substance; Rosa Bonheur, a superb large single white-flowered kind; Souvenir de François Vervaene, a very large free-flowering form. W.

Nuttalia cerasiformis.—Although the flowers of this hardy shrub have no bright colour to recommend them, they are at the time of year they appear very welcome. During the latter part of February and early March a large spreading bush in the arboretum at Kew has been covered with the pendulous, Currant-like racemes of dull white flowers, and has been quite a pretty picture. Its charm is heightened by the pleasant fragrance of the blossoms, which appear some time in advance of the foliage. This shrub is far from being common in gardens, but it is obtainable from some of the leading dealers in trees and shrubs, who sometimes grow it under the name of Prunus californica. It is a native of the North-Western United States.

THE KITCHEN GARDEN.

GOURDS.

Of late years Gourds have received more attention. Amateur gardeners will find them useful in addition to being ornamental. Anyone who can grow the Vegetable Marrow can grow the Gourd, and their diversity of shapes and bright colours make them interesting objects. They grow readily. The Gourd is half-hardy, and many amateurs know them as Pumpkins, but the latter are large, and some of the true Gourds very small, but the culture is similar. All the varieties do best planted out at the end of May or in early June. Many amateurs take a delight in growing the huge, mammoth Gourds as large as possible, and, given good soil, ample moisture, and warmth, there is no difficulty in growing fruits to exceed 1 cwt. Some readers may ask, Are Gourds useful? and I reply, Many of them are if used at the right season. In France these plants are largely grown and made good use of, and in tropical countries the Gourd is eaten in a raw state, as some of the varieties are somewhat like a huge Melon. It makes an excellent soup, and a vegetable too, if well stewed and not too ripe when gathered.

Space does not permit me to go at length into the Continental kinds, and I will confine my note to those which may be sown now or until the end of April for early June planting out. One kind less known than it ought to be is Spanish Giant, and this grows to an immense size, being quite globular in shape, and of a bright yellow colour. It is excellent for decoration and a very fine grower. Another desirable variety is Mammoth. This is very large and does not always come true to colour; it assumes various shades. Both the above are good when cooked in a young state. The American kinds find favour in this country on account of their great size, the Ohio being excellent for cooking, and if allowed to mature is used dried for several purposes. This is the variety largely used for soup in hot climates, and is a desirable vegetable. The large green and large yellow are wel known, and these anyone can grow; the same remarks apply to the orange-coloured and yellow Gourds, the only difference being the colour of the outside skin. The best of the smaller Gourds are the Crown and the Custard varieties. These are of closer growth than the large kinds. The Nutmeg Gourd is nearly round, with red, highly-scented flesh and is very pretty in a collection. The Naples Gourd is more like a large Cucumber, of a deep green colour, sweet and pleasant to eat raw. Of course, these smaller kinds are distinct from the Pumpkin or Squash

Gourds. From a photograph by Miss Willmott, Great Warley, Essex.

varieties. Under this heading may be classed the Turk's-cap, an ornamental variety of medium size and with Pumpkin-like flesh. The Patagonian is a very handsome fruit, more like a Marrow in shape, the flesh yellow and ribbed; it is an excellent keeper if cut when nearly ripe. The Egg-shaped, the Chestnut, and Orange are all small but ornamental kinds, and there are many others well worth growing. I find that many of the varieties are named after the countries in which they are grown. Thus they are not always distinct, as some of the Spanish Gourds when grown elsewhere receive distinct names.

Culture is simple, and now is the time to proceed. Where an amateur can find space I would advise growing a collection, as by this means more interest is secured. A collection of three or four dozen is obtained at small cost, and if a dozen of the large ones or edible kinds are grown it is ample. The seeds are best sown in a pot, one seed in a small pot or three in a large one, under glass if possible. If glass be not available, sow in April, make up a warm bed of

anure, and raise the plants thus. Be careful ot to give much water until growth is active—
fact, till seedlings form the third leaf. Plant t in light, rich soil early in June on a south order, or they may run over a fence, or be used s a screen. Give copious supplies of water or quid-manure in hot weather. Water overhead the evening; in fact, treat like Vegetable arrows. G. W.

Treatment of Asparagus-beds.—I ave Asparagus-beds, which on account of much ain were not manured in the ordinary way last utumn. It is now, I presume, too late to pply stable-manure as a mulch? Will it do to se salt also, or will the latter be sufficient lone?—E. A. F.

*** We think Asparagus best manured in arly spring; but, of course, the manure must e thoroughly decayed and well broken up, ot strawy. We also advise doing the work t once, as the rains will pulverise the anure by the time the plants push through, nd the roots receive the new food just at ime required, not when manured in the utumn. For artificial foods you would have elped us if you had stated the kind of oil—if heavy or light. If heavy, do not pply salt until May or June, and give it in howery weather; also you may repeat the ressing monthly till September, it being referable to give it in smaller quantities at ntervals, rather than a large dose. Salt is ot sufficient without manures; it is a good ddition, as the plants delight in a certain mount of saline matter. On the other hand, your beds are not poor, there is no need o give decayed stable-manure at this season. We would advise artificial manure, and we ave a good opinion of fish-manure. If this e used about twice liberally, now and June, ist raked in the surface, it will prove eneficial.

Celery culture *(Barbara).*—We have ften gone into the culture of Celery, and we ear space will not allow of another article ist now. Look regularly at "Garden Work" in this journal; it will help you reatly. Sow seed at once in pans of light oil if you have glass. If not glass sow on warm border next month, and cover at ight for a few weeks. When plants are the third leaf transplant into rich, light oil, 6 inches apart. Well water, and when arge enough plant in the trenches in a ngle row. Prepare trench by digging ut soil to a depth of from 9 inches to 2 inches. Place the soil on each side of the rench, in the bottom of which put 3 inches o 4 inches of well-decayed manure. Dig his in, and then allow it to settle, and lant. Lift the plants with a good ball of oil and roots intact, removing any side oots. After planting give abundance of ater in dry weather; and Celery is much nproved in flavour if liquid-manure is ven at intervals, but not too strong, also ot and salt in showery weather. Sandngham White and Leicester Red, and Major Clarke's Red are good varieties. Sow eeks at once on a warm border. Plant it in May in shallow trenches in richly-anured land. Leeks need much moisture nd food.

Late Celery.—For many years I have anted late rows of Celery. These are never oulded up in any way till December, and if osty they are left alone. Strange to say, this over runs prematurely, and remains good well to May if lifted early in April, laid in under north wall, and kept moist. This lot is anted on the flat, and is earthed up by drawg soil up to it with a hoe as late in the year possible. The variety is Standard-bearer, ne of the best late kinds I have grown. Of urse the heads are dwarf, but they are large ough for the purpose required. The seeds are wn in the open ground late in April, or early May, very thinly and the seedlings are not transanted, but lifted direct into the rows when of a od size. I admit this is simple culture, but it is uch better for growing late supplies than ing plants raised in heat. Such plants are uch hardier and are superior to those allowed remain a long time in seed-beds or boxes.—S.

OUTDOOR PLANTS.

THE GREAT REEDS.

The Arundos are very ornamental hardy plants of easy cultivation. The best effects are obtained when they are planted in bold masses. The subject of the accompanying illustration is one of the most graceful of all the Grasses. In general appearance A. conspicua resembles the Pampas Grass, but it is not so vigorous in growth. Its leaves are broad, flat, and slightly serrated. The long, feather-like plumes are thrown up early in the season, and last in perfection until late in the autumn. They are very effective when being tossed about in a gentle breeze on a sunny day. A. Donax is very vigorous, growing to a height of from 8 feet to 14 feet in this climate. It is a highly decorative plant, and when planted on the banks of streams or ponds produces a very telling effect. Its long stems are clothed with broad, glaucous-green leaves. It is not planted half so much as it ought to be. A. Donax variegata is prettily marked with white. It is of dwarfer and more compact habit than the type. It is a good grower, very distinct, and looks well in beds or treated as single specimens on the lawn. It also makes a very fine pot plant for a cool conservatory. The Arundos delight in a moist, well-drained soil, and a position sheltered from very boisterous winds. They are sun-loving plants, and require copious supplies of water during the growing season. They are considered to be rather tender. This is a mistake, as they will survive winters of ordinary severity without the slightest protection. The best time for planting them is in spring, just after growth has commenced.

Silvery Reed Grass (Arundo conspicua). From a photograph by Mr. S. Wyndham-Fitzherbert, Lanscombe House, Torquay.

Erica carnea.—This is always a safe plant for winter gardening, either for margins of beds or for associating with such things as Andromedas. We have seen it repeatedly of late with its tiny blossoms and buds. There are many places in the garden admirably suited to the hardy Heaths, such as the margin of a bank of Rhododendrons. In such a place it is sure to be quite happy and find soil and situation alike congenial.

THE ALPINE AURICULA.

(In reply to "C. S. J.")

A correspondent, "C. S. J.," puts several queries on the alpine and fancy Auricula, and a detailed answer may be useful. The alpine Auricula does best and is most effective when well planted in the rock garden, and when treated in this way the plants do not require replanting for several seasons; indeed, I have now a group of a pretty variety named Diadem, of which I planted in a group a dozen small plants, and these increased so in size that I counted over a hundred trusses the fifth year after planting. I have also known a single plant increase in size and maintain its position for twenty years without being disturbed. For rock gardens and the front line of herbaceous borders seedlings are preferable.

The fanciers and exhibitors grow their plants in flower-pots, and in this way they can be grown under glass, and be protected from inclement weather. The choicer varieties are cultivated in flower-pots, and the ordinary kinds are suitable for this purpose. I have won many first prizes with show and alpine Auriculas, and always use ordinary flower-pots, unglazed. The best potting-soil is composed of four-parts loam, one of leaf-mould, one of decayed manure, and some coarse Bedfordshire sand. The flower-pots do not need much drainage. One large crock in the bottom of each pot, with smaller

pieces over it, and some fibrous turf, from which the earth particles have been shaken out, placed over to prevent the compost from mixing with the drainage; failing the fibrous turf, some Moss may be used. Pot firmly, and the best sized pots to use are those that are from 3½ inches to 4½ inches diameter. Place the plants near the glass in an ordinary garden frame. The gold centres of an alpine Auricula bloom are most esteemed. None can be said to have pure white centres. They are light cream coloured, opening with a pale yellow tint, but as the corolla becomes older the tint gets paler, until it is almost white sometimes. The cream-centred varieties are usually purple or maroon-purple, shading to a paler tint at the margin, while those with yellow centres are crimson or maroon-crimson, shading to a much lighter tint at the margin.

Fancy Auriculas, as exhibited in the clasees provided for them at the National Society's Exhibition, are such as cannot be admitted into the classes for green, grey, and white edged or selfs. They have white mealed centres, and a green, grey, or white edge, but they have no body or ground colour as an Auricula ought to have. They are not found in the alpine section. Twelve good alpines are Diadem (Gorton), Edith (Turner), Defiance (Turner), Mrs. Harry Turner (Turner), Emperor Frederick (Douglas), Unique (Turner), Dean Hole (Douglas), Mrs. Martin (Martin), Miss Moon (Douglas), Nellie Hibberd (Douglas), Toujours Gaie (Douglas), Charles Turner (Turner). J. D. E.

CHRYSANTHEMUMS.

Mildew on Chrysanthemum-cuttings (*Alice*).—Do not be dismayed because your young plants are affected with mildew, as this is by no means uncommon in the early spring. We cannot tell you what is the probable cause of the plants being affected in this way without first knowing the exact conditions under which they are grown. The appearance of mildew may be due to entirely different conditions, as it is sometimes seen in dry and sometimes in wet weather. A good remedy is to lightly syringe the foliage with water, afterwards dressing the affected parts with sulphur, the moist condition of the foliage causing the sulphur to adhere thereto. The plants should soon recover and grow out of it, and we think you would contribute to their well-being if you transferred them to cold frames, where protection can be given against severe weather. On fine days freely ventilate, and this will have the effect of encouraging strong and healthy growth.

Stopping Chrysanthemums (*Beginner*).—The list which you send to us cannot be given in detail, but we think the following rules good ones: Late sorts, such as the Queen and Boule d'Or (old) may be stopped at the end of April, and the first crown-buds retained. Other fairly late sorts, such as Mrs. W. H. Lees, Golden Gate, and Sir E. Lawrence, should be stopped during the last week in March and second crown-buds retained. Other sorts which are rather earlier than the November shows should be stopped at the end of the second week in April, and the second crown-buds in this case retained. Such standard sorts as Chas. Davis and its parent, Viviand Morel, Phœbus, Chas. Molin, besides many others, come true to time without any interference with their growth.

Stopping Chrysanthemums (*Stamp*).—Suppose you stop your plants now, the next bud that appears is the first crown-bud—that is to say, stopping a plant stands for, or rather is, the equivalent of a "break" bud forming, and causing other shoots to form. When you are advised to "retain" or "take" the first crown-bud, it is the first bud which appears on the plants after being stopped that has to be manipulated.

Carnation-pipings.—Seeing an article in Gardening Illustrated for February 20th, on propagating Carnations from pipings, I should like to give my experience, thinking it may be of some help to your readers. For some time I tried the method described for taking my Carnation-cuttings, but found it very unsatisfactory, as they almost invariably "damped off." I may say I tried some hundreds every season with poor success, until an old gardener explained to me the mistake I made was in "cutting" the end at all. It should be torn off the plant, and inserted in the ground, merely removing a few of the lower leaves without "cutting off the bottom of the piping," as is usually done, in this way leaving on "the shoulder," which is the part that throws the roots. Last August I planted three dozen Mrs. Sinkins Pink in the open ground, and notwithstanding the wet winter, I have not lost one of them. I may add this applies equally to Rose-cuttings.—Devon.

INDOOR PLANTS.

PLANT PROPAGATION.

Bouvardias.

When plants of these beautiful greenhouse flowers are being repotted and started for next autumn and winter's use is an excellent time to commence one form of propagation.

Root-cuttings are easily obtained, as when we turn the plants out of pots and remove most of the older soil from their roots we have a good opportunity. Select pieces about the size of an ordinary knitting-needle, and cut these into lengths of 2 inches. Prepare a pan of light loam, leaf-soil, and sand in equal proportions; almost fill the pan, give a good watering, and lay the pieces of roots on the surface. Cover over with ½ inch of the same compost, and stand the pan in a temperature of 65 degs. to 75 degs. In a short time eyes will push out from the pieces of roots, and when they are some 2 inches

Bouvardia-cutting.

high they may be lifted from the pan and grown on in the ordinary way.

Soon after the old plants have been repotted and placed in a greenhouse temperature to start them into new growth, we can take soft-wooded cuttings after the form of our illustration. These will need a sandy and light compost in which to root, and must be kept close. Many fail to root them through keeping the cuttings too moist and close. By frequently wiping the inside of the clôche or glass this can be avoided. Use plenty of sand on the surface, and seldom sprinkle after the first good watering immediately after the cuttings are inserted. Pot on when rooted and head them back frequently. In June or July plants may be placed in a pit or frame upon a spent hot-bed that has been used for raising summer-flowering annuals, etc. Here they will grow until end of September, when they should be lifted, potted into a rich but light compost, removed to the greenhouse, and frequently sprinkled until recovered, meantime shading from bright sun for a few days. This is easier than pot culture from the first, and danger of drought through the summer is avoided.

Aotus gracillima.—The leguminiferous greenhouse plants are always in strong force at this season of the year, and among all the groups of purely shrubby plants do most to enliven and give variety to the cool-houses. This Aotus is a worthy member of the group, being free-flowering, easily grown, and exceptionally graceful in habit. It has long, slender shoots, growing from 1 foot to 2 feet in a single season, these being furnished with small, dark green leaves. The flowers are axillary, and when the plant is at its best the graceful shoots are transformed into yellow wands, the blossoms being so thick as to practically hide the leaves. The species is most useful as a pot plant, but may, when it becomes inconveniently large, be planted out in the conservatory, in either case requiring a peaty soil. After flowering the shoots should be cut back to within a few inches of the previous year's wood, giving the plants for a few weeks a brisk, moist heat. After growth has fairly recommenced ordinary greenhouse treatment is required.

ROSES.

Pruning Roses.—Would you or some of your correspondents kindly tell me how to prune the following Roses, as I gather some of them differ greatly in the severity of the treatment required? I must prune them myself this year. All are bushes, and four or five years old. Gloire de Dijon, Malmaison, Marie Van Houtte, W. A. Richardson, La France, Viscountess Folkestone.—Clericus, *Torquay*.

*** Prune Gloire de Dijon and William Allen Richardson by cutting away what can be spared of the old wood without sacrificing any of the long growths made last season. It is these which are most valuable, and which will flower throughout their entire length if left. You may simply remove the tips of these and thin out the lateral growths where crowded, cutting the remainder back half-way. Marie Van Houtte needs a little thinning out of weak wood and the rest shortened back half-way. Souvenir de la Malmaison, La France, and Viscountess Folkestone need very little pruning. Cut back the weak shoots half-way, and leave the rest two-thirds of their length. We presume you wish for a quantity of blossom in preference to a limited number of extra quality, and have replied accordingly.

Niphetos Rose buds failing.—I shall be pleased if you will tell me the reason of Rose-buds (Niphetos) when about ¼ inch in size turning soft and then brown in colour, then falling off withered? I have a few plants in 8-inch pots, potted last October, and in December I placed them in greenhouse, and have kept them in a temperature of from 40 degs. to 50 degs. I have watered moderately with warm water, and syringed occasionally with Quassia-chips and soft-soap in warm water. During the last fortnight I have ventilated, but have maintained the above temperature. A reply in your next issue will be much esteemed.—Isinglass.

*** Niphetos is particularly liable to cast its buds as you describe, and if you exceeded in strength with your washing solutions, allowed the plants to feel a draught or get dry, the young buds of this beautiful Rose will often behave thus. They need more care at that stage than any other. We would prefer a rise of 10 degs. in temperature now.

Pruning Crimson Rambler Rose.—I have read with interest the article on pruning climbers in your to-day's issue, but I should like your further advice *re* a Crimson Rambler that I put in last year. Originally it was one stem, but last year threw out four new rods 6 feet to 10 feet long. The main stem is covered with lateral growth from bottom to top, and promises to be very bushy. Ought I to cut this stem clean away from the bottom? Being a cluster Rose, I did not know whether to give it the same treatment as a Maréchal Niel or Gloire de Dijon.—F. G. L.

*** Cut away the centre piece of your C. Rambler Rose at the point indicated by a cross in your sketch. Clusters of Roses will form from every eye upon the long rods. This Rose needs scarcely any pruning.

Niphetos Rose.—I have a climbing Rose, Niphetos, growing in a large pot in a greenhouse. The plant looks fairly healthy, and there are plenty of flower-buds, but the young leaves curl, not shrivel, and the first flower-bud's stem seems to dry away and the flower drops. Can anyone tell me the cause?—Amateur.

*** Sudden changes of temperature, or once allowing the plant to get overdry, will cause this. It may be you have used too strong

liquid-manures, or too strong an insecticide when combating with insect enemies. Any of these would have the effect you describe; and Niphetos is more than usually subject to throw its buds when in a very young stage.

Pruning Hybrid Brier Roses (*T. M. E.*).—By no means prune these. We are glad our note was in time. Had you pruned you would have lost their beautiful blossoms, and simply got more flowerless growth. Tie them to stakes and form a hedge. In this form we have them 7 feet to 10 feet high, and they will grow even 11 feet to 15 feet next season. Our plan was to cross a few strong stakes in the form of lattice work, but by the second season they were a support to themselves. Certainly no animal of ordinary size will ever pass through a hedge of four-year-old Hybrid Sweet Briers.

General Jacqueminot Rose in pot (*Countess*).—You seem to be treating your Rose correctly, but are, we fear, giving a little too much ventilation, and thereby running risk of draughts. Too much or too little water, as well as a draught of cold air, are the chief causes of mildew. You have no other remedy against the "brown grub" or Rose-maggot than hand-picking, and must persevere for a short time or they will spoil every flower.

Roses for porch (*An Ignorant Amateur*).—We are very glad to receive your query and interesting letter. If your porch will have an outer door, which we imagine from plan sent, then you can grow many plants inside. Cobæa scandens, Clematis indivisa lobata, Roses, the choicer Passifloras, and Chimonanthus fragrans would grow as climbers. You evidently manage plants well. Could you not plant them in boxes and cover these with a few pieces of Cork-bark to hide their roughness, and improve the appearance of the whole? We would recommend the three first named plants. We do not know what the rules are at the Botanic Gardens, but have little doubt the curator would help, as far as possible, any "lover of flowers." We shall be pleased to have a note about the way you grow your winter flowers.

Rose-cuttings and blighted Roses (*Semper*).—We would not recommend you to move the Rose-cuttings now. Disturbing the callus at their base would probably be fatal. Regarding the blight, you cannot do better than syringe freely with a weak solution of soft-soap, not more than 1 oz. to the gallon, adding a teaspoonful of sulphur to this. The carbonate of ammonia is too powerful for your use.

Best standard Roses.—I shall feel obliged if you will name half-a-dozen of the best standard Roses for a southern position, well protected?—Roses.

*** General Jacqueminot, La France, Marie Van Houtte, Dupuy Jamain, Boule de Neige, and William Allen Richardson would give you a good variety of colour.

Treatment of Rose-cuttings (*Shepherd's Bush*).—Uncover the cuttings and leave them untouched until next autumn. There is no difficulty in rooting Roses provided one uses ripened growth of the same season. Insert in a sandy compost; but your locality is not very favourable, and they would probably do better upon some foster roots.

2844.—**Auriculas from seed.**—For two or three successive years I sowed the seed thinly in boxes of turf-soil and sand. When germination was visible I tilted one side of each box on a brick, so as to give a slope of about 30 degs., the spot chosen having shelter from east winds. I never put mine under glass from first to last, and had a large collection without losing any. They delight in snow, but a fall often uproots them, and in the subsequent thaw they must be replaced in the soil. Such is their vitality that in my very cold climate I have seen stout specimens which had been accidentally dropped on the garden walks without any soil at their roots remain fresh and flowering for weeks. I have some of the original stock now, seventeen years old, in my garden.—W. H. L., *Cumberland*.

2815.—**Snail Bean.**—This was originally introduced to India from South America; in South Africa, too, it is very common. A climber known as "Snail Bean," with a large, sweet-scented flower, and, of course, requires stove heat, and will grow in any good garden soil. I think Vilmorin & Co., of Paris, have it in their list.—W. H. L.

Repairing old much-nailed walls.—When trees are at rest unnail them, fill holes with mortar or cement (three sand to one cement), and then fasten wire-netting used for sheep, 4-inch mesh, and train to it. Iron staples put into old holes with cement (pure) will fasten it.—G. A. H.

TIME TABLE FOR SOWING VEGETABLES.

In reply to "J. G. M." and many other subscribers, we give an extended time table, suitable for any part of the kingdom. For the extreme north the dates may be a full fortnight later for early crops, and sooner for winter. For mid counties a week sooner, or in exposed gardens. Of course, other varieties may be used if desired.

Variety.	*Time to sow.*	*When ready.*
Broad Beans:		
Early Long Pod	February or early March	June
Monarch and Leviathan	March	July
Green Windsor	March	July (end)
French Beans, Dwarf:		
Mohawk	April	June
Ne Plus Ultra	End of April	Late June
Canadian Wonder	May and June	July & August
Runner Beans.	May	July to Oct.
Peas		
Chelsea Gem	March	June
Stratagem	March (end)	Late June
Autocrat or Satisfaction	April	July
Windsor Castle	May	August
Late Queen or Ne Plus Ultra	June (early)	September
Broccoli:		
Self-protecting Autumn	April	October
Main Crop or Early White	April	December
Sprouting	May	February
Model	May	April
Late Queen	May	May
Cauliflowers:		
Snowball	March	June
Pearl	March	July
Autumn Giant	March	September
Autumn Mammoth	April	October
Cabbage:		
Gem	March	August
Favourite	April	September
Rosette Colewort	June	November
Ellam's Early Dwarf	July 10th to 20th	April & May
Brussels Sprouts:		
Matchless Gem	March	October
Paragon	April	November
Exhibition	April	Dec. to March
Kale or Borecole:		
Dwarf Curled Scotch	March	January
Asparagus Kale	April	February
Cottager's Kale	May	March
Beet:		
Globe	March	June
Nutting's Dwarf Red	April	September
Cheltenham Green	May	Nov. to April
Asparagus Seed.	April to plant in	April
Rhubarb Seed.	April for planting	April
Parsley Seed.	March	July
Carrots:		
Early Gem	March	June
Early Nantes	March	July
Model	April	Oct. to March
Celery:		
Early Rose	March	August
Standard Bearer	April	September
White Gem	April	Oct. to spring
Chicory:		
Christmas Salad	April	November
Witloof	May	February
Frame Cucumbers.	April	June
Lettuces:		
Golden Queen	March	June
All Year Round	March and April	July
Victoria, Hammersmith	August	April
Leeks:		
Lyon	March	October
Musselburgh	March	Winter
Endive:		
Batavian Green	June	September
Onions:		
Main Crop or Ailsa Craig	March	August
Tripoli or Giant Rocca	August	May and June
Parsnips:		
Student or Hollow Crown	March	Winter
Radish:		
Wood's Frame	February	April
Long White, Long Scarlet	March	May
Savoy:		
Green Curled	April	October
Drumhead	May	December
Tomatoes.	March	August
Spinach:		
Victoria	March	May and June
Long Standing Round	August	March to May
Turnips:		
Early Milan	March	June
Snowball	April	July
Red Globe	August	Winter
Potatoes:		
Ringleader or Sharpe's Victor	February	June
Ashleaf Veitch's or Myatt's	March	July
Windsor Castle	March	August
Triumph	March	October
Syon Prolific	March	December
Magnum Bonum	March	Spring

GARDEN WORK.*

Conservatory.

It may be necessary to shade a little on bright days. Azaleas, bulbs, and other things in bloom soon fade when exposed to hot sunshine. It may not in all cases be necessary, as some houses require a little shade sooner than others. All plants will require more water now. Pelargoniums and other plants coming into bud may have weak liquid-manure. The Clivias or Himantophyllums are very handsome now, and may be grouped with the Amaryllids and Crinums, all of which will do in the conservatory when in bloom. This is the best season for renewing or top-dressing the border in the conservatory. Some care is necessary in selecting the material for filling in the borders of new houses. I once had to clear out the borders of a large house through using leaf-mould which had little bits of Beech-mast mixed with it, and which caused a fungus to attack the roots of Camellias and other things. There is always the danger of certain parts of the border getting dry. Very often, and when peat is used, there may be bits of Heather or Bracken roots present, and these may generate fungus. A little soot should always be mixed with the soil of new borders, and in planting anything out of pots in new houses, especially hard-wooded plants such as Camellias, Orange-trees, and Acacias, it is most important that the collar of the plants should be kept well up. The plants will be sure to get deeper in the soil as the settlement takes place, and unless they are kept well up it will be necessary to lift and replant, as a hard-wooded subject buried too deep in the earth is sure to die. Years ago, when New Holland plants were more grown, we had a good many planted out in the borders. I do not say that is the best way of growing them, but in roomy houses most of the hardiest things will do well. Hovea Celsi, a notoriously difficult plant to do well, grew very well for a number of years with Eutaxias and other things in a bed of peat, and I have never seen such Indian Daphnes in pots as we once had in a bed of yellow loam. As bulbs go out of bloom move to cold pit, and when hardened a bit plant out in the borders and the shrubbery or wherever there is room. Keep fires down now during the day.

Stove.

Things move rapidly now, and much work is waiting to be done. No gardener worthy of the name has any leisure—in fact, judging from my own experience, gardeners whose hearts are in their work never have any leisure. The work grows from day to day, and if not grappled with soon gets past us and things suffer. Some of this is doubtless owing to aiming at too much, and especially is this the case with plants under glass. It is far better when the plants are smothering each other to harden one's heart and cast out the least valuable. The flowering climbers will now be moving and anything which requires repotting must have attention. There is sure to be a good deal of potting to do now, and a little extra warmth and atmospheric moisture will be desirable. Cuttings of everything may be rooted now in bottom heat in a brisk temperature. If Eucharis Lilies are likely to require repotting before another spring it will be best to do it now. Night temperature, 65 degs. If the sun strikes the house and makes it very hot, I should shade for a time rather than give much air to let out all the moisture. Gardenias and other flowers soon lose tone and colour if exposed to hot sunshine.

Ferns Under Glass.

Those Ferns which cannot easily be raised from spores should be divided in spring, and if a stock of any kind has to be worked, it is far better to work young plants than old ones. Take the case of Adiantum Farleyense, which has never yet produced spores—at least, I have never seen spores of this and believe it to be incapable of producing fertile fronds; but I have never had any difficulty in working up a stock by cutting up young, healthy plants into single crowns and potting them in the best loam. But where plants do produce seeds seedlings are better than divided plants. There are no plants like those produced by the large market grower, and these are mostly seedlings. Ripe spores may be sown any time when they can be had. Young Ferns must have heat and moisture to work them up in good condition. Palms may be repotted now.

Watering Inside Fruit Borders.

I am in favour of inside borders for early and late Vines and also for early Peaches, but they must have plenty of water, and the water should have something in it, or should be used to carry the stimulant sprinkled on the border down to the roots. It would take a vast amount of time to overwater Peach-trees or Grapes in summer if they had only inside borders, and these left unmulched. This is why a little mulch is so desirable, especially where the trees have filled the house and have settled down to bearing. In using fresh stable-manure for mulching, take care the ammonia is not too strong for the foliage. In ventilating fruit-houses now a little air should be given as soon as the sun begins to make any impression upon the temperature of the houses.

Window Gardening.

Rearrange Fern cases. The best plan is to take the Ferns out carefully before much new growth is made and replant

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

in fresh compost. Liliums starting into growth should have a light position to keep them sturdy. There will be a good deal of repotting to do now. Sow seeds of Stocks, Asters, and Phlox Drummondi for planting a border.

Outdoor Garden.

Ivy on walls and buildings should now be trimmed in close with the shears. Evergreen shrubs which have become naked at the bottom through neglect may be cut back now. They will soon break and fill up with young wood. Prune Roses, commencing with those in the warmest situations and on walls and buildings. Study each plant and prune according to habit of growth. Weakly growers should be pruned more than the robust and vigorous. Leave the Teas till the last, and in all cases, if possible, prune to dormant buds. Old plants which seem barkbound and only make thin shoots and produce small flowers may be improved by cutting hard back. See to the mulching of newly-planted shrubs and trees. This is a wonderful help in keeping the roots moist. It may be necessary to water, as we often have drying winds in March. Sow the hardiest annuals in broad patches to make a good show. Many of the seeds are small, and if sown on rough, steely ground will fail to germinate. This is a detail that should have attention. It is not a difficult matter to sift a few bushels of soil to cover small seeds where the conditions are not suitable. Stir the soil freely among Pansies, Carnations, and spring flowers generally.

Fruit Garden.

Plant Melons in frames as soon as the temperature is right. To be successful the heat must be steady and lasting. Plant in good sound loam, slightly enriched with a little bone-meal. Early Vines must be looked over once a week to regulate the growth. If sub-laterals are permitted to run out the growth is likely to do harm. Overcrowding is always bad, and the removal of a lot of foliage at once checks the roots and may lead to shanking later on. Thin all Grapes in good time. Do not handle the berries, but use a bit of smooth stick in the left hand to open out the bunches. No one can learn to thin Grapes by reading about it. Get an old hand who knows something of the Vines to thin one bunch as an object lesson. If this cannot be done do not do too much at first. Go over a second time rather than spoil the symmetry of the bunches. See that all inside borders are moist. After the Grapes are thinned is the time to give stimulants, and these may be freely applied. As a rule, fruits under glass do not get nourishment enough to permit of their doing their best, and this is specially true of Peaches and Grapes. All blossoms of Peaches and Apricots should be sheltered in some way. I have already said fishing-nets will generally suffice if properly used. Grafting may begin now. There is a good deal of this kind of work waiting to be done. Figs swelling the crop in pots must be well nourished; rich mulchings and liquid-manure may be used freely.

Vegetable Garden.

The ground usually works well this month when it was turned up rough during winter. Clear off exhausted Greens, and sow successional crops of Peas, Beans, Horn Carrots, Radishes (the French Breakfast Radish is good for all seasons). Sow Lettuces. Salading will be less plentiful now unless Lettuces are grown under glass. Where there are plenty of frames and moderate hot-beds splendid Lettuce may be had in quantity. Under ordinary circumstances one hot-bed if put together properly may be started with Asparagus early in December. The Asparagus will be cleared by the new year or earlier, and the frame filled with young plants from the seed-bed outside or from boxes raised under glass of Paris Market Lettuce, 6 inches apart. This Lettuce turns in quickly, and will be cleared off in time for the frame to be filled with Stocks and Asters, or any other plants which require shelter, and the frame will be empty in time to fill with Cucumbers or Tomatoes. Prick off early Celery and plant more Potatoes. Windsor Castle and Up to Date are good kinds to grow for crop and table use. Do not crowd, and when the proper time comes adopt the Jensen method of earthing up, which really means draw the soil up in a sharp ridge, leaving a clearly-defined furrow to get the water speedily away. E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from March 13th to March 20th.

Looked round all recently planted trees and shrubs to see that the mulch is sufficient to keep the roots moist, also that the stakes and ties are secure, and are not likely to do injury. A hint to the wise is enough, and much harm is done by neglecting little things, such as mulching, staking, tying, etc. As regards tying, some workmen have a fancy to brace everything up tight; but there must be room for growth. We have protected all our Apricots and Peaches with fishing-nets in the way we have found efficient for some years. Formerly we used Brittain's netting, but the necessity for its removal every fine day added a good deal to the labour, and as they wore out we fell back upon the fishing-nets, which are quite as efficient and not nearly so troublesome to deal with. When a large number of trees have to be dealt with we want to adopt the best and most economical system of covering. Made a new plantation of Rhubarb. I have long ago ceased to regard any crop in the garden as permanent. It is best to keep things moving about, and as we force a good deal of Rhubarb by lifting the roots and placing them indoors, it is necessary to make new plantations often. We have just finished cutting back the Ivy on several walls and buildings. I like to get it done a little earlier than this when it can be managed, but it will soon make new foliage. Last year's Marrow Peas have been sown in boxes somewhat thickly to produce young green tops for flavouring soups. We generally have a few odds and ends of Peas left, and this is a useful way of utilising them. Planted out Red Cabbages from seed-bed. Planted more Potatoes. I am getting forward with this work now, and the ground works well. Grafted a number of Apple and Pear-trees. The bark works freely. Sowed Egyptian Turnip-rooted Beet. Only a few rows for first pulling have been sown, as the early-sown Beet sometimes bolts prematurely. End of April will be time enough to sow the long-rooted kinds for autumn and winter use. Sowed more Lettuce, and planted out last of plants from seed-beds. Sowed a warm-pit with Dwarf French Beans. Put in cuttings of bedding-plants. Routine work in vineries and Peach-houses takes up a good deal of time now. If anything is delayed in connection with disbudding or thinning or tying damage soon comes of it. Fresh relays of Strawberries are introduced every fortnight or three weeks. It would never do to be without Strawberries after we once began gathering. Cucumbers also must be had in succession. Rearranged conservatory, bringing away all plants in a faded condition, and replaced with fresh stock from the growing houses.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

55—**Diseased Portugal Laurel leaves** (*F. H. M.*).—Please send us a few of the affected leaves. We cannot judge of the disease without.

56—**Shallot Onion** (*John Crichton*).—The Shallot Onion splits up if left in soil. It soon becomes a mass of small bulbs, and each one should be replanted.

57—**Soot** (*Qn. An.*).—So much depends upon the bulk of soot or its freshness when placed in water. It does not continue to give strength after being immersed a few weeks.

58—**Maiden-hair Ferns weakly** (*Constant Reader*).—Use some well-approved artificial manure twice a week, dissolved in water. Soot-water is also good to syringe with daily.

59—**Plants for window-boxes** (*J. S. H. C.*).—There are Polyanthuses, Pansies, and Forget-me-nots available, and which would come out again in time for summer blooming plants.

60—**Currant-buds of abnormal size** (*A. Taylor*).—Your Currants are badly diseased. We would advise cutting the shoots down level with the soil, and encouraging new wood from the base.

61—**Planting Hops** (*Qn. An.*).—Hops are perennials, and come up year after year. Instead of seed, you will do better to procure a few "sets" from a nurseryman or farmer, and now is a good time.

62—**Strawberries in barrels** (*Strawberry*).—We have had no experience about Strawberries in barrels. Royal Sovereign, President, or Sir C. Napier are free growers; only these must be used.

63—**Dressing fruit-trees** (*Qn. An.*).—Soft-soap, ½ lb.; sulphur, ½ lb.; soot, ½ pint, and sufficient clay and water to make it like a thick paint. Mix the whole well together, but it is full late to paint now.

64—**Sowing Celery seed** (*Anxious*).—Sow Celery seed at once if you have glass, if not, first week in April on a south border. Cover at night till the seeds have germinated. See reply to "Barbara" also.

65—**Flowers getting weedy** (*Moonside*).—We think you are keeping your plants too dark, and probably overcrowding. Plants must have light and room if you are to avoid long and almost useless growth.

66—**Treatment of soil for Potatoes** (*M. L. P. F.*).—From your particulars we think your land is in want of lime. Do you plant deep enough? A good dressing of marl or heavy soil would be beneficial.

67—**Cattleya aurea with or without Moss** (*An Amateur*).—It is advisable to mix a little Sphagnum Moss with the peat, as you will then be better able to judge by the state of the Moss when the plants are wet or dry.

68—**Treatment of seedling Apricots** (*Amateur*).—You may plant them out now, and in time they would fruit; but it is unlikely that the fruit would be of sufficient quality to be worth room and trouble that we do not recommend this plan.

69—**Poisonous properties of Foxgloves** (*A. F. Y.*).—This familiar plant is poisonous in all its parts, the seeds most actively so. The leaves, however, are the part from which chemists extract the essential principle *Digitaline*, which has been found so efficacious in reducing abnormal pulsations of the heart. An infusion of the leaves has a similar effect. The danger here is from an overdose. Cattle are not known to meddle with this plant.

70—**Heliotrope** (*Inquirer*).—Heliotrope requires a little nourishment occasionally if it is a large plant and in good health. Manure-water, in the way of liquid cow-manure or soot-water, is an excellent stimulant. A shady position is most suitable for it.

71—**Heliotrope-leaves under glass turning black** (*Cherry-pie*).—Probably you have used too strong measures to kill insects. The Heliotrope is very sensitive, especially to fumigation. Pick them off and treat the plant similar to the Sweet-scented Verbena.

72—**Failure of Tulips** (*E. L.*).—We think the fault is with the bulbs, seeing that one in the same pot was so satisfactory, as well as the numerous other bulbs you mention. You needed full-size bulbs of Pottebakker Tulips, and these are not so large as many others.

73—**Planting bed** (*Star*).—You would not get flowering plants to suit your small bed and arrangement of colours. Try some small Centaurea candidissima in the centre, then Lobelia, and finish the edges with Alternanthera amœna spectabilis. Your space is so small.

74—**"Unsatisfactory" Violets** (*Mrs. F., near Wallingford*).—We see nothing the matter with your Violets except that they are scarcely expanded, and the first blooms never come so highly coloured. Later on you will find a distinct tinge of rose where the green is now.

75—**Mulching Rose-trees** (*Qn. An.*).—You may mulch now to advantage. By all means use decayed manure. The stable and pig-manure turned over in a lump and then applied would be excellent. Light stable-manure is used in autumn as a winter protection as well as a fertiliser.

76—**Dressing Cabbages, etc., to prevent rabbits eating them** (*Anxious*).—We do not think any dressing will prevent the injury, as if too strong it would kill the plants. You could try fresh lime, mixed with Quassia, but fear the rabbits will find out an edible portion. You must use the gun.

77—**Broom seed** (*H. E. B.*).—Your Broom seed may be sown now. Sow on a warm border, just covering the seed with fine soil. May be sown broadcast or in drills. Germination will be assisted if the seeds are sown in a warm frame. With regard to the Holly berries, a note on Hollies will be given next week.

78—**Lime for Peach-tree roots** (*Qn. An.*).—Lime is good, but so much depends upon the trees. It certainly is not wise to dig it in now. It is best used with soil at planting, not as a surface food; indeed, we prefer it when in the form of old mortar-rubble. You would do well to use it when leaf falls, not now.

79—**Carnation-leaves turning brown** (*Novice*).—You have allowed too much moisture and not sufficient air to cause the leaves of Carnations to turn brown. We advise you to give a free circulation of air, according as the weather permits, and do not water so frequently, but keep the plants on the dry side.

80—**Asparagus plumosus nanus turning yellow** (*Cherry-pie*).—Most likely your Asparagus plumosus nanus is dying down. Cut away the old leaves and feed with liquid-manure. All three of these subjects are so simple to grow that we wish you had enclosed a small portion of each for inspection.

81—**Worms on lawn** (*Bennett*).—Give a good dressing of coal-soot, and keep the lawn well swept and rolled when sufficiently dry. Worms do not eat the Grass roots. We are more inclined to think your lawn is very wet. At this season there are sure to be an abundance of worms, even upon the finest and best-looking lawns.

82—**Treatment of certain kinds of Carnations** (*Novice*).—If you wish to flower the varieties mentioned during the winter, it is advisable to plant them out during the summer, taking up again in the autumn. Or a very good plan is to plunge in ashes out in the open in a shady position to save the trouble of potting up again.

83—**Lemon-tree in pot** (*Cherry-pie*).—Slightly cut back the Lemon Verbena now, and repot in a compost of leaf-soil and loam, with a little sand. Give liquid-manure when the plant has occupied the fresh compost, not before. One ounce of guano to a gallon of water would be suitable. We take it you mean Aloysia citriodora, and not the fruiting Lemon?

84—**Water garden** (*Jas. Brat Brer*).—Your idea of commencing with simple subjects is excellent. We understand the bottom of your pond to be concrete or something similar. In that case you can sink a large pot of loam for the Lily to root into. The Osmundas will grow at the edges if you can afford them a rather wet compost of peat and leaf-mould.

85—**Single Aster** (*Amateur*).—Sow in a gentle heat now, and pot on when about 3 inches high. In June they may stand outside after giving them a further shift into a 6-inch or 8-inch pot. Use a rich loamy compost and keep them free from insects and pinched back a few times until the end of July. Give plenty of weak liquid-manure when the pots are full of roots.

86—**Planting and budding Briers** (*J. H.*).—Briers—that is, hedge Briers—for the formation of standard Roses should have been planted in October or November, but you may still plant dwarf Briers. Budding is best done in July and August. In due course we shall have an article upon this operation in our columns devoted to propagation. Please look out for it.

87—**Lily of the Valley** (*An Amateur*).—It is not at all necessary that these should be grown in a valley, but in a wild state they are more frequently met with in such places, and the botanical name (Convallaria) is given on account of this fact. They will grow well in any ordinary garden soil, but prefer one rather moist and rich, so that yours should be suitable.

88—**Taking Genista cuttings** (*H. Haynes*).—You would not get a good-flowering plant for next winter from cuttings inserted now. Choose short pieces of young growth and insert in a very sandy loam under a cloche or bell-glass. Give a bottom-heat of 70 degs. and take care they do not damp off. Wipe the glass inside every morning. When rooted, pot on and head them back a few times. Any greenhouse will do after the first potting. When you want them to bloom cease to head back and you will soon have flower. The market plants you see are struck in May and grown on in small pots, two or three in a pot. The following year they are repotted and kept well-watered and headed.

89—**Dressing Vines** (*F. C. C.*).—No, we do not advise dressing your Vines with blood at this season, but mix same with soil, or burnt ashes or refuse, and dress in summer when in active growth. Syringe until flowers show, then cease. We do not advise syringing foliage after thinning, but keep house well damped, including soil, floor, and walls. Damp down closing-time always.

90—**Exterminating mealy-bug** (*E. E. Daw*).—Mealy-bug is a terrible pest, and should never be allowed to attack a plant. You must kill by going over them with a soft brush dipped in a strong solution of any insecticide that ordinary plants can withstand. You do not say what your plants are, but unless very valuable we would burn them and restock, taking care that no more mealy-bugs got a hold.

91—**Bulbs for grave** (*J. S. H. C.*).—You are too late for bulbs. Would not the plants mentioned in reply to other query be satisfactory? Plant Snowdrops, Crocuses, Tulips, and Hyacinths next November, and cover with ashes or Cocoa-nut-fibre. We do not quite understand your query, but if you mean will we name plants for you, we shall have much pleasure in doing so upon receipt of specimens.

92—**Gas-tarred frame** (*H. E.*).—Even although you have whitewashed your frame, we would not like to say it will be harmless; but as it is only placed upon a hotbed and not in a hothouse, it may not be so dangerous. Tarred boards are a long time losing their injurious properties to plant life in hothouses. We have known boards tarred ten and twelve years previous to kill almost every plant stood upon them.

93—**Azalea** (*Unfortunate*).—We advise you to turn the Azalea out of the pot and carefully replace the drainage, which must be thoroughly clean. Do not disturb the roots, as it may cause injury to the flower-buds. After the plant has finished flowering and shows signs of fresh growth, repot it into new soil and give clean drainage. Good sandy peat is required for Azaleas. They do not require a rich mixture of soil.

94—**Seeds of hardy perennials** (*S. R. H. G.*).—Sow all in pots or pans and place in a cool frame at the end of March, transplanting all to the open borders early in June. The sixteen subjects you name form a very mixed list, but neither need special treatment. There are several such works, but a good one is naturally expensive. What kind of seed do you want to raise? Do you want a book on hardy flowers, or a general work?

95—**Watering Peach - trees, etc.** (*A Constant Reader, Belfast*).—Peaches in a cool-house will not require much water until growth is more active. We cannot say how often; it depends upon position of house, trees, and weather. We would give a thorough watering before blooms opened. The trees should then be all right for three or four weeks. Place Cyclamens in a cool-house or frame. Give less water, but do not dry off.

96—**Tomatoes** (*Omega*).—We expect your plants have been sown too thickly, and fail owing to lack of vigour. Our advice is to sow three seeds in a thumb-pot. When above ground thin to strongest, and the one left will do well. Keep it close to light and warm. Very little moisture is needed at the start. Market growers place their seedlings over the hot-water pipes until the rough leaf has developed, and give very little moisture.

97—**Lake weed** (*W. Lloyd*).—The name of the specimen of weed sent is Potamogeton, commonly called Pondweed. It is found in a wet situation, close to a river or pond, hence its popular name. The only way to destroy it will be by digging or trenching the ground, and carefully gathering the roots and burning them. The digging or trenching should be continued every season, or when the ground is unoccupied. By so doing it will be got rid of in time.

98—**Treatment of young Fuchsias** (*A.L.O.F.*).—Pinch out the tips of your Fuchsias and get a more bushy plant. New growth should not have been so long yet if you want them for bedding out. Cut them down half way, and pinch back new growths again when 4 inches long. Pot on according to the size of your plants. You can cut back and root the cuttings from Zonal Pelargoniums, and still grow on the old plants fit for bedding.

99—**Plants easily grown by an amateur** (*A. L. O. F.*).—We fear you overlooked reply to previous query, and can assure you we do not think this unreasonable. As it would require rather a long answer, and we have recently had articles from ladies relating to their successes in small greenhouses, may we ask you to kindly look back to them, when you will find just what you want? You will find useful notes upon the subject in Gardening, Jan. 9 (p. 636), and Jan. 23 (p. 666) last.

100—**Marguerite Carnations** (*Novice*).—There is not the least doubt that you have been keeping the Carnations too moist, and in a close house, not allowing sufficient air to keep the plants cool and free from damp. To cultivate Carnations well it is advisable to have them in a special house, where a free circulation of air can be afforded. A front stage of a greenhouse is very suitable where front ventilation can be had. It is a mistake to place amongst other plants, as they are sure to damp off more or less, owing to the moisture arising from other things.

101—**Palms** (*W. G.*).—Palm-seed should be sown in pans, well-drained, with good fibrous loam and sharp sand. Sow somewhat lightly, and cover the seed with about ¼ inch of soil, finely sifted, and plunge in a brisk bottom-heat to encourage quick germination. Spring is the best time of the year to sow Palm-seed. It takes a month to six weeks for all the seed to germinate, some varieties being longer than others. When the seedlings have three leaves prick off into small 60 size pots and place in a temperature from 65 degs. to 70 degs., with plenty of moisture to encourage quick growth.

102—**Leaves of Aspidistra splitting down the middle** (*Kathleen*).—There is no doubt you have potted the Aspidistra too deep in the soil, as the roots require to be on a level with the surface. If you have potted it deep, it causes the leaves to get deformed, and when they expand they split and are disfigured. Aspidistras do not require to be potted so frequently. They will remain in the same pots for a number of years if the drainage is in a good condition. We advise you to give your plant a change for a time by placing it in a warm greenhouse to encourage new growth and to enable it to develop.

103—**Cucumbers for heated frame** (*J. Hurst*).—Cucumbers will thrive very well in the frame during the summer months either by fire-heat or fermentation from manure, but it is not safe for you to think of planting them yet, not until the weather is warmer and the sun has more power to help to keep up the necessary temperature. You would do well to grow plants in the frame during the winter months. A few Chinese Primulas or Cyclamens would do very well, or even a few forced bulbs might be acceptable in the way of Roman Hyacinths or Tulips. We advise you to use it for plant growing during the winter months, and Cucumbers for the summer.

104—**Heliotropes and other blooms unhealthy, vaporisers, etc.** (*L. M. Dreury*).—In all probability you have other insects, and the ants are after these. We have little doubt the unsatisfactory blooming of Genista fragrans is owing to insufficient or too cold water. Either of these will check young bloom; but from your query respecting Zonal Pelargoniums and unsatisfactory results from fumigating, we think you have been using too strong measures. The XL vaporiser is advertised in our issue for Feb. 27, and any florist could procure same from Mr. G. H. Richards, Old Shot Tower Wharf, Lambeth, S.E. You will find full instructions, and we know them to be safe and efficient.

105—**Aspidistra** (*J. Hurst*).—Your Aspidistra has probably been infested with an insect of some kind which attacked the leaves when young. Judging by the specimen sent, we may safely say the plants are in a healthy condition, with the exception of the holes in the leaf. The leaf appears as if it had been eaten into by a grub of some kind, most likely slugs, which will attack the leaves when in a young state, the holes growing larger as the leaf develops. No doubt you have placed the plants in a damp position, where slugs congregate. If so, remove them to a drier place. Soot and lime are very good preventatives against slugs, but it is not always convenient to use them in a conservatory or greenhouse. If this is the case we advise you to carefully hunt for them at night with a lantern.

106—**Climbers for glass porch.**—For some months past I have been much interested in all the information contained in Gardening, and should be very glad of your advice in the following matter. I have a glass porch with glass roof 5 feet 6 inches by 7 feet 6 inches. It becomes so hot, even at this time of year, on a sunny day that the plants inside droop. I thought of training Convolvulus over the glass inside to make it shady. Would this do? If so, what size pots should be used? I thought the pots could stand under the staging on the Fern boxes and the creepers trained through, as they would take up so much room on the staging. I know next to nothing about gardening, and should be grateful for any hints and information.—Porch.

*** *Clematis indivisa would be more suitable than Convolvulus, and can be planted in pots a foot or so over, as you suggest.*

107—**Growing Ferns under greenhouse stage.**—Underneath the stages of my greenhouse I wish to grow some Mosses and Ferns in rockwork. What sorts do you recommend?—R. H. Burman.

*** *Ferns: Adiantum cuneatum, A. Capillus-veneris, A. pubescens, Anapeltis nitida, Asplenium Fabianum, A. Trichomanes, Cyrtomium falcatum, Davallia bullata, Niphobolus rupestris, and Pteris moluccana. Mosses: Selaginella delicatissima, S. denticulata, S. Oregana, and S. variabilis.*

108—**Senecio pulcher.**—I do not find this an easily-grown plant, but its great beauty is worthy of trouble. Being an amateur gardener, I have to pay ninepence for every little plant, and I shall be thankful for a little more instruction about root cuttings. Should the parent plant be taken bodily up and some of its roots cut off and potted, or the mould taken away from plant in ground and some stray roots cut off? What length of root potted, and the whole length potted, or only a portion, and any left above the mould, as it were, to shoot from?—C. S.

*** *We cannot understand your difficulty with this plant, as it has a vigorous habit and is perfectly hardy. Almost any portion of root will grow, or you can root cuttings of the top-growth in a compost of sandy leaf-mould. Lift up the plant and divide it carefully, potting each piece and giving them the aid of a cold frame for a few weeks before transplanting once more.*

109—**Violets not flowering.**—I have a number of Czar Violets, but they did not flower in the autumn. What treatment is required?—H. G. B.

*** *Probably your young plants were not inserted soon enough last spring, and this, with the dry season, would not have given them sufficient growth to flower freely in the autumn. If the plants are young they will flower very soon now, and need no special treatment. Plant out fresh runners by the early part of April, and cut off any new runners which may spring from these. You will then get some autumn as well as spring bloom.*

110—**Best dwarf half-hardy annuals.**—Will you tell me if a dozen very dwarf half-hardy annuals would do to lay out a flower garden which has very small beds, and surrounded with Box-edging, kept about 6 inches high? Last year the plants I planted grew over and quite hid the box.—Subscriber.

*** *You might raise Asters, Tom Thumb Dahlias, Candytuft, Virginian Stocks, Dwarf Nasturtiums, Margaret Carnations, Ten-week Stocks, Mimulus, Nemophilas, Petunias, Verbenas, and many more. Procure some florist's seed list giving heights and colours.*

111—**Daisies on tennis-lawn.**—What is the best way of getting rid of Daisies on a tennis-lawn? Mine was laid down last year, and part of the lawn now is a mass of Daisies. Several single roots I have pulled up, but in part of the lawn it is impossible to get them all up this way. Is lawn sand any use? If so, should it be spread now, and new seeds sown later on? Will any kind of manure do good?—W. R. K.

*** *Use a Daisy-lifter for the largest crowns, and then sow lawn sand at any time now. Sow some White Dutch Clover early in April, mixing the seed with some light soil, and spreading the whole evenly as a dressing. Wood-ashes are also good, but ordinary manures naturally only feed the Daisies as well.*

112—**Making greenhouse bright.**—I have a small lean-to greenhouse 14 feet by 6½ feet. It has a Vine which covers the roof, and we heat it with a coke stove. The floor is cement. Will you tell me the best way to make it nice for a small amount? The sun comes in only at one end and shines part way along the glass side.—L. L. G.

*** *There is nothing you can grow beneath the Vine during summer, but you could have Chrysanthemums in winter and bulbs, Primulas, and such during early spring before the Vine breaks too much into growth. Propagate Chrysanthemums now, sow Primulas in May, and pot bulbs from August to November. You will need a cool frame or pit. We would take the Vine out and use flowers alone*

113—**Sowing Chinese Primula seed for flowering at Christmas.**—Can you please tell me the best time to sow Primulas for Christmas flowering and Cinerarias and Herbaceous Calceolarias for March flowering? Also, do any, and, if any, which of the above flower better from the old plants than from fresh seed, as I have frequently heard people state that they get the best results from two-year-old plants?—Primula.

*** *All of these are best from one-year seedlings. Sow the Primula now, and the Cineraria and Calceolarias during July. You must keep them clean from insects from the first, and yet not coddle in any way.*

114—**Marguerite Carnations.**—I have some nice plants raised from good seed sown last spring in pots in greenhouse, temperature 45 degs. to 60 degs., but all the flower-buds wither when half formed. Can you oblige me with any hints as to treatment of plants from time of sowing?—F. M. K.

*** *We can only suggest you did not pot on the plants soon enough. They need repotting or transplanting to their permanent quarters outside as soon as the seedlings can be handled. If sown now and transplanted to the open border, or potted on at once, they will bloom well this summer. We prefer to treat these as annuals.*

115—**Outdoor Tomatoes.**—Would you kindly tell me how, when, and where to plant outdoor Tomatoes?—Ignorant.

*** *You cannot plant outdoor Tomatoes before all fear of frost is past—not, in fact, until May is well advanced—unless you cover at night. The best place is against a south wall or an open, sunny border.*

116—**Plants for chalky soil.**—Would you please through the columns of your valuable paper give me a list of names of plants suitable for a chalky soil?—H. E.

*** *These are so numerous that we must ask you to repeat the query, and state what you want, whether climbers, trees, flowering shrubs, herbaceous plants, etc. You see how necessary it is to be explicit if we are to help you, and not give a reply that would contain much of little service to you.*

117—**Hepaticas.**—My Hepaticas have become very small, both blue and pink. Should they be divided after blooming? Can I raise from seed to bloom next year if sown early?—A. F. B.

*** *Hepaticas do not like being disturbed and divided. We do not think you would get seedlings to flower next season, seeing your other plants are not prospering. Sow soon, and after the first pricking off avoid further disturbance as far as possible.*

118—**Japanese Honeysuckle.** — When should Japanese Honeysuckle be trimmed?—F. H. M.

*** *Trim the Honeysuckle at any time now, but do not cut away more than can be avoided of last year's growths.*

119—**Cleaning glass roof.**—What is the best method of cleaning the glass roof of a conservatory discoloured by weather and soot?—F. H. M.

*** *You should syringe freely, or wipe it over with soapy water. A little paraffin in this will move the settlement more freely, but we imagine you must find some method of wiping it with a cloth or hair broom; a heavy shower would move a good deal of it.*

120—**Treatment of creepers.**—I shall be much obliged if you would tell me if the creeper Eccremocarpus scabra should be cut back or left entirely alone? I have one 7 feet or 8 feet high on a wall, two or three years old, and it is very bare at the bottom, young shoots coming out at the top only. I also should be glad to know the same about the creeper Cobæa scandens. If you would kindly answer in your valuable paper I should be greatly obliged.—Mary C. Woodmald.

*** *Only remove the dead tops of Eccremocarpus scabra. It is not often the top survives our winters outside, but yours will be green the whole length again with growths from the roots. Sow Cobæa scandens in gentle heat now, and pot off ready to turn out next June. Do not give it a rich soil, or it will grow too luxuriantly to flower freely.*

121—**Lilium auratum in pots.**—I have planted a bulb of Lilium auratum in a 7-inch pot in a mixture of loam, leaf-mould, and sand in equal parts, and buried the pot in ashes. Can you please inform me if I have done right?—Archie Ley.

*** *You have done right with your Lilium. It is well to give them an 8-inch pot, and only about two-thirds filled with compost. As the growth progresses place more rich soil, or even pieces of very old cow-manure, around the bulb. They are hungry feeders, and either need this or plenty of liquid-manure when about a foot high. Write to publisher at this office about the plate.*

122—**Pruning standard Rose-trees, etc.**—I planted some standard Rose-trees last autumn. The shoots are 18 inches in length, four and five shoots to a tree. Will you please say how many buds from the start I am to prune back to? Also please say what should be done with Christmas Roses after they have done flowering in pots in greenhouse? Will they throw up any more flowers this year?—Ben Groves.

*** *You will see full instructions upon pruning Roses in the articles now running. Place the Christmas Roses in a cool-pit or frame until May, then plunge outside, giving them water while in leaf. You will not get more bloom this season, but if housed early may have some about Christmas and onwards.*

123—**Streptocarpus.**—Being a reader of your valuable paper for the past six years, I should like to ask you to favour me with the culture of the Streptocarpus, as I have got a 5s. packet of seed, and should like to prosper with it, the seeds being so small? I have stove, greenhouse, and frames, and a propagating-frame, with heat attainable to 70 degs. or 75 degs. without sun. The treatment of the above will be thankfully received, not by me alone, but others. Thanking you for past favours—J. W. B., *at B. C.*

*** *Sow the seed at once. If you look at the index of our last volume you will see the treatment of these and Gloxinias, their wants being identical. An ordinary greenhouse temperature is sufficient. Such small seeds should not be covered with soil, but kept dark until germinated.*

124—**Repotting Maiden-hair Ferns.**—I have just had my Maiden-hair Ferns repotted, and watched the gardener doing it. When the plants were taken out of the pots fine hair-like roots were wrapped all round the soil from top to bottom, and all these he unceremoniously tore off to within about 4 inches of the crown. Will you please tell me if he did right, as I cannot help thinking such wholesale measures must be wrong. When questioned about it he replied: "It'll do 'em good."—Observant.

*** *Your gardener was quite right. How could he give new soil otherwise? Ferns will bear a great proportion of their roots being removed, and in your case the plants had evidently exhausted the compost.*

125—**Gathering flowers.**—Will you kindly inform me in Gardening whether it is detrimental to bulbs, such as Snowdrops, Lilies of the Valley, etc., to pick the flowers by pulling them out perpendicularly instead of cutting or breaking them off. The former method gives one much longer stalks, but as the last inch or two is quite white and apparently joins the bulb, I feel doubtful as to the expediency of this method, although there appears to be little danger of pulling the bulbs themselves out of the ground.—E. J.

*** *It is far best to pull out these flowers. If cut there is much loss of sap, and the bulbs thereby weakened. When pulled out the pores are not so fully opened; in many cases not at all.*

126—**Planting small corms of Gladiolus The Bride.**—Last spring I tried to force (very gently) some Gladiolus The Bride, but very few flowered. I put the boxes outside, and in autumn, when foliage died off, dried them off, finding a quantity of small bulbs. When should I replant, and is there any chance of flowers next season, 1898? Also will Jonquils, sweet-scented, and Campernel and Narcissus ornatus and Burbidgei now flowering in greenhouse flower again in pots if planted in open to ripen? Bulbs never stand the winter in my garden, so I am obliged to take them up.—Miss Bowes.

*** *Your Gladiolus should have been potted before now, but will still flower if grown very steadily. You can flower them year after year. Pot in November next time, and keep them under ashes, similar to Hyacinths and Tulips, until they have made 3 inches of growth. You can grow all of the other subjects in the same way; but assort the bulbs when potting, as only the best will flower satisfactorily, while the smaller will make by far the best bulbs for the succeeding spring's blossom.*

127—**Fruit dropping off Pear-trees.**—Two years ago I removed some Pear-trees, including Beurré Diel, Easter Beurré, Winter Nelis, and Autumn Bergamot, from one garden to another. They were then about five years old. They have grown considerably, and look perfectly healthy. Last spring they blossomed abundantly, and a great deal of fruit set; but shortly after all dropped off from no apparent cause. They are now again full of bud, and just beginning to burst. The soil is rich and deep. Can you kindly suggest anything to prevent this?—West Somerset.

*** *There seem to be two causes for your failure. In the first place, your trees were not sufficiently established to carry fruit, and in the second it was so very dry both in the early part of last season and the year previous. Had you given them one or two thorough soakings of weak liquid-manure many fruits might have held. Did you experience a sharp frost at that time? Pears are very susceptible to frost late in the spring.*

128—**Seedling Orange-plants.**—I have three small plants grown from Orange-pips, each in a 3½-inch pot. They are healthy plants, but they do not make much progress. I wish to grow them as evergreens, and I shall be much obliged for any information how to treat them so as to increase their growth? They are in a small lean-to greenhouse, facing south-east, from which the frost is just excluded.—Amateur.

*** *You have scarcely enough heat to grow them freely. Pot on into a compost of leaf-soil and loam in equal proportions, adding a very little sand and well-decayed manure.*

129—**Plants for shady place.**—I find in my porch a large number of plants do not succeed owing to there being scarcely enough light. What plants, foliage or flowering, would you recommend me to try? The porch faces east. Zonal Pelargoniums are a failure. Fuchsias do only fairly. The position seems to suit Castor-oil-plant well.—G. W. R.

*** *You would succeed better with Ferns, Begonias, Aspidistra lurida, and such hardy room Palms as Latania borbonica and others. Heliotrope would do fairly well, but no flowering plants thrive satisfactorily in a badly-lighted porch.*

130—**Passion-flower.**—Does Passion-flower bloom the same year as the seed is sown?—Qn. An.

*** *No; but if sown now and grown on you may get a fairly good plant that will bloom the following season.*

Catalogues received.—*Herbaceous Perennials and Florists' Flowers.*—Messrs. E. H. Krelage and Son, Bloemhof Nurseries, Haarlem, Holland.——*Hardy Florists' Flowers.*—Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, N.——*Agricultural Seeds.*—Messrs. Fotheringham and King, Corn Exchange, Dumfries.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*F. F.*—Lastrea patens.——*Sartor.*—One of the many Polystichums, but which we cannot say from the specimen sent.——*Polly.*—Acacia dealbata; it is an excellent cool greenhouse or conservatory shrub, and very easily grown, but it is not hardy.——*W. Moss.*—We cannot be certain of the root sent, but blieve, from your description, it is one of the Gypsophilas. If you send a few of the flowers later on we will name it for you.——*Selwood.*—Name of plant is the Lake or Pond-weed (Potagometon). See reply to similar query for "W. Lloyd."——*G. P. T.*—Myrsiphyllum asparagoides.——*Hannah More.*—1, Dennstedia dissecta; 2, Pteris serrulata cristata; 3, Lady Fern (Athyrium Filix-fœ.); 4, Adiantum Sancta-Catherina.——*Coney.*—Megasea cordifolia, sometimes called Saxifraga cordifolia. It belongs to the Rockfoil (Saxifrage) family, and is a beautiful plant, its leaves assuming pleasing shades of colour.——*L. D.*—The name of the zoophytes are Plumularia falcata and P. abietina. Animals, not plants.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Constant Reader.—You cannot do better than get Molyneux's "Book on the Chrysanthemum," price one shilling and threepence, post free, 171, Fleet-street, E.C. ——*Amateur.*—A knowledge of Latin is not necessary for a gardener, but, of course, it is helpful. It is more important, however, to grow flowers, fruit, and vegetables well. About eighteen shillings a week is the average wage of a journeyman gardener. —— *Jack, Amateur.*—Barron's "Book on the Vine" will suit you well. Price is five shillings and sixpence, post free. It can be obtained from the author, A. F. Barron, The Acacias, Sutton Court-road, Chiswick, London.

POULTRY.

Preserving eggs.—On page 11, March 6th, I see you recommend salt absolutely dry in which to pack eggs. Kindly allow me to say that my experience is quite against this instruction. I always find that very dry salt sucks the moisture from the eggs, and in a few months produces a considerable vacuum in each; whereas salt just dry enough to be friable, and kept in a cool place, slightly damp rather than dry, has proved most profitable; also, I pack eggs standing on the pointed ends. If placed on their sides the yoke will sink through and cling to the shell, making a "spot." I use boxes about 4 inches deep (grocers generally have plenty to sell cheap), pack in single layers same day as laid, never letting the eggs touch each other, and find them creamy fresh after four months and nearly as good at eight months. Plenty of salt must be used.—J. I. P., *Buckhurst Hills, Essex.*

Number of Fowls for poultry-yard *(L. E. L.).*—You appear to have an excellent poultry-yard, but it would not do to keep so many Fowls in it as you suggest. It is so important to avoid overstocking a poultry run, and 150 adult birds should be the greatest number you should venture to keep at one time. If, however, you could give your Fowls the run of the field you speak of, it would benefit them greatly, and you would then be able to keep a larger number. The chickens would, also, do better in the field than if confined to the poultry-yard, if care be taken that they do not wander in long, wet Grass in rainy weather. You would find it of great advantage if your fattening coop were divided into two compartments by means of a sliding-door. Put up twenty chickens at a time to fatten, and feed them alternately in the two compartments. After the first meal in the day they can remain in the compartment in which they were fed till the next meal is ready in the adjoining compartment, when the sliding-door can be withdrawn. By this means the chickens are shifted backwards and forwards at each meal, and the disadvantage of their constantly remaining upon the same floor is avoided. You may feed the fattening birds three times a day at regular hours, removing what is not eaten as soon as each one has taken sufficient. The feeding-troughs should be perfectly scoured so that the food may be as fresh and sweet as possible, and a good supply of water provided. Buckwheat-meal mixed with skim milk is the best food for fattening poultry, the best substitute for this being an equal proportion of Maize-meal and Barley-meal. This food should be mixed to the consistency of a crumbling paste. A little chopped green food should be given daily, such as Cabbage, Lettuce, or Grass, and some fine gravel placed within reach of the Fowls to assist digestion. It is well to remember that Fowls that have been well and regularly fed from their chickenhood are, with very little extra attention and feeding, always ready for the table, and their flesh is richer in flavour than are those that have to be fattened up from a low condition. In from ten to twenty days fattening ought to be completed, and as soon as sufficiently fattened Fowls should be killed, as they cannot be kept fat, but soon begin to lose flesh.

BIRDS.

MANAGEMENT OF CAGE-BIRDS.

The Brambling or Mountain Finch (Fringilla montifringilla).

Although the Brambling has no musical pretensions, it is a favourite as a cage-bird on account of the beauty of its plumage. It is a native of the mountain districts of the northern regions of Europe, and visits us during the winter. It exceeds, somewhat, the Chaffinch in size, measuring 6¼ inches in length, of which the tail measures 2½ inches. The male of this species in his summer plumage is a very elegant bird, the head being black, throat and breast orange-fawn, the back beautifully marked in black and grey, the wing-coverts black, tipped with fawn, while bars of yellowish-white cross the wings, and the tail is black and somewhat forked. In winter its plumage is not so bright, and the black on the head is mottled with yellowish-brown. The hen is somewhat smaller than the male, and is duller in all the tints of her plumage, which does not vary throughout the year. In their winter visits to this country, these birds resort by preference to plantations of Larch and Beech, where, during some winters, they may be seen in considerable numbers. With proper care and attention, the Brambling will live long in a state of captivity. It will eat all kinds of seeds, but Hemp-seed must be supplied sparingly, as it has a tendency to fatten. In its wild state this bird lives upon a mixed diet of seeds, berries, and insects, and in captivity will enjoy better health where a like variety of food can be supplied. A good-sized cage should be provided for it as it likes plenty of exercise, being of a restless nature, never becoming tame and familiar, and for this reason is not very suitable as an aviary bird, as by its restless, boisterous behaviour, it is liable to molest, wilfully or otherwise, its fellow inmates.

Parrot plucking its feathers *(East Kent).*—It is very difficult to effect a cure in such a case. Many birds will strip their fellow-captives of their plumage, but the Parrot almost stands alone in the deplorable habit of self-mutilation, which some will carry so far as to strip themselves of every feather they possess within reach of their beak, with the exception of the large quills of the wings and tail. Oftentimes want of occupation—lack of something to nibble at—will give rise to feather eating. Give your bird a piece of soft wood or a bundle of twigs to exercise its beak upon, and afford it healthy occupation (in their wild state Parrots eat much woody fibre), and try smearing the bird with vaseline. See that the food supplied is not of a too stimulating nature. Avoid animal food and sop, but give boiled Maize, Hemp-seed, Canary-seed, and now and then a little ripe fruit. The Maize must be freshly prepared daily, as it soon becomes sour, and a good supply of grit must not be forgotten as an aid to the digestion of the food; but the main point is to keep the bird occupied and amused.

Wireworms(?) *(F.H.A.).*—The creatures you sent are not wireworms, but one of the snake millipedes, Blanjulus guttulatus, the spotted snake millipede. Fallowing the ground for some months, dressing it with gas-lime or hot lime, and keeping it free from weeds, and broken up so that the birds can get at them, is the best way to treat ground that is badly infested with them. There is no reason why you should not do one part of your garden first and then another; but I should be careful not to leave an infested plot next to a plot which you had begun to crop again.—G. S. S.

GARDENING ILLUSTRATED.

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ROSES.

PRUNING ROSES.

Pegged-down Roses in groups or beds.

There are a large number of varieties, from many classes, that are well suited for this form of culture. Such long and upright growers as Margaret Dickson, Gabriel Luizet, Gloire Lyonnaise, and others are never better seen than when pegged down. They need a special style of pruning in this form; while even as bushes under ordinary culture it is better to follow out the same method as far as practicable. Similar to the extra vigorous climbers, we get the best quality and greatest number of blooms from long rods made the previous season. These are fastened horizontally about a foot from the ground, and as new growths break from almost every eye, the flowers are carried upon stems of uniform height or length, and have a really grand effect. If such rods were left unsupported they would inevitably break with the weight of foliage and blossom as the season advanced, while if they were tied to upright stakes only a few of the eyes would produce a presentable blossom. To prune them back to the normal length adopted for ordinary growers, such as Baroness Rothschild and Fisher Holmes, would result in a few good blooms and several flowerless shoots that would be scarcely strong enough for future pegging down, nor would they lend themselves to this method so well as shoots taken direct from the base. Pegging down secures a quantity of very good blooms, produced more or less simultaneously and making a grand show. Very few of the varieties most suited for pegging down would produce many more flowers upon the same shoots during the rest of the season, so that it is better to secure a good and heavy crop; then cut away the growths and leave the healthiest-looking breaks from or as near to the base as possible, these latter to form more growths for future pegging down. This is what is meant by "summer pruning" of Roses. In the spring the class now under notice only need their middle growths thinned and shortened and the unripened tips of long rods removed before pegging them down.

Short-growing bedding Roses.

We have another class of Rose that is particularly useful for beds. These are the dwarf and compact growers. Most classes or sections provide more or less of these. We have the short-growing Chinas, Souvenir de la Malmaison from the Bourbons, Gustave Piganeau and Baroness Rothschild from the Hybrid Perpetuals, Lady Mary Fitzwilliam and Mrs. W. J. Grant from the Hybrid Teas, and any others of similar habit. All of these should be planted thickly. In early spring they may have all thin and weakly growths cut out entirely and the stronger shoots shortened back a little more than two-thirds.

Standards and weeping Roses.

When the normal growers are used as standards they need similar pruning to the same varieties under culture as dwarfs, excepting to cut them a trifle less hard. But our full-sized standards are of most use when supporting strong growers, and especially when they are allowed to droop or weep with the weight of blossom and foliage. The Austrian and Persian Briers, also any of rather long and slight growth, are very pretty in this form as specimens upon the lawn and centres of beds used for summer bedding plants. Thin out old and short wood as far as possible, leaving the longest growths to droop over and form small cascades of blossoms.

Roses in the shrubbery and old hedges.

Among mixed shrubberies and flowering shrubs Roses should always have a place. Much the best varieties are those suited for pillars and arches. Do not prune these much, and always leave the long growths. I think they are far more showy when the long shoots are allowed to retain their natural position as produced. Like all shrubs producing long growths minus blossom the first season, Roses flower throughout their entire length the second year, and are then a grand addition to a mixed shrubbery. Old hedges may be renovated with the Ayrshires and kindred growers, also the Hybrid Sweet Briers, and these never need shortening back, but their swaying growths secured to the stronger parts of the hedge. There are few prettier objects than an old Thorn-hedge filled in with suitable Roses, and their shoots allowed to ramble at will wherever space can be given.

Ordinary growers need more or less pruning according to their habit of growth. The long growths of Duke of Edinburgh, Bardou Job, and Crimson Rambler should be left almost intact, but shorter shoots cut back rather more than half way. More compact growers, such as Mrs. John Laing and Marie Van Houtte need their strongest shoots cut back half way, the weak ones entirely removed from the centre, and any of fair vigour near the outside cut back fully two-thirds. Weaker growers may be harder still. This is just where many amateurs err so seriously. They leave the greater part of weak growers, and cut back far too much of the vigorous varieties. A naturally weak grower cannot do justice to but few eyes; while if we confine an extra vigorous habit to a few we merely cut away the most valuable wood, and get a repetition of similar growth. If you read the previous notes you will see how this theory follows all through the pruning of Roses.

When to prune.

The end of February or early in March is quite soon enough for Hybrids and hardy Teas in warm localities; while the end of March is full early for the general collection of Teas and various classes in the same favoured positions. In the midlands, a fortnight later may be taken as the most suitable time; a week later still being taken for North Britain and Scotland. This is speaking generally; but, of course, each one must use a little discretion according to their own surroundings.

A. Piper.

ROSES IN THE UNHEATED GREENHOUSE.

Roses in conservatory or cool greenhouse are commencing to grow freely, and require careful attention respecting pruning, feeding, and their general culture. There are no climbers more suited for these structures than Roses, especially such as Maréchal Niel, always a beautiful Rose where a little protection can be afforded, and seldom being satisfactory outside. Now although our plants are showing new growths, we must not forget that for a little while yet we may be subject to a spell of cold, and if not so severe and extreme a change as that experienced a few weeks ago, it may still be sufficient to place an unheated structure dangerously close to freezing-point so far as young Rose growth is concerned. Then, again, in so many cases our climbing Roses are turned into a side border, from whence their roots are certain to ramble outside. Here, of course, the temperature of the soil they occupy will not be in accordance with that inside, nor with the forward growth, therefore to hurry the plant is almost always courting disappointment. Give as much ventilation as possible, and do not water freely yet.

In a lean-to conservatory attached to the dwelling we often wish to grow a Rose upon the house-wall. There is not often a border of soil suitable for them, or perhaps the whole floor of the conservatory is tiled. In the former case we can assist the Rose very much by planting it in a wooden box minus any bottom. This will afford more soil for roots to revel in, for I need hardly say that the border proper is seldom an ideal root-run for Roses. A large box may also be stood upon four thin bricks, a few holes being bored in the bottom, and drained in the same way as if in a pot. There need be no objection on the score of appearance, as the box can be so easily and prettily covered with Cork-bark, in the crevices of which greenhouse Mosses and small Ferns would be a delightful feature.

Pruning is important. I am alluding now to Maréchal Niel, William Allen Richardson, and other climbers. I would add Climbing Niphetos and Reine Marie Henriette, and discard others under glass for walls and roofs. These four give variety of colour, and are always satisfactory where Roses can be grown at all. Retain all of the long rods made last season, and simply thin out laterals and weak growths. If you cut away the long rods you sacrifice the best, and oftentimes all but a stray flower or two. When these rods have flowered cut them down almost to the bottom, and encourage more that will then be breaking from or near that point.

It is not absolutely necessary to have one particular compost; anything of a rich and not too heavy nature will do. Water must be applied liberally while in growth, and especially so while the plants are just showing flower-buds, and again when the young rods from the base are about 2 feet long. Weak liquid-manure is a great help at these stages, particularly the last, when the compost will be partly exhausted. Give it weak, and you are safer against harm. To sum up, never hurry; never prune away long growths until after they have flowered; use

weak liquid-manure liberally, and watch carefully for and take early measures against insects. If you object to animal liquid-manure use a slight surface-dressing of some artificial fertiliser that has been long enough on the market to guarantee its qualities. It is also an excellent plan to leave a few inches of space between the top of the box and crown of your plant. This allows of valuable mulchings as time goes on, and all Roses enjoy a little fresh soil around their base. P. U.

Best half-dozen climbing Roses.—Will you advise me as to choice of a half-dozen climbing Roses to cover lattice-work 10 feet high and 2 feet 3 inches wide? Position south. Good loam and clay soil.—E. A. Chapman.

*** Bennett's Seedling, William Allen Richardson, L'Idéal, Climbing Perle des Jardins, Fortune's Yellow, and Reine Marie Henriette will give you a good change of colour, and all grow very strongly.

ARTIFICIAL MANURES.

Under this heading in your issue of March 6, you insert what may be misleading to some of your readers, and with your permission I should like to point out that kainit is valuable for the sulphate of potash it contains.

Kainit contains about 23 per cent. of sulphate of potash, of which 10 per cent. to 12 per cent. is therefore pure potash, and sulphuric acid (with other alkaline matters) is present. The manurial and commercial value, however, is solely based on the unit of potash. It is a natural German salt.

Nitrate of soda is rich in nitrogen (that is, ammonia in equivalent, about 15 per cent. nitrogen, 19 per cent. ammonia), not potash. There is no potash present. The application to garden crops should be with the greatest care, or else coming into contact with the root or plant and finer fibrous portions the whole plant is easily liable to being burnt up. Nitrate of soda should be mixed with a little fine earth and not dressed within several inches of the actual stem from the root.

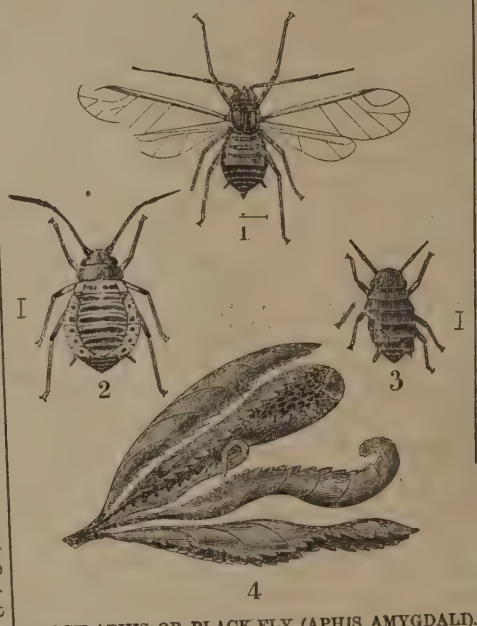
Your interesting articles are so widely read that I am sure you would not wish to have your readers wrongly informed on matters which are known by all possessed of a chemical knowledge. E. P. G.

Treatment of Camellias (*Camellia*).—You will have some difficulty in inducing the tops of your old Camellias to emit roots, especially if little wood has been made during the past few years. It will be impossible and useless to attempt to get the very old wood to throw out roots. The younger and softer wood may respond. The tops should be bent low down and a tongue-cut about an inch or so long, made on the undersides of the branches and a little fine soil pressed into the cuts; after which they should be securely fastened in the soil with strong pegs and well watered. The soil must never be allowed to get dry, otherwise the chances of quick root formation will be minimised. The best way of getting up a stock of plants is by grafting. This is usually done towards the end of summer, the stock used being the old single-flowered species. Side-grafting answers well. It is simple and effective. When grafting has been performed, the scions should be placed in a close case in a warm greenhouse, the temperature being kept at about 55 degs. to 60 degs.; an occasional syringing overhead will be beneficial. They must be shaded from the sun. When a union is completed—which will be in a few weeks' time—they should be stood on the side stages of the house. The syringe may now be used more freely. Another method of propagation is by mossing the branches; a piece varying in length from, say 1 foot to 2 feet can be mossed. A cut should be made in the stem, and a little damp Moss and silver sand pressed in and round the cut, after which it should be tied and kept moist. When the roots begin to push through the Moss the tops should be taken off and potted in soil without removing the Moss. If protected from the sun for a short time, and not allowed to want for water, they will soon root into the new soil and make headway.

GARDEN PESTS.

THE PEACH-APHIS OR BLACK-FLY (APHIS AMYGDALI).

This pest is only too well-known to all Peach-growers, as Peach and Nectarine-trees often suffer very much from the attacks of this insect. Many persons suppose that it is only one species that infests their trees; this, however, is a mistake, as there are really three species which do so; this, though interesting to the entomologist, is of little importance to the fruit-grower, as the habits of all the species are the same, and they may be killed by the same means. I have chosen the commonest and earliest species that appears in the spring for description and illustration. The young leaves are often attacked as soon as they begin to open, and the continual drawing off of the juices by the aphides soon causes the leaves to curl up; this curling of the leaves unfortunately provides the insects with a very efficient shelter, so that when the attack has lasted for some time, syringing with insecticides is not of much use, as few of the insects will be reached when trees are in this condition. The best way is to fumigate them, but one smoking is not enough. Three should be given



PEACH-APHIS OR BLACK-FLY (APHIS AMYGDALI).

Fig. 1, winged female (magnified); 2, wingless female; 3, larva; 4, Peach-leaves attacked by Peach-aphis.

with an interval of two days between each. Care ought to be taken, however, that the foe should be detected before the leaves become much curled. As the first of these insects which appear in the spring are hatched from eggs which were laid near the buds in the autumn, if these eggs can be destroyed the trees will not suffer from this pest. To effect this, in the early spring unnail the trees and scrub them well with soft-soap (2 lb. dissolved in three gallons of hot water). When cold add one quart of Tobacco-water; or paint the trees with the following ingredients: 1 lb. of flowers of sulphur, 1 lb. of Scotch snuff, 1 lb. of quick-lime, 1½ lb. of soft-soap, and ½ lb. of lamp-black, mixed with enough water to make a thick paint. Re-nail the trees with new shreds, or with the old ones well boiled. If these precautions have not been taken, as soon as the aphides show themselves, pick off any infested leaves and burn them, or dip the shoots into the recipe first mentioned, or into Tobacco-water, a solution of Gishurst compound, or soapy water, or dust the young shoots with snuff or Tobacco-powder; the extract from 3 oz. of Quassia-chips in a gallon of water is also recommended as a good wash, and so is water at a temperature of 120 degs. Fahrenheit, to every gallon of which has been added a wine-glassful of paraffin-oil, well mixed, and kept so. Whatever means are used, the trees should be syringed with cold water the next day, and if any of the aphides are still alive another dose should be given. The economy of these insects is very similar to that of the Rose-aphis. They are not very particular as to what part of the tree they attack. They are usually found on the leaves, and on the young shoots, but I have found them on the young fruit, and on the hard wood where a branch had been cut off, feeding on the softer part of the bark which had been exposed. This species also attacks the shoots and leaves of the Cherry. The winged individuals are about 1-10th inch long, and measure ¼ inch across their wings. The colour of this insect varies very considerably, some specimens being much darker than others; the head and forebody are generally dark brown or nearly black; the body yellowish, with four dark brown or black spots on either side; each of the first three joints are marked with a dark band, and the others are nearly covered with a patch of the same colour; the legs are yellow, with black tips to the joints and feet. The wingless females (Fig. 2) are hardly so long as their winged sisters, but are considerably broader in proportion; they also vary very much in colour, some being brownish-yellow, with various brown or black bands, others being nearly if not quite black. The immature individuals (Fig. 3) are reddish-yellow in colour. G. S. S.

A plague of flies (*C. Wilson*).—Without seeing the flies I cannot say anything very definite as to where they come from or what they are. Fumigating the room with sulphur would certainly kill them, but unless you knew where they came from they would, in all probability, appear again, or rather others of the same kind would. Please send a few specimens, and I shall be able to tell you more about them probably.—G. S. S.

Black slugs in garden (*Egomet*).—I have never heard of Hellebore as a remedy for slugs. I presume it would be scattered over the plants they are likely to attack. I do not think Hellebore would in any way injure the plants. Hellebore is a very poisonous substance and should be used with care. I would recommend you to lay traps of pieces of Cabbage-leaves, or bran laid upon pieces of slate, and search for the slugs with a lantern after dark. They are easily killed by cutting them in two with a knife across the shield which is just behind the head. As regards wood-lice, hot water is a grand remedy where it can be used. Bricks, tiles, or pieces of slate laid on the ground or at the edge of a path and not moved for a day or two make other good traps. I turned over a brick the other day which had laid on my garden path for a few days untouched, and there was a fifteen regular colony underneath of all sizes, and some over twenty in number.—G. S. S.

Name of insects (*G. L. F. S.*).—I am sorry to say that your box, when it reached me, was perfectly empty. Daffodils kindly send some more specimens.—G. S. S.

Daffodils is attacked by insect pests (*L. Cambell*).—From what you say, the pest that attacks your one of the plants is evidently a night-feeding one, and probably plants over devils, or it might be a mouse. Look the night with a lantern.—G. S. S.

Francoceas.—Several species of Francoceas are plants for amongst the most showy of stove latter days flowering at this season, although in these several fine they have been rather neglected. Of the best species, F. confertiflora is probably flowers, others may be found with larger abundant none grows so well or has such diameter foliage. The flowers are 2½ inches in cina is of a deep violet-purple. F. calyvariety another showy plant, especially the flowers known as grandiflora. This variety has rich purple shes across, the colour being entirely ing the except for the ring of white surroundgreatly with of the small tube. Species not and F. similar from the above are F. eximia a purple eniana, both having large flowers of Francisc violet-purple colour. All these flowers have the same peculiarity—viz., the purple tge with age from rich and vivid bear flow ite, and a single plant will often the two showing every gradation between to brillia ncisceas are averse to full exposure so when in nlight at all times, but especially hasten th om. The direct rays of the sun aching process considerably.

THE KITCHEN GARDEN.

THE ENDIVES.

Of late years the Endive has been more grown, and few plants are more useful from October to April than the Broad-leaved, or what is now also known as Round-leaved Batavian, the variety illustrated. This is the best of the type, the most useful, and the hardiest, thus making it a desirable amateur's variety. There are quite a dozen other kinds, most of which are curled-leaved. These, though most showy for the salad bowl, unfortunately are not hardy, and are thus only useful for autumn supplies, and for a mixed salad they are valuable. The Endives are much neglected by amateurs, and this is easily accounted for, as so few know the value of the one illustrated, and many of the others have so short a season that they cannot be termed profitable, and no one cares to have their plants destroyed by a single night's frost, as many have no convenience to shelter the plants. Many who grow Lettuces in quantity never give Endives a thought, and here I would remark that the latter are equally valuable. Indeed, many persons consider the Endive bitter, but that makes it more palatable. The value of the Endive is its free growth, as it soon matures, and may follow a crop for which the ground was well manured, but it may be well to give a few simple notes regarding culture, with a view to a long season and the best varieties.

The Broad-leaved Batavian Endive. From a photograph sent by Mr. Tallack, Liveremere Park Gardens, Bury St. Edmund's.

Varieties.—The Batavian section is the most hardy, and the plants are best for use from December to April. If sown in July and late in August, good plants are obtained for the season named. Of course, in northern localities it may be advisable to sow and plant a little earlier than the dates given, but so much depends upon the soil and care given. One need not think that the Endives are any more difficult to cultivate than Lettuce, but the plants for spring use require to be grown as hardy as possible. An improved variety is the Round-leaved, which is even superior to the Broad-leaved. This is a large grower and the leaves fold in at the centre, thus it blanches more readily and is of first-rate quality. There are fewer outer leaves and little waste, so that I give it a first place as our most useful winter variety. The new Winter-leaved Lettuce Endive is a splendid form for all amateurs who like salads all the year round; the leaves are a rich green colour, and large; it is one of the last to run to seed—a special point worth noting, as this variety prolongs the supply at a season when salads are not plentiful. This variety, with Mustard and Cress and Witloof Chicory, which are so easily grown, are excellent substitutes at a season when Lettuces are not to be had, and can be grown by everyone at so small a cost. There is a White Batavian, but I do not advise its culture, unless as a summer variety. At that season the Curled-Leaved kinds are so good that it is not required.

Of the summer or early autumn Endives there is a wide selection: The Digswell Green Curled is excellent, a large leaf, and blanches freely. Another very fine new green curled is Model; indeed, it is as valuable as the Batavian for later use. Model is of a beautiful shape, well curled, and of a stouter form than the older kinds, and a grand salad plant, being so ornamental in addition to its superior eating qualities. The old Green Curled is well-known, and need not be described. The Moss Curled is very beautiful, but, alas! very fragile, as it is so soon destroyed by a little frost. The White Curled is only fit for summer use; it is very pretty, but tender; in fact, not an amateur's variety. Of all the curled section the Digswell and Model are the most profitable, as they are hardier and give more produce. There is an excellent green curled variety grown on the Continent and sent in large quantities to Covent Garden; it is much like ours, but larger, and may be unsuitable for our erratic winter in this country, so need not be recommended.

Culture.—For a supply as long as possible one should begin in May, sowing any of the curled varieties in good soil and sowing very thinly. To sow thickly, which is often done, is to court failure at the start, as once the plants get drawn they never recover. Another thing is to plant out in showery or dull weather, and if the plants are duly attended to in the way of moisture they will be fit for use in six weeks. The evil of early sowing is in running to seed, and to prevent this sow very thinly in rows and allow the plants to grow and finish where sown. The best plants are produced from the June sowing and later. Never allow plants to suffer for want of moisture; they delight in copious waterings overhead after a hot day. When transplanting lift with roots intact, with a little soil attached also. Plant out in rows 12 inches apart; for autumn supplies put the plants 9 inches in the row. In July and August sow the Batavian. Plant out as soon as large enough on a warm border for winter, or at foot of a south wall. Full-grown plants will keep months if stored in frames or under cover. The Endive may at all times be readily blanched by tying up or simply placing inverted flower-pots over the plants, and in summer or early autumn placing slates or light boards over the plants when full grown. G. W.

NOTES ON MUSHROOMS.

It will be advisable to prepare now for making up a fresh bed or beds that will ensure an unbroken supply. Most growers have their own particular way of preparing the manure for the beds. I advise all who have the opportunity of doing so to leave the droppings in the litter exactly as it comes from the stables until it is judged that enough has accumulated to form the bed, and then to shake it free from most of the litter all at the same time, afterwards throwing it together in ridge form in an open shed and treating it in the orthodox manner, except that it will generally be found that one turning will be sufficient to bring it into good condition for removal to the Mushroom-house or cellar. The advantages I see in this method are that fermentation is more likely to take place in a kindly manner and there is less fear of any of the material being spent, as it often is when gathered in small quantities and added day by day to a heap consisting almost entirely of droppings, and lying in a shed which may be too small to allow plenty of room for spreading.

There is a possibility in the event of continuous rain that the manure may become too wet; but this contingency may be met by shaking out all that may have accumulated as soon as settled heavy rains seem imminent, and if sufficient for a bed cannot at once be obtained, the heap may be added to daily in the usual way. Beds that I have made up with manure prepared as above advised have invariably borne better and more lasting crops than those formed with manure which has been collected in small quantities daily. The form of bed preferred by me is that made about 4 feet wide and with a gentle slope falling from the wall, such beds having advantages over those made in ridge form, as they can be more easily made firm, and can be soiled without having to plaster the surface. Beds on elevated benches are necessarily made flat, and these have a tendency to crop all over at the same time; so in making these it will be best to limit the size of each bed to equal the demands likely to arise within a limited period rather than to make large beds and depend on each to produce a lasting crop. A firm bed will, if the manure is in good condition when made, hold the heat well, while one loosely built soon becomes cold and hangs fire before cropping, even if it does not fail altogether. Before spawning, make sure that the heat has risen to its full height and is falling again; but it is not necessary to wait longer after it has fallen to about 90 degs., as the bed may then be safely spawned by making big holes, some 2 inches deep and 8 inches apart, with a handfork, placing in each hole a fairly large piece of spawn, each brick of which may be divided into twelve to eighteen pieces, and closing the manure round each piece with the hands as the work proceeds. Unless there is a fear of the bed becoming rapidly cold I prefer to leave the soiling for two or three days, after which some 2 inches of fine sweet loam or garden soil may be spread all over and well beaten with the back of the spade.

Though plastering is not recommended, we must not err, on the other hand, in using soil that is too dry to cling together, as a crumbling surface is not advantageous to growth, the best Mushrooms being those which meet with a fair amount of resistance in pushing their way to the surface. Little fire-heat will be necessary for the Mushroom-house while the weather keeps mild. A temperature of 55 degs. is quite high enough for Mushroom growing at any stage. If the house cannot be kept at this temperature without fire-heat, the beds must be covered with mats raised slightly above the surface, as these will be found far better for the purpose of covering than either hay or straw, the use of which often leads to attacks from woodlice or beetles. In case of fire-heat being used occasional slight sprinklings with tepid water may be given to the floor or any dry surface, always, however, avoiding the pipes or flues. J.

Lettuce Harbinger.—At this season of the year many find that the supply of Lettuce is none too plentiful, no matter how mild the winter, and in low-lying districts damp is equally as injurious as frost. Though a good stock may have been prepared for spring supplies there are many losses, and it is well to sow under glass for early cutting. The above variety is termed a forcing Lettuce, and specially recommended for early salads. It has the appearance of Endive, and as regards quality it is all one may desire. I have grown this variety for two seasons, and am much pleased with it for early sowing. Those who have salads to supply in variety would do well to sow it several times during the summer on account of its crested leafage and sweet, crisp hearts. Given plenty of room it attains a large size, and, though an early kind, does not run in a dry season so soon as some. I find it most valuable for sowing in cold frames early in February. The plants, if freely exposed in fine weather, are very good for spring supplies, the thinnings, if pricked out at the foot of a south wall, forming a good succession.—S.

Celeriac.—As regards culture, this is one of the easiest vegetables to grow, as if sown in March, pricked out again into frames or boxes in April, and planted in May or June in rich land, and never allowed to suffer from want of moisture, it is in my opinion one of the best winter vegetables we have. It is hardier than Celery, requires no earthing up, and is equally nutritious as a vegetable. As I have often noted in these pages, it is useless to grow the common Celeriac often offered by seedsmen; there is an improved form—the large, smooth Prague. Those who have grown the latter will not fail to note its value over the common Turnip-rooted, which is more spreading and less solid. The culture at the start is similar to that for Celery, but in planting, trenches are not required, though I advise a drill, as it is more convenient when giving moisture. If the plants are grown in rows 2½ feet or 3 feet apart, with half the distance between the plants, there will be no lack of fine roots for the winter.—G.

Broad Beans.—A good sowing of these may now be made, either of the Long-pod, which I prefer for sowings made during this month, or of the Broad Windsor type. Rather more room than that advised in a former calendar should be given to the Beans sown now, as these will grow bigger and give a heavier crop than the earlier-sown lot. Any that have been raised under glass and thoroughly hardened off should now be planted, as this will help to relieve the congestion from which many of our glass structures will now be suffering. They may be put out at 1 foot apart in single rows, giving 18 inches from row to row. A little shelter is for a time desirable, but it must be removed as soon as the plants have become acclimatised, a free circulation of air being necessary for these plants.—G.

General work in the kitchen garden.—If not already done, the pricking off of the earliest sown Celery into boxes must claim attention, for the sooner this is done and the tiny plants re-established, the sooner they may be hardened off. As probably there will be only a small demand for early Celery, no more than is absolutely needed should be pricked off. I use for this batch shallow boxes without other drainage than that given by an inch of flaky leaf-mould, and the tiny seedlings are put out about 3 inches apart. The young Chillies and Capsicums raised awhile ago should now be ready to go into single pots; a little well-decayed manure mixed with the soil will help to keep these healthy and of good colour. Shade for a few days after potting, but return to the full light near the glass as soon as they have got over the shift. Keep them growing in strong heat for some weeks to come, as there is no fear of getting them too forward. More Peas should be sown; it is not advisable thus early in the year to wait for the appearance of the previous sowing. Successional Radishes may now be sown, and those sown earlier (outdoor) should have the covering removed whenever possible and be gradually inured to complete exposure. For present sowing it will be well to choose more than one variety, and to include at least one of the long section, as these are frequently found to be of better quality than the Turnip-rooted varieties. Radishes are not particular as to soil, but I have found a marked improvement in the growth when they have been sown where the second spit has been brought to the surface, this, of course, where the soil has been of such a nature as to warrant this being done.

THE LEADWORT (PLUMBAGO CAPENSIS).

This is a beautiful sky-blue flower and the plant grows freely where ample space can be afforded it. Young plants in 6-inch pots when transplanted into a border of light loam and leaf-mould soon cover a large area, and present an attractive appearance when in bloom towards autumn. When the plants attain a large size they should be well cut back in spring; in fact, only three or four eyes on the preceding year's growth should be left. All weak growths should be cut clean out and portions of the stoutest shoots only left, otherwise such a dense thicket

Plumbago capensis flowers.

is formed that sun and air cannot penetrate, and the plants in consequence sometimes die off altogether. It is almost hardy, succeeding well in any structure if frost is merely excluded. No tying-in should be practised with the Plumbago, but a free and untrammelled growth encouraged. The flowers do not last long when cut, but sufficiently so to add beauty to the table for one evening. Alba has white flowers, but is not so hardy as the type.

VIOLETS IN WINTER.

These modest but fragrant flowers are always appreciated. It has been a favourable season up to the present for Violets, and certainly there has been no lack of the single varieties. Violets are generally plentiful during the autumn, but at the first approach of hard weather the flowers become scarce, and it is not until spring that they can be gathered again in quantity. Their failing to flower at this season may be due to several causes, but the chief one probably is in not properly preparing the plants at the first.

It is the usual practice about the month of March to divide the old plants, and these are dibbled out about a foot apart, in which position they remain until again removed to the frames. If the weather be favourable and the soil fairly good these may grow into good plants, but not such as are needed for continuous winter flowering. In the first place, plants which have probably been kept in darkness for days together owing to the thick covering required during severe weather, or those that have been grown in pits where fire-heat has been employed to protect them from frost, naturally become weak, and when divided and planted outside often stand for weeks before they commence growing, or, worse still, are withered up by cold winds or scorched with bright sunshine. A better mode of raising really good strong plants that will flower throughout the winter is as follows: About the middle of September a sufficient number of good sturdy runners is selected, and these are pricked out into several inches of good loam and sharp sand at least 2 inches apart in shallow frames. They should be well watered and shaded for a few days, when they should be gradually exposed, the lights being removed when it is seen roots are forming. By the end of October these become sturdy plants, and with slight protection will withstand the hardiest winter uninjured. Such plants can be lifted in the spring with good balls of earth and planted out with a trowel, and growth will commence at once. Frequent hoeing between the plants during the summer is very beneficial, and an occasional watering during dry weather with liquid-manure will promote sturdy growth, and strong plants well set with bloom will be the result by the middle of September.

About three weeks before the plants are removed to the pit or frame they should be prepared by cutting round with a sharp spade about 9 inches or so from the centre of the plants; this will sever the longest roots, and if well watered, young ones will form quickly, and each plant can be lifted with a good ball and placed in the winter quarters without a check. Water should be given to settle the soil, but shading is unnecessary. The fullest exposure should be given at all times in the absence of sharp frost or inclement weather. Undoubtedly the best place to winter Violets in is a brick-pit, where just sufficient artificial heat can be turned on to keep out frost—but only that, as fire-heat is fatal to Violets. In this position they need not be kept in darkness.

Soil.

Violets grow freely in any ordinary soil, but where it is inclined to be light and poor the plants often suffer during the summer from attacks of red-spider. In such cases a heavy dressing of well-decayed farmyard manure should be dug in during the winter, and liquid-manure given to the plants several times during the summer. On the other hand, a soil that is naturally heavy and retentive of moisture, and which bakes hard during hot, dry weather, should be thrown up roughly in the autumn to enable frost and exposure to pulverise it, and in the spring it should receive a good top-dressing of spent Mushroom-manure, leaf-mould, or refuse potting-soil, which should be forked in before planting; while, should the situation be exceptionally cold and badly drained, raised beds may be formed with advantage, as in the case of Asparagus. Respecting the best variety to afford flowers at mid-winter, I prefer Marie Louise, and Neapolitan for spring work. P.

GARDENING NOTES.

Celeriac.

I lately received from a Liverpool greengrocer a parcel of Turnip-rooted Celeriac of remarkable size—viz., much over 1 lb. each. My own never attained half the weight. Those sent me would have been better for the table had they been cut a month sooner, the rinds having become very tough, owing to the wintry weather, or perhaps long storing in dry material. I always used mine while soft. The dealer charged me 6d. each, which is certainly dear. They were delicious at table.

Barleria flava.

I recognise the little shrub described in Gardening, February 20 last, as my old friend B. prionitis, scattered over waste places in most parts of India, whence I used to procure it for adorning the front of my shrubberies. The crested, spinous heads of orange-yellow bloom supplied a contrast in colours, but I do not consider it a plant worth pot-room in a greenhouse when there are so many better things. The choicer kinds of Barleria, Ruellia, Eranthemum nervosum, and Sericographis Ghiesbreghti, the former light blue and the latter scarlet, are well worth growing. Sericographis is now showing flower-buds with me. I remember coming across it on the Burmese frontier about this time, when it was a blaze of colour in an open glade of a virgin forest.

Hæmanthus Katherinæ.

Two stout bulbs of this choice South African plant have gone through the winter, their 10-inch pots slightly damped occasionally. The crown of green foliage is very luxuriant. Temperature, 60 degs. and 50 degs.; soil, leaf-mould and sand.

Streptosolen Jamesoni.

These extra thirsty plants were kept damp in winter. The foliage is now starting growth, and the plants get water daily. Temperature and soil the same as above.

Mackaya bella.

My specimen, which is 5 feet high, is now making terminal shoots, of glossy green, water being given more liberally. The soil and winter temperature are as already mentioned.

Hyacinths.

The extreme hardiness of these bulbs is a great recommendation. Every year, when the pot supply has ceased flowering, I plant them in the borders, and for two or three successive seasons have had some fair blooms. Now, in mid-February, I can see from my windows the strong foliage many inches high, of a vivid green. The bulbs have been in the open ground two or three years.

Iris stylosa

has flowered poorly with me this season, my greenhouse being too warm. In a former year, when kept in a cold frame, its foliage perished, the same as I. fimbriata, a vigorous clump in a 10-inch pot, which behaves in the same way. I believe a cold-house, kept just above freezing-point, is the proper mode of management.

Keeping Apples.

Last autumn I gathered a large quantity of the cooking kinds for winter use. After selecting those without bruise or blemish, each fruit was rubbed with a dry cloth, then packed in large wooden cases, with alternate layers of short, sweet hay, and the boxes put away in a capacious empty laundry, situated in a cottage some distance from the dwelling-house. I am using the last lot of these now (February 18th), having lost none by decay.

Soil for Ferns.

I found the larger kinds, from forests in South Africa and India, thrive well on a mixture of decaying wood, leaf-mould, and sand. I used to bring a sack of the rotten wood occasionally to keep in store. The fallen timber, in moist places near springs, would have yielded cart-loads. W. H. L.

Double White Daffodils *(Archie Lev).*—One of the most beautiful varieties in the whole Narcissus family is the double poeticus or Gardenia-flowered, which is one of the last in bloom, middle of May. It is a fairly strong grower. They are not very expensive. The soil you mention is excellent, but beware of wireworm. Look over it carefully before use.

OUTDOOR PLANTS.

THE GIANT ASPHODELS (EREMURI).

By the introduction during recent years of the several species of Eremurus from the wilds of Central Asia, a new and distinct type of beauty

One of the Giant Asphodels (Eremuru Bungei) From a photograph.

and gracefulness has been added to our open-air gardens. Twenty years ago we knew of only one species of this genus in gardens, the noble E. robustus. Now there are at least ten species in cultivation, while the number known to botanists amounts to nearly thirty, and all these have been discovered within a few years, giving further proof of the rich flower region whence these giant Asphodels come, a region which has yielded us some of the finest of the newer hardy plants.

We have reason to be grateful to the Russian travellers and botanists who have been the means of enriching our gardens in this way, and we can best show our appreciation of their efforts in trying to establish these Eremuri in our gardens, and as they are all plants that require skill and care in their successful cultivation, they are worthy of the attention of our keenest hardy plant gardeners. There are many hardy plants difficult to grow, some hardly worthy the care and attention devoted to them, but to be the possessor of a stately flowering specimen of an Eremurus is something to be proud of in a modest way, particularly if it has exacted from you the care and attention that a true gardener loves to bestow on his more capricious plants.

That the Eremuri are not easily grown will, I think, be admitted by all who have attempted their culture—that is, they cannot be planted in an ordinary border and left to take care of themselves, as a Delphinium or Tritoma. They seem to me to require nicely adjusted conditions as to soil and situation. They must not be too damp or too dry, too much sheltered or too much exposed, and yet after all, these conditions are not difficult to fulfil in any garden. Being neither bulbs nor ordinary fibrous-rooted herbaceous plants, they cannot be treated similarly to either of these classes of plants. They belong to the same family as the Anthericum, Paradisea, and Asphodelus, most of which have fleshy roots instead of bulbs, and in Eremurus the roots are very fleshy, thong-like, and brittle, hence it is that it is never advisable to interfere with them after being once well planted, or the chances are that the roots are injured and the vigour of the plant checked.

The species in cultivation are the following; E. aurantiacus, flower-spike 2 feet to 3 feet high, flowers yellow; E. himalaicus, spikes 7 feet high, flowers white, yellow stamens, the hardiest of all; E. Olgæ, spikes 2 feet long, lilac or purple flowers; E. robustus, the oldest cultivated species, spikes 8 feet to 9 feet high, flowers pale pink; E. spectabilis, spikes 2 feet to 4 feet, pale yellow; E. Bungei (see cut), spikes 1 foot to 3 feet high, bright yellow. These half-a-dozen species are sufficient for anyone to start with, but they are all yet rather expensive, though, compared with an Orchid or stove plant possessing none of their beauty and elegance, their cost is trifling. The cultivators of these plants are at present very few. If they were more extensively grown we should then get to know all about them from the recorded successes and failures. W.

THE STARWORTS.

Where space admits, a charming way to grow perennials of the taller kinds is amongst evergreen shrubs, and no flower is more beautiful thus grown than the Starwort. The Starworts or Perennial Asters are lovely flowers of autumn, distinct from the China Asters, the brilliant annuals that make strong breaks of colour in the garden in late July and August. The name of these is Callistephus, an entirely different class from the Starworts, whose flower-laden shoots are tossed about in the cool autumn winds. In poorest ground these Star-flowers of the fading year will revel, and create a wealth of bloom as precious and beautiful as the finest things that colour the drowsy summer days. The usual way to plant them is in regimental fashion at the back of a wide border. Bunch up the stems, as if the bundles of stems were sheafs of corn, and one can get a good idea of the silly artificial tricks indulged in to the destruction of all natural beauty and charm. We want every plant to speak, so to say, for itself, which it is capable of if we will permit flowers and growths to reveal their characteristic traits. Never shall I forget a day spent in the September of last year in a beautiful Sussex garden. It was the last day of a brilliant month, cloudless skies, cool winds, and summer sunshine—a month to bring out the beauty of a thousand Starworts that made banks of colour here, there, and everywhere. The Starworts were made to pour forth their wealth, so abundant in these glorious plants from the North American prairies and seedlings of our own. They are not merely fine-

weather flowers, though happier under a blue sky, but in bad years even will make a bewitching finish to the year, with Tea Roses, Flame-flowers (Kniphofias), and late Lilies. Against a group of Scotch Fir, A. Amellus and A. acris were each planted in a bold group and covered with blossom from late August until early October, as if the sky above had mantled the nut-brown earth with delicate gradations of colour. The eye was carried up from the tufted mounds of soft blue beneath to the dark plumy branches and light brown trunk standing out clearly against the sky. These Starworts are amongst the pigmies of their race scarcely more than 18 inches high, and the earliest to bloom. In other parts of the garden were A. turbinellus. A. versicolor, A. cordifolius, A. horizontalis, A. ericoides, A. lævis, the New England Starwort (A. Novæ-Angliæ), the New York Starwort (A. Novi-Belgi), and many others, some seedlings, natural, and otherwise. Many of these in lovely groups flung themselves over evergreen shrubs, or associated with the yellow Perennial Sunflowers —a subtle contrast, cool, delightful, and artistic. One of the best ways to reveal the true beauty of the Starworts is to plant the taller kinds amongst shrubs. The flowery shoots come up from the leafy base, and toss about in the winds as they sweep over the garden on sun-lit September days, when many gardens already begin to smell of death—the death of a thousand bedders, rotting with the first breath of frost. Dismal indeed is a purely conventional garden in September, if frost has played pranks—an aspect of decay and disease after floral sunshine. It is at this season the Starworts bloom, and make autumn as enjoyable as spring.

Autumn, with its cool colouring and changing tints of foliage, is as enjoyable as any season of the year—the time of the Tiger and Lancifolium Lilies, hardy Chrysanthemums, and many other perennials. I mention autumn in particular, as the conventional carpet bedded-out garden either smells of decay, promoted by a frost, or the plants are torn and bedraggled from storms of wind and rain. C.

Galanthus viridescens. — Compared with the purer and nobler forms of this charming race of plants, this is always wanting, and seems rather to suggest an enfeebled form of the common Snowdrop than aught else. It is curious and possibly interesting in the collection of a botanic garden, but for real decorative value in the garden it cannot in the least compare with the Snowdrops to which we have recently directed attention.

GARDEN POPPIES.

This is a comparatively small family, numbering at most not more than eighteen good species, and of these probably less than a dozen will be found in cultivation in English gardens at the present time. They are pretty equally divided between annual, biennial, and perennial species, and it would be extremely difficult to say which section finds most favour with growers. There are doubtless few gardens in which some of the many forms of the brilliant oriental Poppy will not be found, but, on the other hand, the

Annual varieties, many of which are extremely beautiful, are now to be found in every garden. These annual Poppies have become an extremely popular and useful class of border flowers, and although the individual blooms are fugacious, the succession is nothing less than wonderful, and they continue to make a splendid show throughout the summer and autumn months. They are very accommodating indeed, sometimes too much so, as when once established it is difficult to get rid of them entirely; the seed gets spread about and seedlings come up everywhere, the chief attention required being thinning out to 4 inches or 6 inches apart and giving fresh soil in the way of a top-dressing. One great mistake in the cultivation of annual Poppies, a very common one, is to have too many seedlings in a given patch; they are, as a rule, robust growers and voracious feeders, and require plenty of room and good rich soil.

The biennial group is the least ornamental of the three groups, and are hardly to be found outside botanic gardens.

Of the perennial section, the most common species found in gardens is certainly the brilliant and extremely variable

P. orientale. Since this species began to break, and it has occurred only within the last few years, we have innumerable forms with flowers from the most brilliant scarlet to mauve, or even to a fairly good white. What strikes us, however, as being the most useful break in this species is a dwarf sturdy plant with upright flowers, the stems of which do not require to be held up with stakes. This will do away with the difficulty of using P. orientale in the mixed border, as has been hitherto the case, because of its unsightliness when staked and its rusty, straggling, untidy appearance when done blooming. Sunny banks or open spaces, where the soil is deep and rich, will be found the best for this species.

P. orientale var. bracteatum differs from the typical orientale in having large, leafy bracts near the base of the flowers. It also flowers earlier. It is a native of the Caucasus, and is very bright and showy.

P. alpinum is a truly alpine perennial, dwarf and beautiful, though rarely seen in gardens at the present time. Its flowers, varying from white to citron or yellow, are large and showy. It requires a dry place on the rock garden and should be well cared for during the winter, as it is very susceptible to too much moisture. P. a. var. nudicaule is the plant commonly found in gardens, and which has often to do duty for the rarer P. alpinum. P. nudicaule, which is also known as croceum and radiatum, is one of the most useful and beautiful of the dwarfer species. It is the

Iceland Poppy of English gardens, growing about a foot high and producing in great abundance and succession large beautiful flowers, varying from white to the richest orange-yellow. It is a true perennial, and if left alone will seed and form a colony in a very short time. It appears, however, in most gardens to be short-lived, and the best results will be obtained from two and three-year-old plants; the old stools, although living for many years, do not long continue vigorous. A native of Norway, etc. It flowers through summer and autumn.

P. pilosum is a handsome herbaceous perennial Poppy. It usually grows from 2 feet to 3 feet high, producing a succession of large brick-red flowers. The leaves are broad, not much divided, hairy on both surfaces. It is a native of Bithynia, etc., flowering all summer.

Double Poppies. From a photograph by Mr. Metcalf, Mill House, Halifax.

BLINDS FOR PLANT-HOUSES.

Many plant cultivators at this season of the year (March) are seeking for information on this matter. Now, the chief mistake nearly always lies in selecting materials so close in texture for the blinds that they half shut out the light, which, together with heat, moisture, and air combined, with a root-run of suitable soil, is essential to the well-being of plants of most kinds. Everyone who begins to "garden" seems to have an intuitive knowledge that all of these, except light, must not be stinted, if success is to be attained. But amongst many, even of those who might be expected to know better, the need of all the light we can give to ninety-nine out of a hundred of the plants in cultivation seems not to be fully understood. No further evidonce of this is needed than the fact of so many using fixed shading, put on for the spring and allowed to remain on until autumn, through the many days when we in this country never see the face of the sun at all, and the many hours, morning and evening, even in bright weather, when every ray of unobstructed light is little enough. Smearing the glass with whitening, lime, or similar substances all tend in the same direction, and, though largely employed, are makeshifts to effect that which with so much more advantage to the plants can be done by the use of movable shading. The thickness of the material that is required to a very great extent depends on the position the house stands in; the plants in a house, either span-roofed or lean-to, that stands full side to the south, will bear blinds of a little closer material than if the ends stood north and south, for the obvious reason that in the former position the sun at noon, when most powerful, strikes the glass when the sash-bars or rafters offer the least obstruction to it. For most things the thin material that goes under the name of gauze or scrim, composed of hard twisted threads, like fine wire, not woven close, is best. There is much difference in the quality; the right stuff is all flax, but there is a deal made of half, or more than half, jute; these last will not wear nearly so long as the former. A thick inferior canvas, composed of uneven, lumpy threads, too closely woven, is often sold as scrim, but although lower in price is much dearer in the end, independent of its shutting out too much light. The blinds should by all means be on the outside of the roof. The way to work such blinds is now pretty well known, but for the information of those who may be still unacquainted with it, I may mention the best method of arranging them. One side of the blinds must be tacked to a 3-inch wide lath, temporarily screwed on up to the ridge of the house, with a deal roller 2¾ inches in diameter, to which the opposite side of the blind must be in like manner tacked; this roller requires to be furnished at one end with a reel 7 inches or 8 inches in diameter, so as to take a cord that will work it up and down. The roller must be a little longer than the house to admit of the reel running clear of the roof. In making all blinds of this description it should be borne in mind that the threads of which they are composed that run lengthways—that is, the warp—are much stronger and more durable than the crossway threads—that is, the weft—for this reason in cutting them out the material should run up from eave to ridge, not lengthways from end to end of the house. This will make a year's difference in the length of time they will last. To fully carry out the intention of movable shading, it is needless to say that the blinds should always be rolled up when the sun is not shining so powerfully or directly on the glass as to endanger the plants within the structure.

H. B.

THE WHITE CUP (NIEREMBERGIA RIVULARIS).

This is the only species in a charming family that is quite hardy. N. rivularis has the reputation of being somewhat miffy under cultivation, but it is apt to be coddled too much. That it is indifferent as to any particular soil or position is obvious, as we have seen instances of its thriving under very diverse conditions. In one place it was planted in a moist, peaty border—in fact, an artificial bog; in the other it was growing in a dry soil on an exposed rock garden. Both were fine spreading tufts, and when we saw them were sheets of flowers. Few alpine plants are prettier when well grown, and it certainly deserves to be tried in every garden. The flowers of the White Cup are almost 2 inches across and flushed with rose, the centres yellow, whilst they continue to appear throughout the summer. N. frutescens, which is of erect growth, and N. gracilis or filicaulis, which has drooping shoots, are both tender and useful in the summer garden for trailing over the margin of vases or in the rock garden.

The White Cup (Nierembergia rivularis). From a photograph by Mrs. Selfe-Leonard, Hitherbury, Guildford.

Cyclamen Atkinsi.—The mild winter has had the effect of bringing this charming little hardy flower into full bloom at an earlier period than is usually the case. Every garden should possess a few bulbs of this Cyclamen, which comes to brighten up the outdoor garden when flowers there are scarce. I have now abundant proof that this Cyclamen is among the hardiest of hardy flowers, and I doubt if any frost that we are likely to get in this country has the power to injure it. The best specimen I have is in an exposed position, where it gets the full sun in summer, and has but little protection from cold winds when the flowers are expanding. The bulb was but slightly covered with soil during the severe frosts that we experienced several years ago, but the foliage remained in good condition, and the vitality of the bulbs was unimpaired. I could see no difference as regards hardiness between this kind and the well known neapolitanum, better known under the name of hederæfolium, and which I have never known to be injured by inclement weather. Many fail with these Cyclamens through planting them in unsuitable soil. They dislike a heavy, moisture-holding soil in which the roots cannot work freely. The rooting medium that best suits them is a sandy or gritty loam, and they make more progress when the corms are several inches above the ordinary ground level. Old mortar-rubbish or pounded bricks or stones mixed with the soil help to keep it free and open, and stimulate root formation.—Byfleet.

Sowing Sweet Peas to bloom in July.—In reference to the reply about Sweet Peas in Gardening, March 6th, page 10, autumn sowing is no doubt best for early blooming, but I take the following from my garden note-book (1896): Sweet Peas sown in open ground January 19th began to bloom June 7th. Seed sown March 15th began to bloom June 30th. It is clear from the above that January sowing is not much gain over March sowing, probably because the soil is too cold to allow the seeds to germinate. Seeds sown in pots now (March 6) in a cold frame will bloom in my garden the middle of June.—S.

A note from Teignmouth.—Seeing in your last issue a query as to the suitability of this climate for "Insignis" Pines and Euonymus, I send a photo of a specimen of the former, growing in my garden. I am told that the tree is a remarkably fine one. Its age I do not know now, but a Cedar-tree here, of which I also send a photo, was planted about seventy-five years ago. I also send a photo of a Myrtle growing against the wall of my house. It is the small-leaved variety, and has the advantage of the kitchen chimney behind it. I believe there was a finer specimen, which was removed to make way for alterations, on a house in the village. The Euonymus japonicus flourishes exceedingly here, and I have specimens of the gold and silver varieties, reaching the height of 11 feet and 12 feet respectively. I wish a photo could do justice to an Aucuba which is now a glorious sight. It is 8 feet high, and as much in diameter, and is covered with berries, from eight to fourteen in a bunch. There is a male plant close beside it. I hope to send you at a later date a photo of my Rhododendron and Lily bed.—S. H. Boyle, *Tapley, Bishop's Teignton.*

*** We print this letter as likely to interest our readers. The photograph of the Myrtle showed one of the finest plants we have seen, and we hope to illustrate it.

Puschkinia libanotica.—This very charming spring bulbous plant combines all the good properties that go to make a popular plant, in so far as its beauty and grace are concerned; but while possessing these points of merit, it does not appear to be nearly so abundantly distributed as the more showy and quickly-increasing Chionodoxa Luciliæ. There is, however, a great distinction between the two plants, and the subject of this note is always valuable either on the rockwork or in pots in the cool-house quite early in the year. The Puschkinias all do well in sandy loam in the rock garden or in the select border where there is no fear of disturbance, and in their compact, erect spikes of bloom they possess a daintiness of their own almost, if not quite, unique.

Hepatica triloba alba.—A very fine clump of this beautiful plant is now in bloom in the gardens of Aldenham House, Elstree. Rarely is it the lot of one to see a piece in such splendid condition. The Hepaticas are freely used here in the hardy border, where they assist to enliven the surroundings during the first few days of the early spring. The flowers of the white form create a pleasing contrast to the rose and blue forms of the same flower.—D. B. C.

ORCHIDS.

THE LONG-TAILED CYPRIPEDIUM (C. CAUDATUM) AND ITS VARIETIES.

Cypripedium caudatum is one of the most attractive and curious plants in the whole family. The spikes that are produced on strong healthy plants are generally about 20 inches in length, and they sometimes send out four flowers, but it is more usual to see them with two or three. The individual blooms are large and handsome, sepals being of a pale yellowish colour, with longitudinal deep green lines, and sometimes tinged with rose. The lip is brownish-green, heavily suffused with greenish-purple. Around the aperture it is of ivory whiteness enriched with rich purple markings. The petals are the most striking parts of the flower, and are remarkable for the great length they attain when fully developed. It is curious and interesting to notice that when the flower-buds first open the petals are very little longer than the sepals, but they gradually continue to grow until they attain a length of from 20 inches to 30 inches. These long petals are pendulous and have a ribbon-like appearance. This beautiful Cypripedium is a native of the Peruvian Andes. It was introduced to horticulture by William Lobb in 1847, and first flowered in the once celebrated collection of Mrs. Lawrence at Ealing Park in 1850. Our illustration represents its paler and more delicately-coloured variety Wallisi, the flowers of which are somewhat smaller than the type, but at the same time it is equal to it in point of beauty and attractiveness, and is always much sought after by amateur Orchidists.

It was discovered by Wallis about the year 1873. C. caudatum roseum is a brighter coloured variety than the normal type, otherwise its form and dimensions are identical. Other desirable kinds are C. caudatum Warscewiczi, C. caudatum Luxembourg variety, and C. caudatum Lindeni, generally known as Uropedium Lindeni. The principal characteristic of the last-named species is that the flower is without the ordinary pouch or lip. Cypripedium caudatum is found in its native habitat at from 5,000 feet to 7,000 feet elevation, growing on rocks in decayed vegetable matter, sometimes in shade and sometimes fully exposed to the sun's rays. The range of temperature in the locality mentioned during the daytime is very considerable. To meet the requirements of the plant in this respect no better place than a light position in an ordinary cool, intermediate temperature could be found at this season, but during the heat of summer the Odontoglossum-house is the most suitable place for it. There are cultivators who find C. caudatum and its varieties rather more difficult to manage than most Cypripediums, but if proper attention be given and a suitable atmosphere afforded the plant will grow freely and bloom profusely. The plants should be grown in pots of moderate size, which must be clean and well drained. In potting keep the base of the foliage about on a level with the rim of the pot, and use three parts fibry peat to one of Sphagnum Moss for the plant to root in. This species and its varieties need abundance of moisture both at the root and in the atmosphere, but great care should be exercised at all times to prevent water lodging in the centre of the growths or in the axils of the leaves, as they are liable to decay from this cause. When in bloom it is desirable to elevate the plant well above the foliage of other species that are growing near by, so that its curious long tails may be seen to the best advantage.

W., *B.*

One of the Long-tailed Lady's Slippers (Cypripedium caudatum Wallisi).

Cattleya amethystoglossa.—This is one of the finest of the C. guttata section, and a magnificent Orchid when well grown. It attains a height of over 2 feet, and from the apex of the last formed pseudo-bulbs produces an erect many-flowered spike. Each blossom measures upwards of 5 inches across. The flowers are variable in colour, the usual tint being light rosy-purple on the sepals and petals, spotted with a deeper colour, the lip of a deep or amethyst-purple. It is a Brazilian species, and thrives in an intermediate-house. Being a free-growing and rooting kind, the pots may be fairly large, and the compost must be used in a rough, lumpy state.

Lycastes are easily grown and very useful, and L. Skinneri, cruenta, lanipes, and similar kinds may be given new compost now if the flowers are past. Peat-fibre, loam, and Sphagnum in equal quantities, with an addition of crocks and charcoal, are what these like, and most of them are so easy of propagation that it is only necessary to cut through the rhizome, divide, and separately pot the pieces, when a good stock of plants may be soon worked up.

GROWING ORCHIDS.

Will you kindly give me advice as to growing Orchids? I am an amateur and have a greenhouse which I can heat to any temperature up to 80 degs. I want to know what kind of baskets or pots are required to keep them in health? How potted, and treatment of the sorts you would recommend me to start with? If it is not asking too much I should like you to give me a general outline of Orchid culture. I read your paper weekly and I am very interested in the Orchid notes, but have not seen any article that meets my case exactly. I have been a reader of Gardening for ten years standing—in fact, since 1885, and can testify to the valuable information it contains.—Aubergine.

*** Before enumerating the varieties of Orchids suitable for your greenhouse, we would draw your attention to a fact that is well known to all experienced cultivators—that a temperature of 80 degs., as maintained by fire-heat, is too much. Such a high degree of warmth when kept up by artificial means creates a dry, unhealthy atmosphere, and which is at all times hurtful to plant life. In addition it favours the propagation of insect pests, which, when they obtain a foothold, are exceedingly troublesome to eradicate. Having said this, I will proceed with the different species and varieties I would recommend you to commence with. Presuming that you wish to go in for the warmer growing kinds, I will first mention the deciduous Calanthes; these are old favourites and may be classed amongst the useful, easily-cultivated species. They bloom during the winter months and the graceful flower-spikes are invaluable for cutting and decorative purposes generally, lasting several weeks in good condition. Now is a good time to purchase the following varieties: C. Veitchi, C. Veitchi alba, C. rosea, C. Turneri, C. vestita, and its varieties luteo-oculata, rubro-oculata, and oculata gigantea. Among the newer kinds the following may be mentioned: C. Sedeni, C. Sandhurstiana, C. Victoria Reginæ, C. nivea, and C. bella. All of these commence their season's growth about this period (March), when the bulbs should be turned out of their pots, the old soil shaken out, and the dead roots trimmed off to within 1 inch or 2 inches of the bulb. The ordinary flower-pot is most suitable to grow them in, which should be about half full of drainage, placing over this a thin layer of Sphagnum Moss to prevent the fine soil from washing down into the crocks. The bulbs may be grown singly in small pots, or, if preferable, several may planted together in larger ones. The Calanthes root freely in the following compost: about one-half turfy yellow loam, one-fourth dry cow-dung, and one-fourth Sphagnum Moss, with a moderate quantity of small crocks and coarse silver-sand, the whole being well mixed together. The compost should be pressed firmly around the base of the bulbs, and after repotting no water is needed until the young roots are seen pushing their way into the soil, when a little may be applied and gradually increased as the young growths advance. The flower-spikes appear about October, when the supply of water must be gradually decreased, and after the spikes are cut it should be withheld altogether. These Calanthes should be grown on the lightest side of the house. Such beautiful and interesting Orchids as Catasetums, Cycnoches, and Mormodes require similar treatment to the Calanthes during their season of growth, but instead of pots, shallow Teak-wood baskets are more suitable, so that the plants may be suspended close up to the roof glass, as a good clear light is indispensable to their well doing. These species root and grow freely in Sphagnum Moss. Such species as Thunia Marshalli, T. Bensoniæ, T. pulchra, and T. alba may also be grown with advantage. They require the same kind of treatment as regards pots, soil, etc., as recommended for the Calanthes. We next come to

The Dendrobiums, a section of Orchids that are highly appreciated in almost every garden.

The following kinds are easily grown, and are well worthy of cultivation: D. nobile and its numerous forms, Dalhousieanum, D. Phalænopsis, D. fimbriatum, D. albo-sanguineum, D. Parishi, D. Linawianum, D. Brymerianum; also such beautiful hybrids as D. Ainsworthi, D. splendidissimum grandiflorum, D. Cassiope, D. Domini, D. Venus, and many other equally good varieties, but too numerous to mention here. All of those enumerated are suitable for pot culture, while for the following species and hybrids small shallow pans that may be suspended to the roof are preferable: D. micans, D. Wardianum, D. crassinode, D. primulinum, D. crepidatum, D. cretaceum, D. Pierardi, etc. In addition to the above, a few varieties of the evergreen section are worth attention—viz., D. thyrsiflorum, D. densiflorum, and D. Farmeri. All of the Dendrobiums root freely in well drained peat and Moss in equal quantities, and during their growing season abundance of water is necessary, but during their period of rest sufficient water should be given to prevent the bulbs from shrivelling. When in full growth Dendrobiums delight in having their growths slightly sprinkled over with tepid rain-water at closing-time, especially when the weather is warm and bright. It also helps to keep the foliage free from red-spider and thrips—insects which frequently attack these plants. These Dendrobes should also occupy a position on the lightest side of the house. On the shady side a place should be found for the Cypripediums, the majority of which are easy to cultivate; and the following would make a distinct and interesting collection: C. Stonei, C. Rothschildianum, C. Lawrenceanum, C. Hookeræ, C. Morganiæ, C. barbatum, C. Swanianum, C. Harrisianum superbum, C. œnanthum superbum, C. purpuratum, C. Curtisi, C. selligerum majus, C. Sedeni, C. Sedeni candidulum, C. Schroderæ, C. calurum (very pleasing), and C. grande. Cypripediums thrive best in pots half filled with drainage, using as a compost rough, fibry peat and clean, fresh Sphagnum Moss in about equal parts, adding some pieces of crocks to keep the soil free and porous. When in good health the plants will take an almost unlimited supply of water at the root the whole year round, and they must be carefully protected from the sun at all times. Suspended over these, a few plants of Phalænopsis Schilleriana, P. amabilis, P. grandiflora, P. violacea, and P. Luddemanniana, would thrive admirably. Grow them in Teak-wood baskets, with Sphagnum Moss for their roots to ramble into. During their season of growth Phalænopsis require a moderate supply of water at the root, but at other times the Moss should be kept just moist. In watering plants that are suspended above others, great care must be exercised in so doing, as oftentimes irreparable injury is caused by a drip falling into the hearts of the plants that are standing down upon the stage. If one end of your house is cooler than the other a few Cattleyas may be tried there, as C. Trianæ, C. Mossiæ, C. Mendeli, C. Lawrenceana, C. Schroderæ, C. Eldorada, also Lælia purpurata, L. elegans, L. anceps, L. autumnalis, L. albida, L. Gouldiana. All of these do best in pots, and they root freely in a mixture of peat and Moss in equal proportions. Like almost every other Orchid possessing pseudo-bulbs, they require a moderate quantity of water when growing, but when in a dormant state enough only is required to prevent the bulbs from shrivelling or their roots from perishing. During the summer the night temperature of the house should be about 65 degs., by day 70 degs., as maintained by fire-heat, but 10 degs. or 15 degs. higher will be beneficial to the plants if raised by sun-heat. Keep a moist, growing atmosphere by damping the paths, walls, and stages several times each day, but during the four middle hours of the day the atmosphere of the house should be comparatively dry. Towards autumn the temperature both by night and by day should be gradually lowered, and in winter the day temperature should be about 65 degs. and night 60 degs. A few degrees less will do no harm if the weather be exceptionally severe, at the same time moisture in the house should be lessened accordingly. As the spring advances and growth recommences the temperature should again be gradually increased. It is essential that fresh air should be admitted daily for the healthy development of the plants, as without this they will languish and die. When keen east winds prevail it is advisable to keep the ventilators close, as sufficient air will find its way through the laps in the glass or under the doors. At other times during the dull season, when the weather is favourable, air should be admitted during the middle of the day, but in spring, summer, and early autumn the ventilators should be opened according to the state of the weather outside.

W., *B.*

Epidendrum ciliare.—This is a singular Orchid. The sepals and petals are yellowish, the lip pure white and deeply cut, the centre lobe forming a point and standing out from the rest of the lip. It is a very old species in collections. It is a native of the West Indies and thrives well in a light position in the Cattleya-house.

THE GREAT PURPLE FLAG (IRIS PALLIDA).

This is one of the most beautiful of all hardy garden flowers. It has strong foliage and tall sturdy spikes of pale mauve flowers, delicately scented, and very handsome when seen in a mass in the border or some half-shady spot. German Irises are very useful plants for shady spots, none more so than this splendid kind. Mandraliscæ is a variety with deep blue flowers.

The Great Purple Flag (Iris pallida). From a photograph.

Dwarf Antirrhinums.—These are apparently gaining in favour yearly, and certainly where a mass of colour is desirable in borders or in large or small beds, they may well claim greater attention. Effective beds can be made with the taller and dwarf varieties, the latter planted as an edging. To obtain flowers fairly early in the autumn the seed must be sown in February and forwarded under glass, but from an early autumn sowing, small plants may be raised for flowering in the summer and wintered outdoors. By sowing seed in a box in August, and when large enough pricking the seedlings out on a piece of firm ground, they make nice bushy plants that can be taken up in spring and transplanted to any position desired, or if a permanent site can be given them, they can of course be then disposed of direct from the seed-box in autumn. Small plants winter much more safely than large ones, and none better than autumn-raised seedlings. Their season of flowering can be more easily maintained and extended by frequent gathering of the spikes, either in a fresh state or when fading. No useful purpose can be served by taxing the plants with so much seed, because in the case of the ordinary private grower a single spike would furnish sufficient seed for his requirements at least for one, if not for two or three years.—W.

CHRYSANTHEMUMS.

Chrysanthemums, twenty-four for outdoor growing (*E. A. Chapman*).—If you want a selection of showy plants you must confine yourself to the early and semi-early sorts, as these are so valuable for outdoor blooming during the dull season of the autumn. We would advise you to plant them in the beds or borders of your garden, and not to grow them in pots: Harvest Home, crimson and golden-yellow; Mme. Marie Masse, lilac-mauve; Ivy Stark, pale bright orange-yellow; François Vuillermet, rich lilac-rose; Edie Wright, pink, fading to white; Claret Belle, claret-crimson; Ambrose Thomas, reddish-bronze; Lady Fitzwygram, white; Mme. C. Desgrange, white; G. Wermig, yellow; Mme. Eulalie Morel, cerise and gold; Notaire Groz, delicate lilac-mauve; Sam Barlow, bright salmon-pink; Vice-President Hardy, yellow, shaded red; Ryecroft Glory, bronzy-yellow; Mme. la Comtesse Foucher de Cariel, old-gold; Roi des Précocés, rich deep crimson; Albert Thausson, orange-red, tipped yellow; Mme. Casimir Perier, white, tinted pink; M. Backmann, light buff. All the foregoing are Japanese. The following four sorts are the best of the Pompons: Blushing Bride, bright rosy-lilac; Alice Butcher, red, shaded orange; Mr. Solley, rosy-lilac; Mrs. Cullingford, white. Put out the plants in the open during the third week in May.

Six dark-coloured Japanese Chrysanthemums (*Black North*).—The following varieties should meet your requirements, but as you ask that only dark-coloured sorts be given, we have restricted ourselves to selecting crimson colours chiefly: Lady Randolph (large, amaranth-crimson), John Shrimpton (rich crimson, large and free), William Seward (deep blackish-crimson, large), Matthew Hodgson (bright crimson-red), Commandant Blusset (large, carmine, silvery reverse), and Pride of Madford (rich rosy-amaranth).

Selection for the inexperienced (*Black North*).—Varieties of easy culture are Emily Silsbury, white; Miss Elsie Teichmann, white; Mons. Chas. Molin, chestnut-red and canary-yellow; Phœbus, yellow; Mutual Friend, white; Reine d'Angleterre, rosy-pink; Souvenir de Petite Amie, white; Pallanza, yellow; Australie, light rosy-amaranth, silvery reverse; Col. W. B. Smith, bright terra-cotta; Louise, blush-pink; Mrs. E. S. Trafford, rosy-buff; W. H. Lincoln, yellow; William Tricker, light pink; Australian Gold, light yellow; Mons. Chenon de Léché, old rose and buff; and the three sorts you mention—viz., Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; and Niveum, white.

Tulipa biflora.—Seen at a little distance, and from the flowers alone, one might be pardoned for mistaking this for a pale yellow Erythronium when the blossoms are expanded. Tulipa biflora is a slender species very early in flower. The flowers are creamy-yellow, with a much deeper blotch of almost orange-yellow at the base.

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately, three-halfpence, post free, and can be obtained from this office.*

INDOOR PLANTS.

PLANT PROPAGATION.

Epiphyllums.

Epiphyllum truncatum is one of our most easily grown, and certainly the brightest, of winter-blooming plants for the greenhouse. They stand more neglect of treatment, and will last for more seasons, than the majority of subjects. There are several varieties, all of which are beautiful and have the same habit as the species. Now is a good time to propagate them. Owing to their tendency to droop, E. truncatum is seen to greatest advantage when worked upon a stronger form of Cacti, and none meet this desideratum better than Pereskia aculeata (Fig. 1). This, as will be seen from our illustration, forms an upright growth compared to the Epiphyllums. The Pereskia is very readily rooted, and may be grown to any desired height up to 3 feet. You cannot find a wrong time so far as the propagation of the Pereskia is concerned, providing you use a very sandy compost and are careful as regards water supply. Pot up the cuttings, and grow to what form or height you wish the base of your future Epiphyllum to assume. We find Pereskia Bleo much the best where tall specimens are wanted, having a more upright habit.

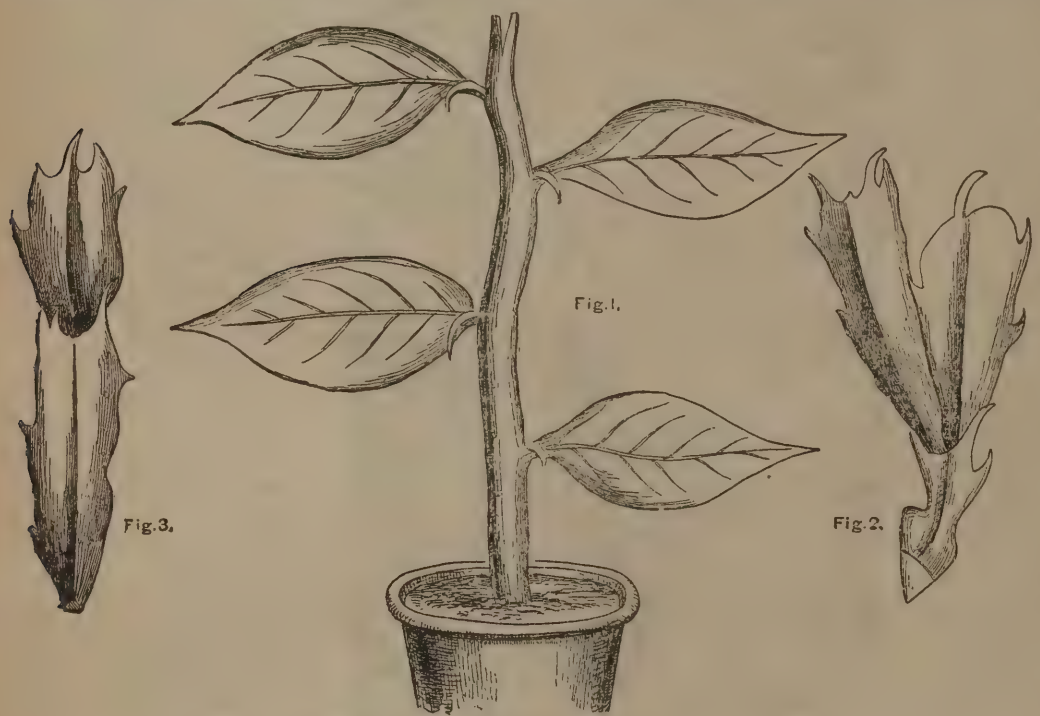


Fig. 1, the Pereskia stock; 2, Epiphyllum graft; 3, cutting of Epiphyllum.

Having grown the stocks sufficiently strong, proceed to work the Epiphyllums either on top, as illustrated, or at the side, just whichever height you prefer. You can also place several grafts at intervals up the stem if you wish to form a pyramid. When a few are worked near the top of the stock you get a prettily-shaped standard in a short time. Epiphyllums grow considerably stronger when worked upon this stock than when upon their own roots, of which form of propagation we will treat presently.

How to fix the graft.—Remove a piece of growth—preferably at a time when new growth is on the move—by pulling it out from the joint, when it will resemble Fig. 2. If you do not cut out a cleft to receive this, as in Fig. 1, make a downward cut in the side of the Pereskia-stock, and slip the base of the graft between the tongue so formed. You may either tie the graft in position or use one or two of the Thorns from the base of the leaf found upon the stock. We prefer a slight tie of raffia or wool, as being equally easy, and with less unpleasant consequences to one's fingers. Beyond this they need no special treatment, except to provide a warm and moist atmosphere. They are rather steady growers, so we would advise plenty of grafts being inserted.

Fig. 3 represents a cutting, but it is by no means necessary to have a small slip. You can root a branch of growth six times the size of the slip figured. Use a very sandy compost, and do not give much water. In rooting larger branches or cuttings, secure them to a small stick in some way, and so avoid risk of disturbance at a time when new roots are forming. So far as the operation of grafting is concerned, there is no subject so easy, or that will thrive better under greenhouse treatment, than this.

NOTES ON THE CAMELLIA.

It is not very often that we see this noble evergreen well treated, and yet there is scarcely another nearly hardy flowering plant that can boast of such a combination of high qualities, furnishing as it does, when in the full enjoyment of suitable conditions for its well-being, foliage of the most dense and lustrous description, and producing flowers of great beauty of form and colour. In spite of these most valuable qualities, however, it cannot be called truly popular, because it is often (quite erroneously, by-the-way) supposed to be difficult to manage, and so the culture of it is generally reserved for professional gardeners in large establishments, and some of our leading nurserymen and market growers, who often bring it to great perfection. A fine and naturally-grown collection of Camellias can be seen any week-day in the year at Messrs. Veitch's Nursery, King's-road, Chelsea. Now an amateur seeing these, or any other well-managed collection of them, would at once see how truly beautiful they are for the foliage alone, to say nothing of the noble flowers they produce in profusion, and the most valuable fact that they require scarcely any artificial heat at any time of the year.

Coddling up the plants in close warm-houses and badly-drained soil around the roots are the most frequent causes of failure. A more rational mode of treatment, recognising the fact that the Camellia is really a well-nigh hardy shrub, would work wonders, and often be all that is required to ensure the right treatment being given. It may safely be said that wherever a greenhouse of fair dimensions exists the Camellia may be grown well-nigh to perfection, and that without unduly taxing the skill and resources of the grower. I am inclined to think it would be a good plan if some of the unsightly stages which often disfigure plant-houses were removed entirely, and the whole of the back wall covered with Camellias, planted out in a well drained border of good material, peat and loam. They would, if well treated, form a dense curtain of foliage at all times beautiful, and which from autumn until late in spring should also furnish an abundance of lovely flowers of great value for buttonhole and other bouquets, if it is desired to cut some of them, which is generally the case. The plants may be set out in March, taking care that the balls of soil around the roots are in a moist condition, and ramming the compost firmly down around them. It is, perhaps, as well to allow an unrestricted development of growth the first season, commencing the training process the following season. H. B.

On the culture of the Chinese Primula.—In a general way we are taught by those who sell the seed that it should be sown in April or May, but to get good results I consider this decidedly wrong. My plan for many years has been to sow the seed not later than the middle of February, with the result that from October and all through the winter I have a grand display of flowers at a time they are so much wanted. I prefer raising seed yearly to keeping old plants. My plan is to sow the seed in sandy leaf-mould, and the seedlings when large enough are transferred into seed-pans in same compost, with the addition of a little good loam. When these have grown I transfer each to small pots, and later on to blooming-pots of 5 inches or 6 inches, so that by the end of September they are fine plants to house in the greenhouse, as all the summer they stand out on bricks in a shady spot, but have a temporary glass over them always to keep them from heavy rains. This glass is much above the plants. We hear so much of this and that sort "throwing up their blooms well above the foliage," but I have never yet met with any that did so. I cut a lot of pegs out of the Privet, and peg down the leaves of the plants so that the blooms can have light, and hence they do come above the foliage in a certain sense. Scale or insects of every kind can be easily removed. I have three very nice camel-hair brushes that I can carry about in my waistcoat-pocket, and I also have a smallest size paint-brush, and with these I clean my plants once a week, using weak carbolic-acid-soap in water. A tumblerful will last a month, unless I use it to my Vine, and then, of course, I require more. With these brushes you can clean your Carnations and remove the green-fly without hurting the plants. I am this year bringing on Roses in pots, and just now they are beginning to grow. I can clean the shoots easily with these brushes.—J. Gardner.

Propagating Solanum capsicastrum. — Most growers propagate from cuttings, but I have seen very good results from seedlings. Care should be taken to select good habited plants for seed, which may be sown towards the end of the month. Where it is intended to propagate from cuttings, some plants should be put into a warm-house at once; the earlier in the year this can be done the better. Before starting, the stock should be thoroughly cleansed, either by fumigating or dipping the plants in some good strong insecticide. Solanum cuttings will root freely in the ordinary propagating-pit; short cuttings from the fresh young shoots are best, and care should be taken that they do not get withered during the operation of taking them off and putting them into the pots. They do not take so long to root as the Genistas, and must be potted off singly into 3-inch pots as soon as sufficiently rooted. Solanums require to be grown on in heat and stopped from time to time until they have made good bushy plants. Cuttings commence to flower early, but a moist atmosphere and frequent use of the syringe will prevent them from setting, or if a few berries do set they should be taken off. Later, when they have made good bushy plants—which should be early in July—plenty of air should be given, and a dry atmosphere maintained to ensure a good set. Some growers keep their Solanums indoors all the year, but they succeed equally well in the open during July and August, and the berries set better. They must be hardened off before being fully exposed to the hot sun.—A.

CULTURE OF GARDENIAS.

Kindly inform me as to culture of Gardenia—soil, temperature, etc.? My plants are growing strongly, but the leaves are of a very light colour, and blooms drop off before opening.—Heather Jock.

*** The culture of Gardenias requires much care and attention in being able to obtain a display of flowers after twelve months. The buds often drop just at the time of opening. Cold draughts and allowing the plants to become dry are chiefly the cause of this, but where a large number of plants are grown a few buds may drop off. Sometimes it occurs when plants are making rapid second growth. All the sap rises into the growth and leaves the bud, hence it gradually shrivels, or turns yellow and falls off.

Propagation.

Cuttings of Gardenias should be taken in early spring—January or February are the two best months—as the wood is well ripened and in a much better condition than if taken later. Select cuttings of sturdy growth about 3 inches or 4 inches long, and insert singly into well-drained small pots, and plunge in Cocoa-nut-fibre in a propagating-frame, with a temperature of 70 degs. or 80 degs. Keep close for a few days till they commence to stand erect, when a little air should be allowed to prevent them from damping.

Soil.

Equal proportions of finely-sifted peat, loam, and sand are necessary for cuttings, but when potted into 4-inch pots the soil should not be so fine, with also a smaller amount of sand. At the final shift use good fibrous loam, with the addition of one-third peat and sharp sand, but where dry cow-manure can be obtained it may be used, crumbled up into small pieces.

Potting.

When the cuttings are well rooted a 4-inch pot is ample for the first shift, which should take place at the end of March or beginning of April. Towards the end of June the plants should be well rooted, and large enough for the final shift into 8-inch or 9-inch pots. It is an advantage to many growers to put two or even three plants in a 12-inch pot when large specimen plants are required. Pot firm at the final shift to encourage sturdy and short-jointed growth.

General treatment.

Throughout the summer Gardenias require a temperature of 70 degs. to 75 degs. by day, with a fall of 5 degs. at night, and on no account allow a cold draught to enter into the house, especially at the time when the plants are forming buds. From April till September keep all long shoots pinched, to encourage sturdy growth and a good-shaped plant. Keep syringed two and three times a day during the summer months. They require a liberal supply of water when growing; and when the pots are fairly full of roots a little weak manure-water may be given. Liquid cow-manure or sheep-manure is very beneficial. Care must be taken that the water is always lukewarm, both in syringing and watering. Shade a little during the hottest part of the day, as the young growths are very tender, and not able to stand strong sunlight. Towards the end of September 65 degs. by day is a temperature quite sufficient to ripen the wood for the full development of the flower-buds. A little less watering is also beneficial, but do not allow the plants to become quite dry. At the turn of the year a few plants may be required for earlier flowering. Place them for the summer in a temperature of 70 degs. to 75 degs. in the day. A succession may be obtained if required. Two more growths start at the side of the flowers, and these will bloom in a short time after the first flower is over.

When finished flowering pruning is necessary. Cut them well back and give a good syringing, or dip in soft-soap and water, to cleanse from all pests. Lay the plants on their side to prevent the solution from draining into the roots. As soon as the plants have commenced to make new growth shake out of the pots and remove a portion of the old soil, care being taken not to injure the new roots. Pot again into the same mixture as before, in pots according to the size of the plant.

It is advisable to propagate a few cuttings every spring to keep up the stock, as badly-shaped plants may be thrown away after the flowering season. Mealy-bug and scale are the worst pests, but these may be kept down by the liberal use of the syringe, or a weak solution of soluble petroleum.

WINTER FLOWERS.

Tropæolum Lobbianum is now embellishing the rafters of my warm greenhouse, climbing fast on the tarred twine through metal rings screwed into the woodwork. I got some strong self-sown plants in the end of August, grew them on in 5-inch pots outside, and took them to the house before frosts commenced. Cuttings also root readily in a little bottom-heat. A pretty ornament to a sunny window are roots of the dwarf Crystal Palace kinds, grown in wide-mouthed Hyacinth-glasses full of water. The roots should be of stout seedlings, and put far into the water. Then about a dozen pieces of fresh charcoal are gently stuffed into the mouth. These flower very soon after treatment, and a contrast of mixed colours in each receptacle is pleasing to the eye. My glasses are dark blue.

Lachenalias and Freesias.—I have not moved my bulbs for three seasons, and they are as vigorous as ever. They are treated while in growth to a top-dressing of dry cow-dung, broken small. Directly the foliage has withered, the pans are placed on a dry top shelf of the house where the sun shines, and are left there until the hot summer days, when they are taken to a frame, and undergo a thorough baking there for some months. About the end of August I cover the surface of pans with a thin layer of Cocoa-nut-fibre, and put them on a south border among shrubs with their backs to a wall. When shoots appear the pans are removed to a frame, where they grow rapidly. When 3 inches high they are fit to transfer to a sunny stage of the greenhouse, when they need plenty of water while in growth, but very sparingly when the foliage turns yellow. They can be cultivated very closely together, and the various kinds mixed for display. The drying process is exactly the same with Freesias or in the last-mentioned, but they multiply so fast that it is necessary to empty the pans in late autumn, when I turn out and sort the sizes, selecting the best bulbs for planting in roomy pans—some eight or ten to each—in a soil of sandy loam and leaf-mould, putting the large stock of bulblets to grow on to maturity in shallow boxes and wide pans, covered with fibre, as before mentioned. In the same sheltered spot under the south wall I put the whole lot, and they come well above ground after the first shower of autumnal rain, when I take them to the frame. They love cold, but the least touch of frost is certain death. In bad weather stout mats are spread over the glass. On fine days ventilation is given, and the plants remain there till the flower-spikes show, when they are taken into the greenhouse. The foliage being slender and brittle, I use the wire Strawberry supports, which I make of a ring and three upright spikes of about 16 gauge, in galvanised material, which hold up the whole clump and display its beauty. I use the dried cow-dung, as before stated, and usually administer two or three doses of soot-water. Some of my specimens have already leaves a foot long, the hue a vivid green (like Grass). W. H. L.

Begonia roots diseased (*Enquirer*).—Your Begonia roots have evidently been attacked by the grubs of the Black Vine-weevil (Otiorhynchus sulcatus), a most destructive pest. What you sent was the pupa or chrysalis case, from which the beetle had escaped; the grubs were the culprits, who as soon as they were full-grown turned into chrysalides. This is a very difficult insect to eradicate; no insecticide can be made to reach them when they are inside a root, so that the only way is to take a plant which is attacked out of its pot and pick the grubs out; the weevils are also very destructive, feeding on the leaves of Vines and various other plants. They only feed at night, but then may be caught by the aid of a lantern or lamp; the plants on which they are feeding should be laid on their sides on a white cloth, or if that is not possible, the cloth should be laid under the plant, then after dark enter with a light; this will probably make the weevils fall. If it does not, give the plant a jarring shake and search it well.—G. S. S.

TREES AND SHRUBS.

SHRUBS FOR LONG TRELLIS.

(In reply to "F. D.")

Your trellis is in a capital position for hardy climbing or half-climbing shrubs, the only drawback being the sandy soil. This difficulty can easily be surmounted by adding some good garden soil at the time of planting. With regard to the number of plants required to cover the trellis, much depends on whether immediate effect is desired; if so, larger plants than are usually planted would have to be used. But, supposing them to be young and of average size, 5 feet to 10 feet between each ought to be sufficient. Of course, some plants being of rather slow growth would not require so much; but the slower-growing subjects might be worked in with the freer-growing shrubs. The following list comprises some excellent examples: Indigofera Gerardiana is a grand, but much-neglected shrub; its small, Pea-shaped flowers are borne with great freedom. Forsythia suspensa is a lovely yellow-flowered spring-flowering shrub. It is a good grower in dry soils. The Honeysuckle family comprises some beautiful and sweet-scented subjects. A large plant of Lonicera fragrantissima is a grand sight in the month of February when carrying its wealth of small flowers. The Trumpet Honeysuckle (L. sempervirens) is a quick-growing climber and very free-flowering. L. Brachypoda aurea reticulata is a very pretty variegated-leaved plant of rapid growth. Its long sprays are useful for mixing with cut flowers. Cratægus Pyracantha (Evergreen Thorn) is a lovely plant when laden with its rich orange-coloured berries, which in almost all seasons are borne freely. Exochorda grandiflora and E. Alberti are choice and beautiful free-flowering shrubs. The Virginian Creepers include some valuable plants. They are of vigorous constitution, free-growers, and very beautiful climbers. The merits of Ampelopsis Veitchi and A. hederacea have recently been referred to in Gardening, but there is one variety named A. Englemani which might with advantage be planted more extensively. As the autumn approaches the leaves assume many shades of rich colours. Escallonias, especially E. macrantha and E. rubra, are very beautiful. Bignonia grandiflora soon covers a large space. Photinia serrulata is very distinct, its deep green persistent leaves being very beautiful. Hedera (Ivy) is one of the most useful of hardy climbers, varieties of exceptional merit being H. atropurpurea, one of the grandest Ivies grown; succeeds well in all positions. H. amurensis has large, thick, leathery green leaves, and H. marginata robusta is a silver-leaved variety. It is a good grower and keeps its colour well. Wistaria sinensis is a vigorous and free-growing subject; it carries a wealth of bluish-lilac coloured flowers in May. Jasminum nudiflorum (the Naked-flowered Jasmine) is also very beautiful; its yellow flowers are produced in winter. Euonymus radicans (Silver Gem) is a plant of sterling value; it grows well in all garden soils. Your soil is too dry for most of the hybrid Clematises, but C. Jackmani and C. montana may be relied upon to thrive and flower well.

HARDY SHRUBS FOR HOUSE FRONT.

In your number of February 6th, an answer is given to a correspondent, "West Lothian," who asks for the names of six varieties of hardy shrubs to decorate the front of a house. But "West Lothian" omits to state how many miles his house is from the sea and at what height above the sea it stands—two essential points in the climate of the South of Scotland and northern counties of England. Of your recommendations, take Ampelopsis Veitchi. In Midlothian I have seen it growing on a wall, fully 30 feet high, and for a considerable number of years thriving as well as could be wished, and finally cut down for two-thirds of its height during an exceptionally severe winter. Then take Wistaria sinensis. In East Lothian, within reach of the sea-air, it thrives splendidly. In

Midlothian, five miles from the sea and 300 feet above it, it also thrives, but not so well, and at 500 feet above the sea it would only be disappointment to try it. Though not in your list, Escallonia macrantha thrives well up to 500 feet above the sea, but is liable in exceptionally severe winters to lose some of its growth, but not to be killed, and is well worth growing. Garrya elliptica is first rate—no winter, however severe, harms it; the same with Jasminum nudiflorum, Cratægus Pyracantha, and Aristolochia Sipho. Instead of Ampelopsis Veitchi and Wistaria sinensis, could you suggest a few more shrubs suitable for a climate in which late frosts in spring and early frosts in autumn have to be reckoned with? In my garden Magnolia conspicua thrives, and with the help of the wall of a house Chimonanthus fragrans does well at ten miles from the sea and at 500 feet above it. Your answer would be applicable to a large extent of country between the Tyne and the Tay. R.

*** In addition to those mentioned at page 693, Vol. XVIII., the undermentioned can be recommended with equal confidence. As they do not commence growth very early in the spring they are not susceptible to being cut by late frosts, and as they finish growth fairly early in the season, our correspondent need not fear losing any of them on that score. Amongst berry-bearing plants Cotoneaster microphylla has few equals. It is exceptionally hardy and very distinct by reason of its small glossy evergreen leaves and bright scarlet Holly-like berries which hang for the greater part of the year. Celastrus scandens (Bitter-Sweet) is a beautiful North American climber. Its foliage assumes many pleasing shades of yellow in the autumn. Its clusters of orange and scarlet berries also entitle it to more than passing notice. One of the finest of early spring-flowering shrubs is the Yellow Forsythia suspensa. It as hardy as Jasminum nudiflorum, is a vigorous grower, bearing a rich profusion of golden-yellow bell-shaped blossoms on its leafless twigs. The double-flowered Bramble (Rubus fruticosus fl.-pl.) is one of the hardiest of climbers. It is also very free-growing and exceptionally floriferous. It thrives well in damp situations. Another plant of rapid growth is Periploca græca. Withstands any amount of hard weather. Its small purplish-brown flowers are borne in clusters. Lonicera Halleana is a vigorous grower, and produces abundance of sweet-scented, yellowish-white flowers during the summer months. Pyrus japonica Maulei is another hardy shrub well adapted for growing against wall. Euonymus radicans Silver Gem is one of the hardiest of the genus. A large plant trained against a wall or trellis makes a very pretty effect. Escallonia Philippiana is without doubt the hardiest of all the Escallonias. It has small, narrow, pale green leaves, and small white flowers; very floriferous. Ligustrum japonicum is a very handsome shrub; free-flowering and hardy. Ivies must not be omitted, especially the varieties named H. dentata, H. Rægneriana, H. atro-purpurea, and H. canariensis maculata. The last-named varies considerably; but given a fairly sunny position, its large leaves will be heavily splashed with silvery grey.

ABOUT HOLLIES.

(In reply to "Hollyberry.")

The variegated Hollies cannot be relied upon from seed. To keep the stocks true to name, propagation by cuttings, layering, budding, or grafting is necessary. We are pleased to furnish you with a few particulars about the propagation of the Holly. In the first place, we will consider propagation by

Seed.

This is a very slow method, and employed principally with the green-leaved section. The berries should be collected in winter, and mixed with a quantity of sand, the whole being turned over monthly; by this means the rotting of the husks is assisted. Another advantage of treating the seed in this way is a saving of the ground, for if sown immediately they are gathered the seeds would be dormant from eighteen months to two years. The best position for sowing the seed—which should be done a year after it is gathered—is in a partially shaded border, where the soil is not likely to become baked by the sun. When the plants are a few inches high they should be transplanted into nursery rows, the best time being September and May. It is not advisable to transplant in winter.

Cuttings.

There is no great difficulty in inducing the Holly to form roots from cuttings. Well-ripened wood of the current year's growth being essential. A bed of sandy soil made quite firm forms a suitable mixture in which to insert the cuttings, which should be covered with a handlight and shaded from the sun. The cuttings should be made quite firm at the base.

Layering.

This is rarely practised unless the branches are close to the ground. When it is done, treat in exactly the same way as recommended for Carnations and Roses.

[Budding and grafting are not ways we approve of. There is no need to graft or bud such shrubs as the Holly.]

Seedling Cedars, etc. (*Jack Sims*).—Seedlings of various sizes of all the conifers you mention can be purchased by the thousand from nurserymen who cultivate hardy trees and shrubs. Consult our advertisement columns. Seed ripens in this country on large trees, but the supply is generally drawn from the Continental seedsmen.

Lenten Roses at the Royal Horticultural Society's show—The pit-like light of the Drill Hall is not good for any plants, but the Hellebores last Tuesday were put in the back unlighted part of the hall, and their effect was very dull, whilst in many cases the plants, owing to the fine spring, had slightly passed their best beauty, so that in one way or another the collection failed to show the beauty of the plants. In the open air well grown, a mass of flowers of good kinds springing from the fine leaves is often beautiful in colour, and when very well grown and naturally massed charmingly effective. In nurseries the plants are so much cut about for division that one rarely sees the noble effect of old plants, and of those shown in many cases the leaves of the finer plants were cut off, though one of the best qualities of the oriental Hellebore is its foliage. On the whole, therefore, the exhibit may be said to have failed to show the real character of these plants in their interesting variety of colour and fine habit.

GARDEN WORK.*

Conservatory.

Cinerarias, if they have been well grown and kept clean, will now be making a good show, It is not everybody that can do Cinerarias well, though this may in some measure be due to circumstances over which there is not much control. They must have a cool-house not too far from the glass; at any rate, the position must be light, and the plants should not be allowed to get much pot-bound before they are wanted to flower or the bottom leaves will die. Seedlings are all right if they are from a good strain, but there is so much worthless seed sold. The best Cinerarias I have seen this year were the produce of seeds obtained from a Continental nursery; but we need not be at the mercy of the seedsman, whether English or Continental. All we have to do when we find a plant with a good shaped flower with size and substance, is to set it on one side away from the others, and so on go on selecting till a strain has been worked up. This is what all the originators of strains of Cinerarias or any other plants have to do. Very few people seem to grow named Cinerarias now, which is, I think, a pity, as a few plants in good colours well grown would be worth all the rubbbish we meet with now-a-days. A good Cineraria can be grown in a 6-inch pot. The market growers do them well in 5-inch pots, but their low, cool-bottomed houses are suitable, and they feed liberally. I used to think the double-flowered Cinerarias, when they were first introduced, might be done something with, but they did not catch on. The ladies never took kindly to them, and in the cold shade they disappeared. Pelargoniums should have what little staking is required now, and liquid-manure may be given freely till the flowers expand. Spiræa astilboides is a lighter, more graceful plant than the old japonica, and may be forced just as easily. If the most is to be made of anything attractive do not scatter or fritter it away in little lots. Bring the whole into a group in some conspicuous spot, and put a margin of Maiden-hair Ferns round. Those who have tried to make the most of things know how effective white flowers and green foliage are in a mass, Cuttings of winter-flowering Zonals struck now and grown on will make very useful stuff next winter in 5-inch pots, or even if a size smaller a lot of flowers may be cut from them. We find plants in 4-inch pots on shelves near the glass give a lot of useful cutting stuff in winter.

Stove.

The Allamandas, Dipladenias, and other summer-flowering climbers are now growing freely, and must have proper training. When these plants are grown as specimens they are usually trained on balloon-shaped wire trainers, the blossoms tied in the most effective position, but during the time of growth the shoots permitted to grow up into the light to develop the clusters of blossom-buds which show at the end of the shoots. One of the brightest sights in Allamandas I saw some years ago. The plants were in large pots, and covered both sides of a span-roofed house, being trained up near the glass till the leading shoots met under the ridge. The profusion of rich, golden flowers of large size eclipsed everything I had previously seen, and were being cut freely for the rooms. Gesneras should be helped on in heat now; a close warm pit is the place for them. I do not think these beautiful plants are so much grown as they were, but they are five plants for the amateur's stove in winter. The Zebrina and splendens forms are the most used. They do best in pans, five bulbs in a pan, or more in large pans. Plant in rough, rich, fibry compost. We used to start ours, when we grew them largely, in small pots, and then transplant to pans when fairly started. They fill the pans better in this way: night temperature now, 65 degs.; ventilate carefully, and use a thin shade on bright days if any of the plants appear distressed. Shade should be regarded as a necessary evil, and not used when it can be dispensed with. Keep down fires on bright days.

Cucumbers

are making rapid growth, and if started early in January, there should be plenty of fruit now. Those who grow for market have to make the most of the early season, as the price soon comes down. To keep the plants in condition at this season, almost constant attention in tying and stopping is required, and top-dressing must be frequent. The moment the white roots show above the surface a sprinkling of rich compost should be given. Early Cucumbers do not require much at a time, but they want it often, and as soon as the crop hangs heavy on the Vine give liquid-manure freely. The non-ventilating system is the best for taking the most out of the plants in the shortest time, and time is the essence of everything now-a-days. Night temperature not less than 65 degs. During the day, on the non-ventilating system, anything under 100 degs. with a saturated atmosphere will do.

Early Peaches.

Keep the young shoots regularly tied in to prevent them shading the fruit. If there is any suspicion of over-crowding, either shoots or fruit, go over again and thin out a little more. Apportion the crop to the ability of the tree to carry it when properly nourished and supported, and it may be stated that only the advanced men who have thoroughly studied the question know what a lot of nourishment in the way of liquid-manure a vigorous Peach-tree will use profitably. There is plenty of work for the experimentalist who goes about his work intelligently in every department of gardening, and especially as regards manuring fruit-trees. We want to support and nourish the roots without souring the soil in which the tree is planted. We want the essence or spirit of the manure-heap without its substance.

Mushroom House.

This house will be doing a lot of useful work now in supplying Rhubarb, Seakale, Chicory, or, it may be, Dandelions, for salading in quick succession. Mushroom-beds as fast as they cease to be profitable should be cleared out and the places filled with fresh material, but the beds should be made up at once. If the atmosphere is foul with ammonia the Seakale and Rhubarb will be tainted and unfit for use. A steady temperature of 55 degs. will be suitable.

Window Gardening.

There will be green-flies on Cinerarias and Pelargoniums now if not carefully watched. Those who can give up a few minutes each day to picking the flies off may have a little mild excitement in hunting them down, and have the luxury of clean, healthy, bright-leaved plants.

Outdoor Garden.

Carnations which have been wintered in pots in frames will be better out in the beds when the soil is in condition to receive them. The sites for Hollyhocks should be got ready, and the plants set out, so that they may get established before the dry weather comes. Divide herbaceous Phloxes, Pyrethrums, and Delphiniums, and any other hardy plants that were not dealt with in the autumn. I like dividing such things as Chrysanthemum maximum, Gaillardia grandiflora, Michaelmas Daisies or Starworts, and the Perennial Sunflowers better now than in the autumn. Pansies for summer flowering may be planted now. Turf may yet be relaid and evergreen shrubs planted, but I think as far as possible it is wise to get the shrubs and trees now as near home as possible. When the roots are much dried they do not have quite so good a chance as a freshly lifted plant will have to establish itself. Of course, the attention the plants receive after they are planted has much to do with success afterwards, and in this respect mulching is indispensable. Those who plant dry roots of Dahlias without starting them under glass may soon put them out, pushing a small forkful of mulch round each plant after they are set out. If exhibition blooms are wanted, single-stemmed plants are best, but if a lot of flowers are required for cutting leave two or three stems and stake them out.

Fruit Garden.

The young shoots of Figs under glass should be stopped at the fifth leaf. It is best not to pinch the terminal bud quite off. Crush it between the finger and thumb, so as to destroy the tissues without removing it; there will be little or no bleeding. Remove all surplus shoots from both Figs, Vines, and Peaches under glass. The principle is the same in all cases, but is carried out on different lines. We want a reasonable surface of good foliage. To the trained cultivator the work is intuitive—the hand and the eye work together, and the progress is rapid—but the removal of surplus growth is, during summer, a weekly business. Sub-laterals should be taken from Vines when they can be rubbed off with the finger and thumb. If left longer the effect upon the roots is bad. Strawberries in pots should set their blossoms now without any help if air enough can be given. Give liquid-manure as clear as it can be obtained.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

I have known men who were opposed to the use of liquid stimulants for Strawberries, but they used 6-inch pots, and the loam was good, and bone-meal and other stimulants were given in a dry state in the soil as a top-dressing. If large fruit can be grown without liquid-manure there is no necessity for its use, but large fruit must be had any way, or there will be trouble for the grower. If there are any bud-eating birds about now they will be among the buds unless prevented.

Vegetable Garden.

Take advantage of fine weather to sow or plant anything likely to be wanted. If cottagers understood something more about the cooking of Jerusalem Artichokes they would be much more grown, for they are delicious when properly served. Plant now in an open situation in rows 3 feet apart and 15 inches in the rows. There is more than one variety. The best is pale in colour, and almost round and smooth. To obtain early Cauliflowers open a trench along the front of a south wall, put in some good manure, fork it in, and set out the Cauliflower-plants in a double row, about a foot apart. Mulch and feed liberally with liquid-manure, and there will be a lot of good Cauliflowers—not large, but quite large enough for the epicure. Stir the soil among the autumn sown Onions and Spinach. These are very useful crops which everybody should grow. Spinach has a beneficial effect upon the blood at this season. Shift on Tomatoes intended for planting out under glass. Keep the plants in a light position near the glass. Sturdiness is important. Outside Tomatoes, except against a south wall on a warm, sunny corner, are a delusion and a snare; but under glass, in roomy, well ventilated houses, they will do for some time longer. Potatoes should be planted when the surface is dry.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from March 20th to March 27th.

Finished grafting young fruit stocks. The sap is up well now. I generally wait till the sap runs freely, and rarely have failures. Shortened back the late budded Roses. Finished pruning all the Roses, except Teas. The last-named will be left another week probably, though I do not think any harm would be done if pruned now. It is not easy in an early growing season to prune to a dormant bud, but it is better to do so if we can. Sowed Asparagus, and planted more Seakale root cuttings. Finished planting Potatoes and Jerusalem Artichokes. These latter have been much improved; the tubers are as smooth as Potatoes, and there is less waste. Sowed a patch of Chervil, and commenced to rearrange the herb department. It is much more convenient to have all the herbs arranged on the same plot on beds near to each other. Sowed more Spinach. Sowed a few seeds of Early Milan Turnip and Egyptian Turnip-rooted Beet. Sowed Asters, Stocks, Zinnias, Marigolds, and other tender annuals in a warm house. Disbudded trees in late Peach-house. Plenty of fruit set; some will be rubbed off from the under side very soon. Sowed Balsams. We usually plant a lot of these about the borders at end of May. They make large bushes during summer, and are very effective; in fact, I think the open air is the best place for Balsams. Planted out Cauliflowers, and pricked out Brussels Sprouts from boxes. I like to get the first batch of these early. Sowed a good many hardy annuals in variety. We have plenty of border room, and I am partial to some of the annuals. Of course there are weedy things among them, as there are among the perennials. One of the prettiest blue-flowered annuals is Phacelia campanularia. It is dwarf and compact, and wants to be seen in a good sized mass. The Godetias are all showy, so are the annual Chrysanthemums. These and the Nasturtiums may be sown freely among the shrubs in newly laid places. Shifted on a lot of young Ferns and Palms and other things. Sowed seeds of Dracænas, Grevilleas, Cyperus alternifolius, etc. Put in more cuttings of various things. We always keep the propagating bed in full work now. We still do a little carpet bedding, for which such things as Coleuses, Iresines, and Alternantheras are required, and these will be time enough if propagated in April, as they must have heat. I have turned out many thousands of these in past years, and always struck after March, as the growth then is more rapid, and the newly rooted cuttings may be topped, and in a short time, with a set of hot-beds at work, thousands can be rooted.

AQUARIA.

Breeding gold-fish (*Miss Hilda Paull*).—The fish are not likely to breed in an aquarium of such small dimensions. In a receptacle holding twice the quantity of water, with a good thickness of sand and shingle at the bottom, and furnished with aquatic plants, your gold-fish would be more likely to breed; a tin bowl is, however, unsuitable as an aquarium. In starting an aquarium the sand and shingle should be just covered with water, and the aquatic plants carefully placed in position, putting a stone upon each root to keep it down in its place. Then fill up with water to within about 3 inches of the top of the aquarium, which should be put near a window with a north-east aspect, where there will be but little sun except quite early in the day. Some ten days or so must now elapse before the fish are introduced, it not being safe to do so till bright bubbles of oxygen begin to appear upon the surface of the plants and a green growth is seen upon the sides of the aquarium. This confervoid growth does more for the health of the fish than any plants that may be put in. When once well started the aquarium may go on for a long time without it being necessary to change the water, a little only being added from time to time to make up for evaporation. An excess of light is prejudicial, causing the water to become murky; still a little morning sun is very beneficial to fish and plants. A few water-snails will be found very useful in clearing up all refuse. Vallisneria spiralis is a useful plant, and grows well in an aquarium, while the Anacharis is good in keeping the water clear and healthy. It grows very quickly, and is one of the simplest to commence with, bearing rough treatment much better than some other aquatic plants, and is pretty; a few pieces thrown in will grow and increase. Gold-fish require a little feeding, and may have a small worm or two now and then, or a little vermicelli broken small; dried lean beef is also good for them, which should be shredded very fine and sprinkled on the top of the water. This is devoured greedily, and the fish thrive exceedingly well upon it. In introducing the gold-fish it is important that the temperature of the aquarium be about the same as the water from which they are removed. Of course, in starting an aquarium the plants require some little time to grow, and until they are sufficiently developed to fulfil their mission a few sprays of Watercress may be supplied from time to time.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

131—**Insects in soil** (*Edelweiss*).—Please send specimens. We cannot advise you unless this be done.

132—**Treatment of Onion-plants** (*Old Court*).—Transplant upon firm and rich loam. A slight dressing of soot is a great help to Onions.

133—**Manure for ground** (*M. S. F.*).—Well-rooted stable or farm-yard manure is the best to manure the ground with for the planting of Peas.

134—**Removing Colchicums** (*Scalpel*).—With a little care you may easily lift the Colchicum or Meadow Saffron now. Do not disturb the new roots more than can be avoided.

135—**Fertiliser** (*A Constant Reader*).—Three ounces to a bushel of soil will not be too much for Chrysanthemums of the fertiliser you mention, but 2 oz. is sufficient for the other subjects.

136—**Increasing Pampas Grass** (*Old Court*).—The Pampas Grass is best increased by division at any time now. Seed should be placed in gentle heat; it will scarcely germinate in the open.

137—**Lilium auratum** (*H. Stewart*).—When new growth commences your bulbs will need a considerable amount of water. Weak liquid-manure is beneficial. Grow them steadily, and turn outside next July.

138—**Rose buds failing** (*M. H. D.*).—It seems to us that your Rose has been kept too damp. Neither pruning nor manure would affect the buds in that way. Avoid so damp an atmosphere and ventilate a little.

139—**Sowing Fern spores** (*J. G. G.*).—Any time now. Sow upon the reverse side of a sod of stiff turf and lay this in a shallow pan of water. You must be careful not to wash the spores off, and they germinate better if kept close.

140—**Climbers and flowers under eaves** (*N. N. W.*).—Virginian Creeper, Ampelopsis, and Ivies would do upon the wall. There is a great choice of herbaceous subjects suitable for your border, such as Delphiniums, Phloxes, and Columbine. Deutzias, Spiræas, Roses, Syringa, and Cydonias would be suitable flowering shrubs.

141—**Tomatoes for greenhouse** (*Novice*).—Make two rows and plant the Tomatoes 2 feet apart, training them to a single stem. It will be best to plant upon a small mound of turfy loam. Do not overfeed, nor afford too much soil.

142—**Clematis** (*J. C. P.*).—Lady Caroline Neville and Tunbridgensis are too good mauve Clematises. They are both hardy and would do upon your east wall if afforded a little light loam to start in. It was probably Lady Caroline Neville.

143—**Sweet-scented flowers in window-box** (*Inquirer*).—You might use the various forms of Mimulus or Musk, also the Lemon-scented Verbena and Mignonette, but there are not many sweet-scented subjects suitable for a window-box.

144—**Twelve incurved Chrysanthemums** (*C. D.*).—Queen of England, Robert Cannell, Yellow Globe, C. H. Curtis, Princess of Wales, Lady Dorothy, Mrs. Heale, Baron Hirsch, Barbara, Guernsey Nugget, Lord Wolseley, and Jeanne d'Arc are all good varieties.

145—**Planting Lobelia cardinalis, etc.** (*Scalpel*).—Early in May is a good time to plant out Lobelia cardinalis and Antirrhinums; these two are hardy. Salvia patens may be planted out at the end of May, but must be lifted and stored in a cool house during winter.

146—**Galvanised iron for a Tomato-bed** (*Galvano*).—We see no reason why the galvanised iron should injure your Tomatoes, but it will not allow of any drainage, and this may be a bad point. We would grow them in pots, and use a strong turfy loam, if available.

147—**Sulphate of ammonia for Cabbages** (*W. H.*).—You do not say the nature of your soil, and this is a most important item in the application of artificial manures. Until we know this we would rather not advise you. Please repeat your query and we will reply at once.

148—**Treatment of Lilies** (*Inquirer*).—In February would have been ample time to pot these; but they may come on well yet, although potted so early. Had you kept them dry and plunged in ashes it would have been better. Many do not pot these until early in March.

149—**Best Vines for a cool-house** (*Colonel T., Guildford*).—These are Foster's Seedling, Chasselas Vibert, Buckland Sweetwater, and Royal Muscadine. As white kinds the Foster's and Buckland are the most profitable. The best black Grapes are Black Hamburgh and Gros Marcc.

150—**Ants in vinery** (*L. C.*).—Ants will eat fruit. Find out where they nest or come to and fro, then put a little fresh tar in the crevice. You will need to persevere if you wish to eradicate them. Set a few saucers on the floor, putting a little thin treacle in these. Large numbers can be caught in this way.

151—**Eucharis Lilies** (*L. C.*).—These require a moist stove heat of 75 degs. to 80 degs. An ordinary greenhouse temperature is not sufficient to do them well. Give a rich turfy loam and water with liquid-manure when in active growth. They are subject to mite and mealy-bug, and are not an easy subject for the amateur.

152—**Cyclamens** (*J. M.*).—You should be able to succeed with Cyclamens in your house. A temperature of 60 degs. is ample. Keep them growing steadily, not drying the bulbs off as used to be practised. Your plants should be in full bloom now, and have probably been kept too far from the glass, hence their drawn up leaves and flowers.

153—**Planting Gladioli for exhibition** (*Exhibitor*).—Select an open situation, and commence planting at once. For exhibition it is best to plant a bed, placing the bulbs a foot apart, and about 4 inches deep. As soon as the flower-spikes appear support them with a stake, and use a little stimulant to assist the full development of the flowers.

154—**Cooked bones** (*J. R. C.*).—We should say cooked bones are only slightly inferior to others. If you pile them in a heap, and cover with earth, after the manner of Potato clamps or "pies," the bones will soon ferment and form a coarse powder. Burying them in the ground at once is not so good a plan. Prepared bone manure is very cheap.

155—**Malformed Jonquil** (*B.*).—Narcissus bloom sent is Narcissus odorus minor. It is the nature of the species to come with split flowers, and if five out of a hundred blooms come good, one may consider themselves very fortunate. It is a poor species, and not worth growing. We gave up growing it some years back and burnt all our stock.

156—**Increasing Hepaticas** (*A. Leaver*).—A sandy loam with a little peat is very suitable for Hepaticas. The seed may be sown in boxes or pans now, and pricked off when large enough. Division of the roots may also be done now, but they do not care for much disturbance. Any nurseryman could supply, and more than one are advertising in our pages.

157—**Oil-stove** (*E. G.*).—We are afraid your lamp would be too powerful, nor would it give any bottom-heat—the most essential point in raising seeds, etc. Why not make up a slight hot-bed with stable-manure leaves and weeds? This is simple and effective. There is no waste, as the decayed matter forms a valuable fertiliser, and is also excellent for potting.

158—**Ivy-leaves as manure** (*Neophyte*).—We have answered this question several times lately. Ivy-leaves are utterly without value as manure or to form a hot-bed. Barron's "Book on the Vine," price five shillings and sixpence, post free, would suit you. It can be obtained from the author (A. F. Barron), The Acacias, Sutton Court-road, Chiswick, London.

159—**Annuals in pots for winter flowering** (*Irwin*).—You cannot do better than sow this month Cinerarias, Primula sinensis, or Cyclamens for winter and early spring flowering. We recommend you also Roman Hyacinths, Tulips, Lilies of the Valley, and Daffodils, and if placed into a forcing temperature in November a fine show of flower can be had at Christmas.

160—**Blighted Potatoes** (*East Kent*).—Your land has got sick of Potatoes, and would be better for a rest. Can you not give change of plant and grow a green crop or other roots, such as would come off soon? Then turn up ground rough. The best way is to lime, and soot would do much good. Dress ground at once and plant early Potatoes; you will then escape disease if it is essential to grow these roots.

161—**Plants for wooden trellis** (*H. B.*).—Tropæolum canariense (Canary Creeper), Convolvuluses, Japanese Hop, and Tropæolum Lobbianum would suit you. Ivy is, of course, a splendid hardy evergreen creeper, and Emerald Green is one of the best varieties. If the wall is a low one, get Cotoneaster microphylla, which bears bright red berries, and is welcome for its growth and colouring.

162—**Persian Cyclamen leaves falling** (*Beautiful*).—Your Cyclamens must be of a very inferior strain for you to only have half-a-dozen flowers this year. Furthermore, you state the foliage is falling off, which is proof that the plants are very poor. It is advisable for you to obtain a fresh supply of seed from a well-known nurseryman and make a fresh start. Your culture, too, may be at fault. Send a few of the leaves to us.

163—**Twelve good bedding plants** (*Florist*).—The following is a list suitable for bedding, and a grand display may be obtained by their use: The tall-growing kinds are Abutilon Thomsoni, Canna Duchess of York, Nicotiana affinis. Plants of medium height are Calceolaria Golden Gem, Pelargonium Henry Jacoby, and Pink Christine. Dwarf plants are Begonia semperflorens, Ageratum, Tropæolum Vesuvius, Lobelia Emperor William, Asters, and Stocks.

164—**Flowers for garden facing north in London** (*Mrs. W. E. Scott*).—July is rather early to have a balcony well furnished. You might sow Nasturtium at once, or purchase Fuchsias, Pelargoniums, Marguerites, and others from the florist. We think the latter would be your best plan, but you cannot put them out safely before May. Why not grow Panies in your beds, also Forget-me-nots? They make a pretty contrast, and are very profuse early in the summer.

165—**Nitrate of soda for garden** (*Reader*).—Use this at the rate of 1 oz. to the square yard when dressing. As a liquid you may use 1 oz. to a gallon of water when applying to fruit-trees, but half this strength when watering pot plants. They are excellent fertilisers, but best used while the plants are growing, or upon the point of new growth. Soluble manures of this description are wasted unless the plant be in active growth and able to assimilate them at once.

166—**Primula obconica** (*A. N., Belfast*).—Repot your Primula obconica, and give it a stiffer soil. Feed with liquid-manure if you do not repot; the flowers are half starved. The hardwooded plants you name must be well attended to in the matter of syringing and water. Keep them in a cool greenhouse all summer. They are among the easiest to grow. Sprinkle the nitrate of soda over the soil during showery weather if possible. Use at the rate of 2 oz. to the square yard.

167—**Myosotis alpestris striata rosea** (*F. G. S. Norrin*).—Sow seed thinly in pans, and pot on when able to handle. One plant will be enough for each pot. Use a small size first, then pot on into one 5 inches over. Keep them in a cool pit or frame, and use a compost of loam and leaf-soil in equal proportions, giving a suspicion of sharp sand to avoid clogging. Sow now, and do not attempt to hurry the plants too much. You will want a 6-inch pot for Convolvulus; one plant will be ample.

168—**Diseased Apple-trees** (*B.*).—Your trees are badly cankered. This is the result of the soil being too heavy. The soil sent is almost pure clay, and not suitable for the trees. You should incorporate some light materials such as road scrapings, sand, grit of any kind, leaf-soil, wood-ashes or burnt refuse, and old mortar rubble before planting, and it would also be advisable to place a good quantity of brick rubble at a depth of 2 feet to 3 feet under choice trees for better drainage.

169—**Buds on Pelargoniums** (*Irwin*).—Cuttings of Pelargoniums taken in March should make plants large enough to flower in winter. Propagate two or three cuttings in a 60 pot, and pot off singly into small pots as soon as rooted. In June shift into 5-inch or 6-inch pots, and place in a cold frame, keeping the flower-buds pinched off until required to expand; then place the plant in a conservatory or greenhouse. Zonal Pelargoniums are not so subject to green-fly as the fancy section.

170—**Use of greenhouse** (*Novice*).—Many of our readers have been very successful with the stove you mention. There will be no smell of oil if the wick be regulated so as to burn the whole of the oil drawn up. Latania borbonica, Aspidistra lurida, and African Asparagus would do well with you. You could grow Mignonette, the Lemon-scented Verbena, and Musk for scent. Cyclamen, Zonal and Fancy Pelargoniums, Azaleas, Genista fragrans, and heaps of others are suitable. We think if you read our articles upon amateurs' greenhouses you will see just such hints as you require.

171—**Birds eating fruit buds** (*Subscriber, Glaryford*).—Stretch some pieces of thread among the branches of your fruit-trees, and also give them a good wash of lime. Finches are very troublesome among Gooseberries and Currants, but if you take care in pruning and use thread, you should be able to secure a crop. Do not feed the Passion-flower. It is probably growing too strong to bloom well. Your Clianthus is attacked by red-spider and must be well syringed with some insecticide. Young plants of this pretty climber flower best. We would cut it out and plant afresh.

172—**Best flowers for window-boxes** (*Irwin*).—To keep a window-box furnished with flower throughout the year, you can have bulbs for a spring display, such as Hyacinths, Tulips, and Daffodils. For summer and autumn Fuchsias and Zonal Pelargoniums are effective, with an edging of Lobelia, Ageratum, or Golden Feather Pyrethrum, and Ivy-leaved Pelargoniums are useful for trailing over the sides. In the winter months very few flowers can be had outside which are suitable for window-boxes, so you cannot do better than plant with small evergreen shrubs, such as variegated Aucuba and Thuja Lobbi.

173—**Arranging Roses, Clematises on trellis** (*F. A. D.*).—Place the Aristolochia in the warmest corner. We would prefer a Clematis at each end, C. Flammula and C. montana being useful. The other four might go between the eight Roses at uniform distances. Place the late Dutch Honeysuckle at the ends, and the others towards the centre. We would certainly not put two or three of any one variety of Rose together. All of those you mention are strong growers and will make sufficient show individually. Do not overcrowd the Roses; 5 feet or 6 feet apart is none too much for such strong growers, especially upon a low trellis.

174—**Report of the Viola Conference and trial of Tufted Pansies (Violas) 1896** (*C. W.*).—This useful report is in the printer's hands, and will be ready for circulation in a few days. It contains the papers read at the conference held in the Royal Botanical Gardens, Regent's-park, N.W., in August last, besides other interesting matter. The inclusion in the report of the result of the Tufted Pansies (Violas) in the same gardens during 1896, should also be of interest to all lovers of this beautiful hardy plant. Copies may be had for sixpence each on application to the honorary secretary, Mr. A. J. Rowberry, The Crescent, South Woodford, Essex.

175—**Lily of the Valley for early bloom** (*Heather Jock*).—To force Lily of the Valley, put six or eight crowns in a 5-inch pot in equal parts of sandy loam and leaf-soil, and to keep up a succession of flowers stand a few pots in a vaporating-trough. Keep constantly filled with water until the flowers begin to show, when the pots should be removed to a dry position to prevent the flowers from damping off. Cover the pots with the same size pot as the crowns are potted in, to keep them dark. This is a great advantage to Lily of the Valley, as it helps to draw the flower-spikes well out of the crowns. The pipes should be hot, so as to force growth quickly. This is an excellent way of forcing Lilies of the Valley, and they should be in flower within three weeks, dating from the time of starting.

176—**Anemone for name and treatment** (*J. H. G., Bolton*).—The flower you send is a double form of A. coronaria. Seed may be sown in April upon a well-drained bed of rich, but light loam. Rub the seeds well between the hands with some sand to part them. Sow in shallow drills a foot apart, and water if a very dry summer sets in. Some will bloom the same autumn. Lift the small tubers in October, and replant in November. If planted in batches during October and November, they will afford a longer succession of flower. A further planting may be made in February, choosing a time when the soil works well. Anemones do not like a stiff or wet soil, and always do best when exposed to the south-west winds. Any coddling or extreme shelter is resented. Plant five or six tubers together, or else make rows of single tubers 3 inches apart and 1 foot from row to row. For forcing, the double varieties should be potted in September and plunged in a cool pit. They will not bear hasty forcing, but by potting early and giving the protection of a cool pit or frame until the flower buds show, afterwards bringing them into the cool greenhouse, many very beautiful flowers may be had early in the year.

177—**Treatment of Gloxinia seedlings** (*Nil Desperandum*).—Prick the Gloxinias off singly into small 60 pots, and place in a shady position on a shelf. Pay careful attention to the watering to prevent damping off. When the plants are well rooted and making good growth, pot on into larger pots. A 4-inch pot will be quite large enough for this year, as Gloxinias do not make very rapid root action. We recommend fibrous loam, peat, and sand to pot in, but we do not recommend malt combs. Grow in a temperature from 55 degs. to 60 degs., and always keep shaded from strong sunlight; also keep free from cold draughts. When finished growing and flowering, discontinue the watering a little, gradually drying off to ripen the bulbs. Afterwards, place them on their sides in a dry position until the spring, when they commence growth. They should then be watered, potting on the same as the previous year. Plants suitable for exhibition should be the result. A little stimulant may be allowed once a week when the plants are well rooted.

178—**Begonia seedlings** (*Stowmarket*).—As soon as the Begonia seedlings are large enough to handle prick them off into well-drained pans, about 1-inch apart, and place on a shelf in a temperature of 65 degs. Careful attention must be paid to the watering, as they will quickly damp off if not carefully attended to in this respect. When they have made three or four leaves pot off singly into small sixty-sized pots and place back in the same position. When the pots are full of roots give another slight shift, and place in a greenhouse, but keep warm for a few days till the plants have recovered from the check. They may be expected to flower a little for the first season. Sandy loam and peat are most suitable for Begonias. On all occasions keep in a shady position after they have finished flowering, gradually discontinue the watering, and when the plants have died down place them on their sides under a stage on a shelf away from damp and moisture. In February or March growth will commence again, when they should be shaken out and potted on the same as the previous year, placing in a temperature of 55 degs. to 60 degs, to encourage growth. Afterwards place them in a cool-house. A little stimulant is beneficial when the plants are well-rooted and making good growth.

179—**Plants for beds.**—Would you kindly suggest something pretty for two beds (Maltese crosses) on a lawn? I have had carpet bedding, but want a change. There are "Geraniums" and Begonias close by.—A SUBSCRIBER.

*** *Why not get Pansies, the more tufted kinds, such as Ardwell Gem, Duchess of Sutherland, Bullion, and True Blue; and use, too, Antirrhinums, Sweet-scented Tobacco (Nicotiana affinis), Verbenas, Tuberous Begonias, Fuchsias—anything except carpet plants such as you speak of.*

180—**Cyclamens.**—In your last number (March 6th) you say that Cyclamens require sun. I find that mine will not bear direct sunshine, though well watered, without flagging, often severely. Last winter I had them in full bloom for nearly six months, and they are doing equally well this year, so I do not think there is anything amiss with the plants; but they stand in a south window, in an open wire stand, without any protection for the pots. Would this cause the flagging?—C. E. S.

*** *In all probability this is the cause. The place is evidently too sunny, and the soil gets dry more quickly than many suppose, hence they may, at times, suffer from dryness at the root.*

181—**Climber for cool greenhouse.**—Will you kindly tell me of a good climber for a cool greenhouse to be planted in a pot? I have a Plumbago which does fairly well, but the Clematis is not a success. I should like something to grow quickly.—J. R. C.

*** *Why not try a Rose, such as William Allen Richardson or Maréchal Niel? Tacsonia Van Volxemi is a beautiful climber, and quite hardy enough for your purpose.*

182—**Evils of overpotting.**—Will you be kind enough to explain how plants are injured by "overpotting," against which I often see warnings. I want to know: 1, What is the bad effect of too large a pot? and 2, how is it produced? I know that some plants flower best when pot-bound, but I think this is not universal, and I cannot see how it can injure a plant to have plenty of room.—C. E. S.

*** *The reason is that the roots have to spread through a mass of soil that in time gets sour through watering. Of course some plants will live anywhere and in anything, but overpotting of such plants as Pelargoniums, and things even as robust as these result in a comparative failure, because of the trouble in keeping the soil sweet.*

183—**Lilium auratum in pots.**—Please tell me how to grow a Lilium auratum in a pot? I have planted a bulb in a 7-inch pot in equal parts of loam, leaf-mould, and sand, and left about 4 inches from the top for a mulch. I have buried the whole in a bed of coal-ashes. Is that right? What must I use for a mulch? I can get plenty of short dung.—ARCHIE.

*** *You are treating your Lilium correctly. Mulch with a few pieces of very old cow-dung. Grow steadily, and afford plenty of water.*

184—**Hoya carnosa.**—I have a Hoya carnosa in a pot 5 inches in diameter; the plant is some 8 feet high. It is in a heated greenhouse, the pot is green and dirty, and I want to change it. Kindly advise me what to do. Can I put the plant in a larger pot, and if so, what soil must I use, and if it is necessary to remove the old soil from the root, and any other particulars?—C. H.

*** *Yes, you can repot the Hoya at any time now. Use a compost of leaf-soil, loam and a little broken charcoal. Give ample drainage, and do not have the compost broken up too finely.*

185—**Wire-netting for Peas.**—Is galvanised wire-netting suitable for training Sweet Peas on? I had thought of fixing the netting about 3 inches from the wall, and utilising a lot that I have in this way.—F. CHAPMAN.

*** *Yes, the wire-netting makes a capital support.*

186—**Six best varieties of certain fruits.**—Would you please tell the six best varieties of Apples, Pears, Plum, and Cherry for general use, early and late, for dessert and kitchen use? What grafted on for bush, pyramid and standards? When and how?—ANXIOUS.

*** *We scarcely understand your query. Do you mean six varieties of trees in all, or six of each, or six for dessert or kitchen. The best kitchen Apples are Prince Albert, Alfriston, Lord Derby, Manks' Codlin, Wellington, and Newton Wonder; best desserts, Cox's and Blenheim Orange, Ribston, King of Pippins, Cox's Pomona, and Beauty of Kent. Again, we do not know how many you require. The pyramids should be on the Paradise, standards on Crabs. Best Pears are Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, Emile de Heyst, Beurré Diel, Doyenné du Comice, Easter Beurré, and Josephine de Malines, on the Quince-stock if in good soil. The following are six good Plums: Early Rivers, The Sultan, Victoria, Jefferson, Grand Duke, and Coe's Golden Drop. We do not know what you mean by what grafted on, when, or how. You must make your questions more explicit. We shall be pleased to assist you in every way we can.*

187—**Treatment of Lilium auratum.**—About six weeks ago I potted half-a-dozen Lilium auratum (in small pots), and placed them as they were in my greenhouse. I noticed a week or so ago that you advise covering with ashes and placing outside, just as one does with Hyacinths. I have now covered them with ashes, but as they have started (the new plant in one case being fully ½ inch up) I have kept them in the greenhouse. Is this right, or should I still put them out for some weeks? Also when should I transfer to larger pots? The pots at present are just large enough to hold the bulbs comfortably.—STIGMA.

*** *Keep the bulbs in the greenhouse now that they have commenced growing. It will be best to pot them on at once, giving a rich compost of leaf-soil and manure.*

188—**Fowl-dung for Potatoes.**—I have a quantity of fowl-dung mixed with ashes. Can I use the same for planting Potatoes?—ARCHIE.

*** *Fowl-dung is good for the purpose named, placed underneath the Potatoes, not quite close to seed—say three inches from them.*

189—**Pink Currants.**—I remember seeing Red, White, and Pink Currants on the same dish. Can you or any of your readers tell me whether I could get a Pink Currant-bush now?—SALOPIAN.

*** *We think you will find Reine Victoria the pale red variety you mean. Try at any of the large fruit-growers.*

190—**Wall trees.**—I have a wall about 80 feet long, facing south, and should like to know what fruit-tree would do best to train along same? Clay soil.—A NEW SUBSCRIBER.

*** *Very few trees thrive in clay soil unless well drained for roots. It is a good aspect, but you do not give us your locality. See reply to "B." in this issue as to improving the soil. Pears will do well, also Cherries and Plums, but you would do well to get good trees at start. Of course, one tree, as you name, is not sufficient for a 80-foot run. It would be better to wait now until the autumn, as the season is late for planting. Cherries would suit as well as anything. We should like, however, to have a little more information.*

191—**Cannas.**—Please give the names of six or eight of the best kinds? I hear that Italia and Austria are very good, but tall, which is a drawback. Is this so?—R. L.

*** *Try Antoine Chantin, Kaiser Wilhelm II., Louis Thibaud, Paul Bert, Souvenir de Madame Liabaud, and Progress. These are all dwarf compared to the majority of Cannas.*

192—**Aubrietias.**—"E. T." will be much obliged if anyone will tell her how to grow Aubrietias; whether in the shade or on a sunny border, and what soil is best?

*** *These will grow in any cool position where there is a good depth of soil. Too much shade is hurtful*

193—**Willow cuttings.**—Would you kindly tell when is the best time to put in Willow cuttings, and what length they should be, as I have plenty of running water through my grounds?—W. Kay.

*** *It is best to put these in late in the autumn, but they will root freely if done at once. Almost any length is suitable, but perhaps the most so are those from 2 feet to 3 feet long. Even large pieces will root when inserted in the autumn.*

194—**Seed for land.**—I have a piece of land, 50 yards by 15 yards, on which I want to sow seeds, to make a good turf soon. Would you kindly inform me through your valuable paper how much seed I shall require to sow this, and the best way to do it, and oblige?—J. G.

*** *First of all, work your ground well and thoroughly cleanse it from weeds, then dress it down level and fine. Be sure to get it level now, as there will never be a better opportunity than the present. You will find it a good plan to get 5 gallons of the best lawn mixture, and add an extra pound of White Dutch Clover. Sow the Clover separately, after thoroughly and evenly mixing it with a few bushels of fine loam. The lawn mixture may be sown broadcast, but be careful to do this as evenly as possible. Going over the ground twice is the safest plan. Keep birds away by stretching pieces of thread across the lawn. Roll and cut frequently after the Grass is 2 inches to 3 inches high.*

195—**Mossy lawn.**—Will you, or any of the readers of your paper, kindly inform me what I should do to my lawn? It is covered in patches with a kind of Moss, and where this stuff shows itself the Grass soon dies. Thanking you in anticipation.—G. Humpherys, *Leeds.*

*** *Where the Moss grows give an extra dressing of good loam and soot. Moss will not grow upon rich soil. Previous to applying the dressing rake off all the Moss you can. A few weeks afterwards sow a little lawn Grass-seed and White Dutch Clover, at the rate of a pint to 100 square feet.*

196—**Plants for narrow border.**—Please let me know the names of some good plants that would cover the ground quickly, and look well all the year round on a narrow border, 18 inches wide, backed by a high hedge, and facing east; also where I could obtain the same?—H. M. J.

*** *Very few subjects will thrive upon a narrow border so close to a high hedge. You may try Vinca major, both green and variegated, also the common Ivy. Either of these will look fairly well throughout the year, but you cannot have a gay flowering subject in such a position.*

197—**Plants in conservatory.**—I have a small conservatory which gets the summer sun until about noon. Would Callas, Cannas (indica and Crozy's), Lilium auratum and lancifolium, and Tuberous Begonias be likely to succeed in it? Also in what compost should they be potted, and when?—Gwynant.

*** *You could scarcely have chosen better subjects for your conservatory. Pot the Liliums at once, using an 8-inch pot for L. auratum, and only half filling it with a compost of leaf-soil and turfy loam. Place a little sand on top, and the base of the bulb upon this. As the bulb grows add pieces of turf and dried cow-dung to the compost. Mulchings of this description are a great help to Lilies, most of which make many roots from the young growth and above the original bulb. L. lancifolium or elegans may be placed in a 6-inch pot, or three bulbs in an 8-inch size. Pot Begonias in small pots of sand and leaf-soil in equal proportions, afterwards shifting them on to larger sizes and giving a richer compost. You are rather late for Callas, but Cannas may be potted on now, and afforded a rich and not too stiff compost.*

198—**The darkest Red Rose.**—Will you kindly tell me through Gardening the name of the darkest Red Rose, and the treatment it requires? I have small greenhouse facing south. And also if it would flower this year if planted now?—E. J. G. G.

*** *Prince Camille de Rohan. Yes; grow it in a pot in the ordinary way.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Ballyvally.*—Helleborus antiquorum.——*J. M. M.*—Cattleya Trianæ.——*A. Alison.*—Nos. 1, 2, 3, 4, and 5 are varieties of Lupins, none of which are scarlet. They are all different shades of blue, soft rosy yellow, and white, except Lupinus hirsutissimus, which is not included in your collection. No. 6 is Convolvulus major, and here again you will find no scarlet flowers, but blue, white, and rose in various shades and stripes. All of those you send are annuals.——*Bromley.*—Clematis cirrhosa.——*S. Blacker.*—Ruscus hypoglossum.——*A Constant Reader.*—The Tenby Daffodil (Narcissus obvallaris).——*Roc.*—The Daffodil is doubtless princeps, and the Hellebore one of the forms of H. orientalis.——*A Constant Reader.*—The Tenby Daffodil (Narcissus obvallaris).——*Henry Callaway.*—Odontoglossum citrosmum.——*R. L. N.*—Female Aucuba (A. japonica fœ.).——*Bill.*—Narcissus Telemonius plenus.——*G. F. Isaac.*—Odontoglossum Sanderianum.——*Mrs. H. O. Wilson.*—One of the many florists' varieties of the Amaryllis, but probably a seedling. It is by no means a good kind.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Student.—You must write to the Secretary of the Royal Agricultural Society, 13, Hanover-square, London.

Catalogues received. — *Dahlias, Chrysanthemums, etc.*—Messrs. J. Cheal and Sons, Lowfield Nurseries, Crawley, Sussex.——*Agricultural Seeds.*—Messrs. Wm. Clibran and Son, 10 and 12, Market-street, Manchester.——*Seeds.*—Messrs. Cooper, Taber, and Co., 90 and 92, Southwark-street, E.C.——*Farm Seeds.*—Messrs. E. T. Dixon and Sons, Hull.

GARDEN AND PLANT PHOTOGRAPHS, 1897.

The Editor of The Garden and Gardening Illustrated announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—Country Houses and Flower Gardens.—A prize of Ten Guineas, and a Second Prize of Five Guineas, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—Flowering Plants.—A prize of Six Guineas, and a Second Prize of Three Guineas, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—Borders, Groups of Hardy Plants, Ferneries, Rock and Water Gardens.—A prize of Five Guineas, and a Second Prize of Three Guineas for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—Lawns, Old Orchards, Wild Gardens, Grass Walks, and Picturesque Drives.—A prize of Six Guineas, and a Second Prize of Three Guineas for the best ten most varied and distinct views of lawns and lawn trees; evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—Best Garden Fruits.—A prize of Five Guineas, and a Second Prize of £2 10s. for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—Best Vegetables. — A prize of Five Guineas and a Second Prize of Two Guineas for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—Cut Flowers, Table Decorations, etc.—A prize of Five Guineas for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—Vases, Fountains, Garden Houses, etc.—A prize of Five Guineas for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until the last day in October, 1897.

What to avoid.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

First.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

Second.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

Third.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

LAW.

Claim under Market Gardeners' Compensation Act, 1895.—In March, 1895, I took a six-roomed house at a rental of £2 and 1¾ acres of land at the rental of £7, on a written agreement for a yearly tenancy, for the purpose of growing fruit and vegetables and flowers for sale. The term "market garden" is not mentioned in the agreement, but it was well understood between the landlord and myself that the holding was let for such purpose. Finding the land was very poor I, last September, gave notice to quit on the 25th of this month, but the landlord refused to take my notice and begged of me to remain tenant. On the 25th of January I sent him in a claim for compensation for Strawberry-plants at the rate of £2 per thousand, for Gooseberry-bushes at the rate of 2s. 6d. per dozen, for Rhubarb-roots at the rate of 7s. 6d. per dozen, and for Rye at 1s. per rod. Have I overcharged him? I have got most of the ground dug ready for cropping, and I have pared and burnt the ground that was full of Couch, and I have 50 loads of Couch-ashes. Can I claim compensation for that? My landlord contends that my holding is too small to entitle me to compensation. I put up a greenhouse with his verbal consent. He has informed me that he shall expect me to quit when my notice expires, but I have told him that I shall not quit until my compensation is given me. Will you advise on my position?—J. A.

*** As the landlord was aware that you were cultivating the land as a market garden and did not dissent to any of the improvements you made, you may claim compensation under the Act of 1895, although it was not agreed in writing that the holding should be cultivated as a market garden. If the tenancy had commenced after January 1st, 1896, you could not under such circumstances have claimed under that Act. You do not say if there was anything in the agreement about notice to quit—if there was not, the notice you gave was invalid, and you need not quit, for a year's notice was under the circumstances necessary. But any notice stipulated in the agreement would be good. If the notice you gave was a good notice to quit you will have to quit on the 25th, and it does not matter whether your landlord admits your claim or not. If he refuses, your only course is to appoint a referee to act for you in the manner provided by the Agricultural Holdings Act, 1883, and if he declines or neglects to appoint a referee in his own behalf, you must apply to the County Court to appoint a referee for him. The claim you have made for Strawberry-plants and for Rhubarb-roots is good if these are properly planted out, but not otherwise. If the Gooseberry-bushes are permanently set out the claim is good, but if not so set out your only course is to remove them before your tenancy expires. As you have not included the greenhouse in your claim, your only remedy is to remove it, and you had better give your landlord a month's notice that you intend to remove it, although this does not appear to be strictly necessary. If you planted the Rye after giving notice to quit, you can enforce no compensation for it. You are not under this Act entitled to any com-

pensation for digging or cleaning the land, nor yet for the Couch-ashes which remain, and which are available as manure. Neither can you remove or sell the Couch-ashes. Under all the circumstances your better plan would have been to have claimed under the Allotments' and Cottage Gardeners' Compensation for Crops' Act, 1887, under which you would have been entitled to compensation for all growing crops, for all work done since the last crop was taken and done in anticipation of a future crop, and also for any manure applied. You cannot withdraw the claim already sent in if it professes on the face of it to be made under the Market Gardeners' Compensation Act, 1895, or the Agricultural Holdings' Act, 1883, but if it does not show that it is so made you may claim under the Act of 1887, and if you and your landlord do not agree upon the amount of compensation nor upon the appointment of an arbitrator to decide the claim, you may, within twenty-eight days after the expiration of the tenancy, apply to the justices to appoint an arbitrator to settle the matter, and his decision will be final. The Acts of 1883 and 1895 apply to any holding, no matter how large or how small, but the Act of 1887 applies to holdings not exceeding 2 acres which are not within the Metropolis. It therefore does apply to your holding. In any event the amount of the compensation will be such as the arbitrator may award.

Buildings erected by tenants of allotments held under Allotment Act, 1887 (*Allotta*).—The Local Board should not have taken land on such terms unless they found it impossible to obtain other suitable land on reasonable terms; but having taken the land subject to such restrictions as to the erection of buildings, the board should most certainly have embodied those restrictions in the regulations or in the agreements of tenancies. In reply to your questions—1, Sec. 7, sub-sec. 5, of the Allotments Act, 1887, prohibits the erection upon an allotment of any other buildings than those described in the sub-section. The effect of the sub-section is not to give the allotment tenants the absolute and indefeasible right to erect such buildings as are there described—that may be a matter for arrangement between landlord and tenant; the effect is to make it absolutely illegal to erect any buildings other than those mentioned, no matter what arrangement may be entered into between the landlord and the tenant (this must not be considered as applicable to landlords and tenants generally, but only to tenancies under the Allotments Acts, 1887 and 1890, and, in a modified degree, to the Act of 1894). 2, The Local Board (now the Urban Council) had no power to accept a lease containing provisions in opposition to the Act of 1887, but the provision that no buildings whatever should be erected is not in opposition to the Act, although it certainly is not fully in consonance with the Act. If the Board had entered into an agreement with the allotment tenants, permitting those tenants to erect any buildings they thought proper, such provision would have been in direct opposition to the Act. 3, Having let the allotments without any restriction as to buildings the Board could not, and the Council cannot, compel the removal of any buildings permitted by the Act. All they can do is to give the threatened notices to quit. 4, Although the allottees have complied with the regulations they must quit at the expiration of notices to quit properly given to them. They can no more remain tenants as long as they please than the Council could compel them to continue if they wish to give up their allotments.—K. C. T.

BIRDS.

Sparrows and Peas (*Pea Picker.*).—Sparrows are indeed a great pest in suburban gardens, but we should not advise you to try to poison them, as other visitors might take the proffered bait, and results prove rather awkward for you. Why not use galvanised wire pea-guards to protect your crop when just appearing above ground? They are inexpensive, and will with ordinary care last a lifetime. Then, when the Peas are sticked they could be protected with fish-net, commonly called tanned garden netting. This can be bought at a very cheap rate per yard. Numbers of young Sparrows, when beginning to feed themselves, can be taken in common brick-traps, and many an old bird may be taken in the same way, for, curiously, notwithstanding the wariness the Sparrow displays towards other kinds of traps, he cannot resist the temptation afforded by the dainty morsels displayed within the common brick-trap.

Black-crested Cardinal ailing (*G. E. K.*).—Your bird appears to be suffering from inflammation of the bowels, brought on by improper feeding. All the Cardinal family require insect food as well as seed, such as ants' eggs, caterpillars, cockroaches—in fact, almost any kind of insect will be found suitable—and should have ripe fruit when in season. With proper management these birds are easily kept in good health, being very hardy, and will sometimes nest and rear their young in an outdoor aviary. You may continue to give a little bread and milk, but discontinue the hard-boiled egg and Fig-dust. It is to be feared that your bird is in a very bad way, and hardly likely to pull through; however, you must get it on to its natural food as soon as possible. Keep it warm and quiet, and administer about four drops of olive oil, and by means of a feather or camel-hair pencil anoint the vent with the oil.

Breeding Budgerigars (*Constant Reader*).—Yes, these birds will breed freely in an aviary, but not till late in the summer, after they have gone through the process of moulting. They generally begin to moult in June or July, and commence breeding in August, and will rear several broods between that time and Christmas. A Cocoa-nut-husk placed in a retired corner of the aviary, near the top, with an aperture at one end (which should be turned towards the light), will be used as a nesting-place. As many as eight or nine eggs are frequently deposited in one nest, and at about the sixteenth day the young begin to hatch, but as they hatch out in succession some days intervene between the time that the first and last eggs are hatched. In the ordinary way these birds may be fed upon Millet and Canary-seed, but when they have young ones to feed, Oats and soaked bread should be added to their diet. They do not require any special treatment to encourage them to breed, and, being very hardy, they really do better in a well-restricted outdoor aviary than when kept indoors. The male and female of this species resemble each other in plumage, but in the male the naked skin about the beak is sky-blue, while that of the hen is cream coloured.

Green food for Canaries (*C. A. S. M.*).—Yes, small salad as a change of green food is good for Canaries, but do not give your birds Mustard and Cress seed. Chickweed, Lettuce, Groundsel, and Dandelion are all good in turn. Green food may be given daily in small quantities, and freshly gathered; but guard against giving too much at first to a bird that has not been accustomed to it, as this will in all probability cause diarrhœa, and prove fatal in some cases. In a large aviary, however, birds may be allowed as much green food as they care to take.

Destruction of "Stare" or Starlings (*Kerry*).—We would not attempt to kill these useful birds. Starlings eat wireworm, grubs, and insects in great numbers. We have never found them do any harm. You seem to be much afflicted, however, but perhaps some reader can suggest a remedy.

Breeding Linnet mules (*J. V.*).—Your birds will probably pair, but you would have much better chance of success with a two-year-old Canary and a younger Linnet. Early in April is about the time to pair them, but do not put them into the breeding-cage first off, but let them occupy separate cages within sight of each other for some little time, and supply them with a little hard-boiled egg and bun crumbs. In the meantime prepare your breeding-cage for their reception by white-washing the inside (this is more wholesome than paint), and pound some old mortar and mix it with the grit sand to be strewn upon the bottom of the cage to assist in the incrustation of the egg-shells, and to guard against soft eggs being laid. Suspend in the inside of the breeding-cage a little net bag containing dried Moss, soft hay, and cow-hair, to be used in the construction of the nest, and provide two nest-boxes, as in building the nest the hen likes to have a right of choice. It would be a wise precaution to clip the claws of the Linnet if long and sickle-shaped, to avoid accidents to the nest—long claws being liable to get entangled in the nesting materials to the spoilation of the whole business. Linnets paired to hen Canaries are usually very attentive to them and the young, which they feed most carefully.

POULTRY.

Buff Cochins (*Inquiry*).—Cochins are, no doubt, the best of all Fowls to keep in a limited space, as they are naturally disinclined to roam, and as they do not fly, a fence but 3 feet high will keep them secure. To keep them in health you would find it necessary to supply them with an unlimited quantity of green food. They do not produce so many eggs as some other breeds, but they give us eggs at a time when they are most scarce. True, they have the hatching fever frequently, but they are such steady sitters and good mothers that they are valuable not only in bringing out their own broods, but are frequently used for hatching choice broods of any other variety of Fowls. The pullets lay at an early age, and if killed at from five to seven months old are very fine in flavour, and a greater quantity of flesh can be raised within a given time from these Fowls than from most other breeds. The cross with the breed you name would not prove so satisfactory as a cross with the Dorking, which produces a very heavy and well-shaped table Fowl, and a good layer, although not so well suited to a limited space as the pure-bred Cochin. You must avoid supplying Cochins with food of a very fattening character, as they are inclined to accumulate too much internal fat. You will probably be able to obtain sittings of eggs at St. Leonard's Poultry Farm, Ringwood, Hants.

Egg-eating hens (*J. B.*).—One way of curing Fowls of the bad habit of egg-eating is to carefully fill an empty egg-shell with mustard in a thick, pasty state, and put it in their way. A good taste of the contents usually has a lasting effect. Egg-eaters are seldom found where Fowls have a good run, but in small places where they can get but little exercise the hens will scratch up every corner, nests included, the eggs thus become broken—few hens can resist the temptation of tasting a broken egg—and so the bad, hard-to-be-broken habit is acquired. If there is a ringleader in this matter, and she can be detected, kill her, and so prevent the habit spreading. Or you could provide a nest-box with a sloping bottom, down which the eggs roll as soon as laid, dropping into a receptacle below. The board is covered with some soft material, which protects the egg, and in the centre is fixed a china nest-egg. An affair of this kind is sometimes provided where there are egg-eaters, but the difficulty is to induce the hens to avail themselves of it. The laying of shelless eggs sometimes starts egg-eating. Do you provide your Fowls with plenty of old mortar-rubbish, chalk, or broken oyster shells?

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Orange marmalade.—Would you kindly give me a good recipe for making Orange marmalade?—A. M. B.

*** The end of March is the best time for this preserve. Buy as many as you wish—a dozen will make, if fine fruit, six large pots. Cut each Orange into quarters, take out the pips, and cut away every particle of white pith, both from the Orange pulp and the skin; put the skins when quite free from the pith into a saucepan of fast boiling water just to scald them. Then drain and dry them on a cloth, cutting them in thin strips. After taking out the pips and removing the pith from the fruit, weigh the peel and pulp, allowing a pint of water to each pound of the Orange pulp and peel, weighed together, with a pound and a half of the best cane sugar. Put these on to boil in a clean preserving-pan, and bring quickly to the boil. It must be stirred constantly after it comes to the boil to prevent burning. Let it boil sharp until a little dropped on a plate jellies. Put into hot jars, cover while hot with paper, well covered with hot, well-made flour and water paste. Leave until the next day, then write on them and store in a cool, dry place.—B.

GARDENING ILLUSTRATED.

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GARDENING NOTES.

Lotus peliorhyncus.

This is a pretty little plant belonging to a large family, chiefly natives of hot climates. Hitherto I have only grown those with brown flowers, and there are yellow too, but the one now mentioned is an attractive trailer, with scarlet bloom like a miniature Clianthus. I lately got a packet from Thompson, of Ipswich, and seed is now germinating well on bottom-heat. As it is from Madeira, a warm greenhouse is requisite for its culture, though in the summer months in the south of England it may be grown outside in a vase or on a low mound. It has been found suitable for baskets indoors.

Blue Rock Bindweed (Convolvulus mauritanicus).

This is of dwarf growth with me, on the greenhouse stage, while in India it attained many feet in height on an outdoor trellis. It comes from Sicily. Its free-flowering character makes a charming contrast to the "Lotus." Now is the time to sow seeds of both in pans of turf-soil and sand on bottom-heat. The flowers of C. mauritanicus are blue.

The Salvias.

In the North of England our nights are too cold for these very ornamental plants in the open border. I sowed some seed of S. patens early in the season under glass, and raised many strong specimens. These were put out in rich soil when frosts ceased. They yielded few flowers, but on removal in autumn I found myself rewarded by a fine stock of roots, thick and fleshy. They were stored in coal-ashes, and I shall soon start them into growth. S. splendens and S. fulgens equally enjoy warmth, and are easily raised from seed, as also is S. coccinea, a gaudy annual, and may all be used for winter decoration of a greenhouse, 60 degs. to 65 degs. S. rutilans is rapidly increased in a greenhouse. It soon fills a pot with rambling tubers. Besides its vivid scarlet flowers it possesses very fragrant foliage, a bruised leaf giving the odour of ripe Pine-apples. These are the best of a large family, some of them quite hardy. S. patens, S. fulgens, and S. splendens are even to be seen in India, proving their love of heat.

The Calonyctions or Moon-creepers.

This is a charming group of night-blooming Convolvuli. The Italian C. grandiflorus is a snow-white flower, the size of a tea-saucer, on a long green tube, with an overpowering odour; the flowers only expand in the evening. It is a native of the warmer districts, rather common in waste places, but none the less beautiful. The moist heat of a tropical Orchid-house and a frequent syringing with tepid water are needful for this attractive climber; the soil, sandy leaf-mould. C. mexicana, from tropical America, is closely allied to the above, and is sometimes obtainable from British seedsmen. C. muricata, known as "Bona Nox," is a smaller species of a pink colour, with dark eyes. It is even a more common weed than the first, a great ornament to rough hedges, where it multiplies perpetually and makes a lively show in the evening. Treatment and soil as above.

Indian weeder.

Between forty and fifty years ago I saw one of my Indian gardeners busily weeding a flower-bed with a roughly-constructed dibber-like tool, but with a fork-like prong, and was so satisfied with this idea of loosening the soil, and at the same time not harming the roots of plants, that I had one constructed, and still employ this pattern in my garden. I have also a similar one mounted on a 4-foot Ash-pole for the eradication of such stubborn intruders as Thistles, Nettles, Dandelions, and Docks. I drive the blade deep into the soil, with its points well into the offending weed, pressing it well home, with my weight leaning on the staff; with a turn of the wrist the leverage extracts the firmly-lodged tap-root to my great satisfaction. These pointed forks should be forged from tough steel and finished with the file as the points become worn and blunt. They are filed till sharp. From points to handle 6 inches—the blade about 3½ inches across—tapering from 1 inch to ⅛ inch along the flat blade, with a square tong to secure the tool in the wood.

Cucumbers in frames.

During the warm months I find a sunken flower-pot in the centre of my hot-bed beneficial in promoting a moist air. I take a 10-inch size, and stop the hole with a tight cork, and having plunged it, fill the same with water, constantly replenished till brimful. I have never been troubled with any kind of insect or disease in many years' experience, though I have grown several kinds.

The same treatment for young Marrows under glass is recommended when they get full of foliage.

Simple plant-covers.

These I made in India and Africa of skeleton baskets formed of long twigs or Osiers, hemispherical in shape. I covered them with coarse linen or oiled paper, the first-named being the most durable. To resist the wind, any pliant rod bent over these covers, the ends stuck in the ground, gives sufficient security. I need hardly say that hand-lights were not procurable, besides, they are expensive, even in England. The hail-storms, and not atmospheric cold, were the dread visitors, often unexpectedly. If these guards be made of wire they will last for years, the linen roughly stitched around the buttoning and saturated with drying oil.

Tuberous "Geraniums."

I raised a lot of stout tubers of G. Wallichianum from Himalayan seed some years ago at my former residence, and they proved to be quite hardy in severe winters. This is a real trailer, with reddish-pink flowers and neat foliage. They have all perished here. G. armenum, sent me from abroad two years ago, does not grow vigorously, but gives a few large, attractive flowers every summer. It is a very desirable species for a sunny border, and is tuberous; soil, a stony loam, which is also suitable for G. Wallichianum, though a rock garden may be better.

Myrsiphyllum asparagoides.

Some years ago I raised a quantity of flowering tubers from seeds; having a surplus stock, I thought I would test their hardiness. I put some, closely packed, in a large pot of dry soil. I placed a slate on the top to keep out moisture, above that a thick layer of dry leaves. I carried the pot to a place sheltered from wind by the mounds of the rock garden, and left it alone; after a severe winter, when the surrounding vegetation showed buds, I unpacked my store, and found every tuber quite sound. I removed them to their flowering-pots, when they proved as vigorous in growth as those I had housed. "This is quite a revelation," wrote a well-known plant collector to me. This elegant climber is sold in America by the yard, grown on twine, as I have done in the conservatory. I am informed it is a native of South Africa, but I never saw it there in a wild state.

Alstrœmerias.

These beautiful plants are easily raised from seed, and are generally hardy with leaf-covering in winter; not so here, for the fine strong plants I brought from my last residence perished in the first frosts. The seed should be sown under glass in a roomy, shallow box, the long roots being very brittle. They bear the recommendation of keeping fresh as cut flowers, their small, Lily-like, bunched blooms being particularly welcome additions to room ornamentation. Mine were grown in a deep bed of leaf-mould and sand on the margin of a wide herbaceous border facing south. Their beauty increases with age, and they are well entitled to a foremost place in every well-arranged garden. A box with a false bottom, which can be pushed out, is the best receptacle for sowing, as the plants can then be safely handled for taking to their final destination. I prefer A. aurantiaca for vases. W. H. L., *Cumberland.*

WHAT TO DO WITH PLANTS WHEN OUT OF FLOWER.

Although we take a great deal of care and trouble to bring plants into blossom, they are far too often neglected after their beauty is over. This is a mistake, for if we do not accord them some little attention now that they are in active growth, how can we expect them to be satisfactory during their next flowering season? Bulbs may be stood on one side and occasionally watered until they die down, or, better still, placed in a cool-pit for a few weeks and then turned into the open borders among shrubs, or beneath Grass in odd corners, where they will in future have a very natural appearance when pushing up late in the spring. I allude now to such hardy subjects as Tulips, Hyacinths, Crocuses, Snowdrops, and Narcissus in variety. Very few bulbs are of any great service for a second season's forcing, if we except the Freesias, Lachenalias, Ixias, and other Cape bulbs; therefore it is not worth while saving them for the next spring.

Then we have several hardy shrubs, such as the Prunus, Lilac, Azalea mollis, Deutzia gracilis,

and Rhododendrons; also hardy herbaceous perennials like Spiræa japonica, Solomon's Seal, Montbretias, and Dielytra spectabilis, all of which are forced, and too often turned out into cold winds and air immediately their present beauty is past. Now in the majority of cases we might easily have these subjects in even better condition for future service if we did but treat them rationally for the first few weeks after going out of flower; but to turn them out into a temperature 20 degs. to 30 degs. lower, and this at a time when they are making new growths, and have practically been enjoying a summer temperature for two or three months, is a great mistake. It is so little trouble to place them in a pit, frame, or under the latest Vines for a time, until warmer weather prevails. Another great mistake is in neglecting to water them sufficiently.

If our flowering shrubs are to do well they must make good growth the season previous, and with these forced plants we have had such an advantage of preparation for another season, seeing a little care will secure much earlier growth that will naturally ripen or mature correspondingly early, and so be in better condition for forcing once more. Turning to our greenhouse plants, such as Indian Azaleas, Camellias, Genista fragrans, and Acacias, how often these are relegated to the odd corner directly their blossom is past, and yet there are very few plants that resent such treatment more.

Of course, there are several plants that are not worth saving for a second season, such as the Chinese Primulas, Cinerarias, Mignonette, and Rhodanthes, and it is well to cast these away at once after flowering. I do not propose going fully into the correct treatment of these many subjects, but to draw attention to the fact of the too frequent neglect, and point out how necessary it is they be gradually inured to a cooler temperature instead of so sudden and unreasonable a change; also to direct attention to the great need of repotting and assistance from plenty of weak liquid-manures. You cannot have any plant in good condition a second season if you neglect it at this critical period, when it is not only considerably exhausted from forced flowering, but has to make more growth for a future crop. P. U.

SUMMER FLOWERS.

I was at Hampton Court last summer, and was disappointed to see the broad border running by the palace front planted with the stereotyped bedders, edged with a variegated Geranium that wearies one from its constant repetition; but what an opportunity against the old red-brick wall to get a mixed border that an artist would rejoice to paint: a border in a public place to teach the thousands that visit the palace through the year the value of hardy perennials.

Bedding plants

must not be wholly condemned, and it is far from my wish to ignore the usefulness of the Pelargonium, Fuchsia, and many other handsome tender flowers, but they must only be used as helps, not planted to the exclusion of everything hardy and beautiful. Big groups of the Agapanthus, Plumbago capensis, Fuchsias, and Heliotrope are of great beauty, and kept through the winter with small expense of labour and fire-heat. I saw last year a Raspail or Henry Jacoby Pelargonium in an old Italian oil-jar, and thought I had never seen anything quite so rich, and a basketful of Ivy-leaved Pelargonium, too, is in bloom throughout the summer, its pink flowers giving a colour tone much desired.

Distinct beds of hardy flowers.

Another use to make of hardy plants is to fill distinct beds with them, but of kinds of bold colours. The larger Perennial Sunflowers, Erigeron speciosus superbus, Rudbeckia hirta, and Helenium pumilum are very handsome when grown in a bed by themselves on the outskirts of the lawn. In a similar way we can use many plants to form a succession in the same bed—Winter Aconites and Daffodils, for example, in a bed of Lilium auratum, or of some perennial as the Sunflower named. How many pictures of colour the association of Lilies and evergreen shrubs call to mind, especially in the Royal Gardens, Kew, and Mr. G. F. Wilson's garden at Wisley. I rejoice to see that so much good work is now carried out at Kew in the bold grouping of perennials, with the happy result we get in a public place some conception of the beauty of English flowers when planted in an artistic way. C.

A MEXICAN POPPY.

Hunnemannia fumariæfolia.

This beautiful and graceful Poppywort is a native of Mexico, whence it was first introduced into European gardens by means of seeds about sixty years ago by Mr. Robert Barclay. This plant, though flowering best in an open, sunny border, must be treated as a half-hardy biennial, and be continually renewed by seed, which it happily sets and ripens in even cold and sunless summers. I sowed the seed as soon as it was ripe, and it lay dormant for nearly six months, beginning to come up about the first week in March in a cold-house. The charming glaucous hue of the deeply-cut foliage forms a brilliant contrast to the shade of yellow of the flowers. G.

A Mexican Poppywort (Hunnemannia fumariæfolia). From a photograph by Mr. F. G. Pope, Coombe Down, Bath.

Hepaticas.—These beautiful plants are now flowering profusely in a garden in this neighbourhood, and are especially effective at this season, owing to the comparatively few subjects in bloom in the open. Plants left undisturbed for some time will ultimately develop into strong clumps, when they are highly appreciated by all lovers of the hardy flower garden desirous of an early spring display. The collection here referred to is growing with great vigour on a western slope, in soil of a deep and lasting kind, such a condition evidently suiting this subject very well. Hepatica triloba, H. t. rosea, and alba were each represented, the blue and rose-coloured blossoms being very free and pretty. There is also a very good double red sort. Any reader possessing a partially shaded position in his garden would find these charming flowers a very welcome addition for an early spring display.—D. B. C., *Highgate.*

THE KITCHEN GARDEN.

STARTING A HERB GARDEN.

In reply to "Herbalist," who certainly asks for information on a subject of which less information is given than many others, we will give him the best we can, but regret being unable to go into the medicinal properties of the plants in question at any length. We presume "Herbalist" is aware that the majority of Herbs need but little cultivation when once established, and many may be obtained from seed. Some of these we will describe. Unfortunately we do not know of any gardening work which treats fully on the subject. I fear there will be a difficulty in obtaining stock from any nursery. A botanic garden or some old-fashioned country garden would be better places.

Tarragon is one of our most useful herbs both in a dried and green state. It is best planted now by division of roots, and requires better soil and position than many others. Chamomile is one of our best medicinal herbs. It is a perennial herbaceous plant, requires a light or well-drained soil, may be raised from seed or by root division at this season. We advise the latter, as the plant soon makes a good growth. There are two varieties, the double and single. The double is best for quantity, but for medicinal purposes the single is the strongest. Horehound, another hardy perennial, is a wild plant in some places on the coast; it is a splendid herb for many purposes, and it may be propagated by seeds sown in March, or by root division, as advised for others named above. It is not fastidious as to soils when once established. Hyssop, an evergreen, bushy herb, is not common. It may be raised from seed or root division, and it likes a warm, dry soil. It also strikes freely from cuttings placed in sandy soil in April.

Lavender is so well known that few words are needed to describe it. There are several species. The common one, L. vera, does well in good soil, and is readily propagated from cutting in the early autumn. This is likewise a medicinal plant, but it is mostly employed for perfumery. It may be sown in April in the open ground in a warm soil. Rosemary, an evergreen shrub, is useful for several purposes, and may be propagated by seed, roots, or cuttings. The last-named should be rooted about July or August from good wood.

Pennyroyal, a herb closely related to Mint, is most useful for decoctions, and is of simple culture, thriving best in good soil in a moist situation. It is best propagated by division in early spring. Sorrel is more a salad than a herb, useful for its leaves in spring. It is of easy culture. Tansy is easily grown, doing well in ordinary soil, and is propagated by root and cuttings. Wormwood is propagated by seed and division in the early spring. Mallow is a coarse-growing herb obtained from seed and division, and grows in any soil. Rue is grown in moist soils readily by seed or cuttings in the early spring. Angelica may be sown in spring. There are other herbs and some such as Mint, Thyme, Sage, Balm, but those named above are less known, and now is a good time to prepare soil and make a start. All are used medicinally. G. W.

Flavour of Cucumbers.—I think the flavour of these esculents grown out-of-doors in hot climates very superior. Every Hindoo owning a small plot of ground trains the plants on his hedge or on tree-branches stuck in the earth, and in European gardens they are put in a row on sticks, like climbing Beans, attaining many feet in height. The combined sunshine, constant rainfall, and heated soil produce an immense crop of medium-sized crisp specimens. There is also a long, slender, smooth kind much in demand at the native markets, grown on the bottoms of Maize-fields. Cucumbers are a

popular diet in the East, alleviating hunger and thirst, and their cost (three for a halfpenny I have known) strongly recommends them to the black working-man, who devours them as we do any fruit, besides adding them to his frugal stew.—W. H. L.

NOTES UPON CABBAGES.

Few vegetables are more appreciated in the early spring than the Cabbage. I mention the spring as it is a season when most persons like this vegetable, but there are other periods of the year when one may have Cabbages of the best quality, and what is more useful, too, than a plot of tender, succulent Cabbages—not large caterpillar-eaten, yellow-leaved objects which have done duty for months and which are termed Cabbages, but are really scarcely fit for pigs. I am aware many think Cabbages of no value only in spring, but this is a fault—it is culture which is needed. Many of our most popular vegetables are far from being, as a rule, well-grown, and the amateur is not deserving of blame any more than the professional gardeners. I have often seen Cabbages in gardens occupy the same quarter for nearly two years merely to save trouble, and by so doing rob the land of its value, and the produce cannot be compared to a crop quickly grown and the soil again prepared for a distinct crop. My aim in these notes will be to show the amateur that by attention to variety, by quick growth, and change of soil few vegetables are more useful and more profitable, or grown with so few failures as the Cabbage.

The variety illustrated is an excellent spring one, not one of the earliest, but one of the best of the Enfield Market section or type. It has a large ribbed leaf and conical head. The variety requires space to do it justice, and those who like a fine-looking exhibition Cabbage will find it most suitable. On the other hand, I would not advise it for all soils. It does well in heavy land, and its season is April to June. My idea of a good amateur's Cabbage is Ellam's Early Dwarf, and I am aware that amateurs who like a very large head would not prefer my taste; but my contention is that size in a Cabbage is not a recommendation. I like a small, quick-growing Cabbage, and to plant again for a future crop. I admit when a large variety of the Enfield Market type is grown the plants after the first cutting produce a lot of small heads. These, though useful, do not come up to my standard of a good Cabbage and I am not in favour of the large varieties on that account. Out of many thousands of Ellam's we rarely get any that run to seed, but I have seen many do so when a large variety is grown for early use. On the other hand, it is not fair to condemn varieties, as it is often the grower's fault when the plants run.

Seasons are not always favourable, but so far as my own experience goes few vegetables are more hardy if given proper attention and seed-sowing is done at the right season. Of late years varieties have increased very much. There is no need whatever to complain of variety. Most of my readers know that to get good spring Cabbage, to give culture now would not assist in securing a crop this spring, but I would remark that many sow too late. A poor plant is late in producing a head, and Cabbage is more valuable in April than in June, is of better quality and may be had in abundance if sown at the right season. A Cabbage in summer—that is, from July to October, may not be required with an abundance of other vegetables, but I find a quickly-grown summer Cabbage a delicious vegetable sown now and planted out on an open quarter in good soil. It is of more value than many would think, but here quite a different type of Cabbage is needed. The one illustrated is too large if the weather be dry or hot. It would taste strong, and strong Cabbage is an abomination; indeed, this fault has been the reason why so many object to this vegetable. Such kinds as Little Gem are superb summer Cabbage. These sown in March or April may be cut in July and August. Another very fine amateur's summer Cabbage is Model, a medium grower, and excellent for the early autumn supplies. This sown at the end of April or early in May will give a return through August and September. Another point worth noticing with summer Cabbages of the types above are the small space they occupy, thus making them real amateurs' varieties. Few small cultivators grow the Coleworts, or what may be termed winter Cabbage, probably the most useful of the series, as in the winter the amateur's vegetable supply is limited. A good breadth of Coleworts is invaluable. The Rosette is the best, but the Hardy Green will keep up a longer supply. It is not so compact a grower or fine in quality. The Coleworts sown in June and again in July will provide a winter supply of tender Cabbage of the best quality, or if large quantities are not needed a July sowing will give a good cutting through November to January. These require little room, and when cut should be cleared and the ground dug for other crops. For spring Cabbage the best results are secured by sowing in July, from the 10th to 20th, according to locality, and sowing thinly. G. W.

Cabbage Early Rainham. From a photograph by Mr. F. Parren, Northgate-street, Canterbury.

Early sowing of Onions.—I strongly advise those readers who are much troubled with the Onion-maggot not to delay the work much longer after this note appears, as I look on early sowing as the greatest safeguard we have from the pest in question. In most cases sowing where the crop is to be grown will not be practicable, and I do not advise this, as sufficient plants for quite a large plot may be raised in two or three big cutting-boxes, and these may be easily transplanted when the weather becomes genial. The advantages of this system far more than outweigh the one disadvantage—viz., the business of transplanting, as the bed may have two or three good hoeings previous to planting, and the young Onions get well ahead of any weeds which spring up after the last hoeing. A handy man will plant the young Onions faster than he can thin rows sown in the orthodox way, and they may be planted at regular distances throughout. A long trial of the many plans that are advised has convinced me that early sowing is the best preventive that can be used to ward off the fly, which appears to fight shy of the tougher growth of these early-sown plants while it can find any more easily pierced. The bulbs keep at least equally as well as any grown from late sowings, for I have no difficulty in keeping them sound until the autumn-sown bulbs are fit for use. Well-decayed leaf-mould should be freely mixed with the ordinary garden soil, as this promotes free root-action, and the plants may be easily lifted from such soil without injury to the roots. I use boxes 4 inches deep in which to sow the seed, and give no drainage but the rough screenings from the leaf-soil, which are thinly spread on the bottoms of the boxes. The seed germinates freely if the boxes are placed on a gentle hot-bed, but every care should be taken to promote a slow and regular growth without undue forcing or sudden checks. The varieties on which I depend for the main crop are Nuneham Park and James' Keeping, old and well tried varieties that have hardly been surpassed. Of the larger varieties I like Cranston's Excelsior, which is a splendid type of Onion for exhibition, and of excellent quality.—R.

About Gourds (*Anxious*).—We are pleased you found the note on Gourds useful. You cut too much growth away from your plants, and by so much food the plants are small to absorb the same. In fact, you are too good to them—killing them with kindness. Give manure less often, thin out weak growths, and stop strong shoots, but otherwise leave plenty of foliage. You need these to make ample roots. Without roots you will not get fruit. Last autumn, too, was very wet. You should not have watered, but given a dry fertiliser on the surface. We advise you to leave more shoots on the plants when growing.

TREES AND SHRUBS.

PRUNUS MYROBALANA AS A HEDGE PLANT.

Of late years the above plant has been recommended for making hedges, and has already been planted extensively on some estates for this purpose, but whether it will succeed equally well in all soils I am not prepared to say. My experience of it is that, like all Plums, it makes a much stronger growth on wet, heavy soils than on a dry, poor one, The best hedge of this that I have seen so far is growing in a soil almost approaching clay, and I could recommend it for such soils where a difficulty is found in establishing anything else. There is one thing most necessary in planting this Prunus to form hedges, that is, it must be pruned well back for the first few years after planting to secure sufficient shoots near the ground to form a good base to the hedge. Where this is not done, owing to its erect habit of growth, there is a danger of its becoming top-heavy and thin at the bottom. Another matter which intending planters of this should bear in mind is that both rabbits and hares are particularly fond of it, and where these are numerous it will be necessary to protect the young sets against damage. Even in after years, during spells of hard weather or when other food becomes scarce, rabbits are likely to seriously damage the hedge by barking the stems as far up as they can reach. Where there is no fear of this, and where the plants are managed well from the first in securing a good base, there is every likelihood of this forming a strong hedge against cattle, but I would warn anyone not to use it in gardens, particularly small ones, as the roots would extend a considerable distance on either side, and quickly impoverish the soil to such an extent that it would become practically useless for other crops. I have been tempted to make these remarks after noticing that this Prunus is often advertised as suitable for making hedges, and there may be some who, not knowing the character of the plant, may under a mistaken idea plant it round their gardens, for which it is not suitable for the above reasons.

While writing on this subject, I am reminded of a shrub which occurred to me recently as being suitable for forming neat hedges. I allude to the common Juniper, which is found growing in a natural state on the downs here. I have recently used a number of these plants in the pleasure ground for different purposes with very good effect, and in doing so I noticed what very sturdy growth the plant made in the poor soil and the bleak position on the downs; even the seedlings which spring up annually are not pleasant to handle without gloves, so sharp is the thorn-like foliage. This shrub is also proof against the attacks of rabbits or hares, and for this reason alone should prove valuable on some estates, while with a little care as to trimming each season, it should form an impregnable hedge both for gardens and the margins of ornamental clumps, as its pleasing shade of green would be much appreciated, especially during winter, affording a diversity to the landscape which is not obtained when Quick is used. This plant is increased easily from seed, a batch of which might be sown annually, to form useful shrubs for different purposes on large or small estates. R.

Chinese Plum (Prunus sinensis).—How shall I treat a Chinese Plum when it goes out of flower? And when and how can it be propagated?—S. C.

*** As the flowers of this beautiful early-blooming shrub are borne on the old wood, pruning must be deferred until after its flowering period is over. It is one of those shrubs which require very little pruning beyond removing the very weak and immature growths in the centre of the plant. With regard to its propagation, that is a very simple matter. Young, half-ripened shoots inserted in sandy soil, and placed in a close case, will soon emit roots; but the quickest method of securing a stock of large plants is by layering.

SPIRÆA ARIÆFOLIA FOR CUTTING.

The accompanying illustration shows how valuable the flowers of this Spiræa are for cutting and using boldly in a simple jar. In Gardening, March 13th last, we gave an illustration of S. Lindleyana in a vase, but S. ariæfolia is more useful for cutting than that species. The flowers are more abundant and "plumy," so to say, and if judiciously cut no injury will accrue to the shrub The Guelder Rose, Mock Orange, Lilac, Almond, Azalea, Berberis, Winter Sweet (Chimonanthus fragrans), Garrya elliptica, and Magnolia are other instances of shrubs whose flowers are very handsome when cut for vases.

Flowers of the Feathery Spiræa (S. ariæfolia) in a vase.

Dwarf Conifers for South Wales.—Will you kindly give me names of two or three of the most suitable dwarf Conifers for a north front in South Wales—very cold—at as early date as possible?—L. S.

*** The following list includes a few of the most useful of dwarf-growing Conifers. No special treatment is necessary, as they thrive well in ordinary garden soil. Podocarpus Koraiana is a very handsome evergreen. It forms a small bush of erect habit. Its stiff branches are thickly clothed with deep, glossy green leaves. Height, 3 feet to 4 feet. Cupressus Nootkænsis compacta is very graceful. It is exceptionally hardy and thrives splendidly in dry soils and exposed positions. Abies excelsa Clanbrasiliana is a dwarf-growing Spruce rarely exceeding more than 3 feet to 4 feet in height. It forms a very compact dense bush with bright green sharply-pointed leaves. Biota orientalis semper-aurescens (Golden Arbor-vitæ) is one of the most effective of golden-coloured Conifers. It is of compact habit and globular in form, and thrives admirably in cold soils. It keeps its colour much better than the ordinary Golden Biota. Taxus adpressa is a low spreading shrub with numerous branches thickly covered with dull green leaves. It is, however, of somewhat slow growth. Retinospora ericoides is one of most distinct Conifers of its class. Not only is it beautiful in a growing state, but it is equally—and, perhaps, more—beautiful in the autumn and winter when its leaves assume a reddish-brown and bronzy hue. Wherever dwarf Coniferæ are cultivated, R. ericoides should find a place. Height, 4 feet to 5 feet. R. plumosa, R. obtusa pyramidalis, and R. filifera are also very handsome, particularly the last-named, which is of a beautiful pendulous habit. Thuja occidentalis Ellwangeriana is another hardy shrub of good habit, and, like the Golden Biota, is not at all particular as regards soil or position.

Night-scented flowers.—For many years I have sown Mattholia bicornis and Schizopetalon Walkeri, and have planted Nicotiana affinis in my garden, that I might get a whiff of their fragrance after a hard day's work in the City. These are all night-scented flowers, and have each their distinctive odours. The first two are hardy annuals, and the other is a half-hardy annual. I have also the Evening Primrose (Œnothera odorata), but its name is somewhat misleading. I wish to know if you could kindly give me the names of any other plants which throw out their perfume after sunset! The Hesperis tristis, or Night-scented Rocket, I am told, is another desirable plant. I intend planting it this season. The charm of these night-scented flowers is that they are mostly white or light-coloured hues of other colours. But white largely predominates in sweet-smelling flowers, and Darwin showed that the proportion was 14·6 per cent. of white to 8·2 per cent. of red flowers. I suppose the reason is that white or light-coloured flowers usually open at eventide, as the White Campion, Evening Primrose, Nottingham Catchfly, etc. Dark colours would not be perceived by the night-flying insects, and thus there would be no opportunities for crossing or hybridising. It would be quite a boon to the hard-worked City man if our florists paid special attention to the raising of night-blooming and night-scented flowers. — John Norris, *Didsbury*.

*** Sweet Peas, Martynia fragrans, Mignonette, and Stocks could be added. Perhaps some of our readers would help our correspondent too.

Daphne indica on own roots.—This is generally increased by grafting on to the Spurge Laurel (Daphne Laureola), but one great disadvantage of this is that large excrescences frequently form at the point of union, and detract considerably from the beauty of the plant. True, if low, this portion can on repotting be kept below the surface of the soil, but the fact remains that in most places where it is grafted in quantity the union is too high, to be covered with soil, and besides this, cuttings are not at all difficult to strike, and they form far more satisfactory plants afterwards. The best cuttings are formed of the current season's shoots, taken about midsummer or perhaps a little later, at which time the roots will have lost their succulent character and become partially woody. Those that appear likely to branch out freely should be selected and made into cuttings. A good plan is to put the cuttings around the edge of a 4-inch pot which has been well drained and filled with very sandy compost, in which peat largely predominates.—H.

OUTDOOR PLANTS.

HERBACEOUS PLANTS MASSED.

Much time can be saved in a garden, and more pleasure got from it, if herbaceous plants and bulbs are used instead of bedding-out plants, and if they are planted to a certain extent as if they were bedded out. By doing this a permanent bed is obtained which will have a totally different appearance at several seasons of the year, and yet at all those seasons there ought to be just as much a mass of bloom in the bed as if it had been planted with nothing but, say, Tulips and "Geraniums."

These beds have the great advantage of having (at one or two of their seasons, at any rate) an appearance which is not seen every day and yet is quite as effective as any of those "bedded-out" beds which are to be seen by the thousand. There are dozens of ways in which these beds can be arranged, as I will show.

Few herbaceous plants are more effective than Perennial Phloxes, and the many beautiful shades of salmon, rose, pink, red, lavender, violet, and white which can now be easily obtained, make them a flower which it is easy to have a collection of. The only things which Phloxes do not like is a very light soil, an insufficiency of manure at their roots, and a very dry summer. In any moderately good soil, and given a moist season, they can easily be grown, if the bed in which they are planted is well dug and manured to begin with. In a naturally rich, rather stiff, moist soil, they luxuriate and require little attention. Of the salmon shades Tempête, and Aurore, Flambeau are very large-flowered, and are of a lovely shade, In the scarlets coccinea, Earl of Wemyss, Abundance, and Schliemann are very bright and good, and in pale pinks Sheriff Ivory and Sibylle are lovely. In heliotropes Lucie Baltet is an especially good one, but in these, as in all collections of plants, it is much the best plan for anyone wishing to obtain one, if possible, to visit a nursery at the season when that plant is in flower and make a selection for themselves. I have merely mentioned a few, which I feel would please everyone, for the use of those people who have no opportunity of choosing for themselves.

A bed or border, in which Phloxes are to figure, having been well manured, must be planted with them at a distance of a yard and a quarter apart all over the bed, so as to secure such an effect as I mean. Then at the time they flower in the autumn it will seem as if it was a complete and well-filled bed of Phloxes, and the effect both near and at a distance will be bright and beautiful. So much for the autumn effect; now for the summer one. Delphiniums, planted half way between the Phloxes, all over the bed, will produce a rich effect in summer, and there are so many beautiful Delphiniums that everyone who loves a garden is sure to wish to have a good collection of them. Belladonna is a lovely sky-blue; Mrs. James Helme is a beautiful mixture of blue and mauve; Madame H. Jacotot, bright sky-blue; Avocat Deliege, violet-blue; Alopecuroides, a full blue; Beatsoni, very brilliant dark blue. Eclipse, George Taylor, General Ulrich, Gloire de St. Mandé, Hendersoni, Illustration, Leonce Bart (a pale blue with brown eye); Madame E. Geny, Pompon Brilliant, and Prince of Naples are all beautiful, and (with the exception of Belladonna) very strong growing, and thrive admirably in such a bed as I have described. The soil and preparation of it which suits the Phloxes will suit the Delphiniums also, as I have proved by experience. Now for the

Spring effects

of such a bed as this. I recommend Narcissus Princeps to be planted 2 inches deep all over the bed, excepting where the Phlox and Delphinium plants actually occupy the ground, and these Narcissus ought to be about 3 inches apart for a good effect. They will flower the end of March and nearly all April. For earlier in the year have Winter Aconites netted all over the bed between the Narcissus, and plant these about 2 inches deep and 2 inches apart. They will provide a lovely effect of soft green and bright yellow during February, and the bed will prove itself charming at four different seasons, each time in a perfectly different way, and each year it will increase in beauty. A top-dressing of well-rotted manure, in which there is not much straw, must be given it every November, as soon as the plants are cut down, and a slight covering of soil sifted over it in January before the Aconites appear. The Delphiniums must be cut down to within about 4 inches of the ground as soon as they have done flowering. Narcissus leaves must not be cut, or the bulbs will be ruined. The dead flowers and their stems ought always to be taken off flowering bulbs, but never the leaves. This applies to all bulbs, so I shall not repeat the fact in any of my later notes.

There is nothing sweeter or more beautiful than the old Lilium candidum (Madonna Lily), and a bed, which at its flowering season (July) seems to be full of its tall spikes of lovely white flowers, is not only so deliciously sweet that it

A border of Perennial Larkspurs (Delphiniums). From a photograph by Mrs. Robert Jocelyn, Davenham House, Northwich.

scents the whole garden, but is as lovely a sight as anyone could wish to see. If these are planted with their crowns about 3 inches beneath the surface, at a distance of about 14 inches apart, the effect will be all that will be desired, so far as the season for the Lilies goes. For the autumn effect nothing is more suitable than some other tall-flowering Lily (such as the Tiger Lily or Lilium speciosum) planted between the L. candidum. Three bulbs in a group between the Lilium candidum, or, if preferred, Galtonia candicans, planted in groups of four bulbs between the Lilies, would be lovely in the autumn, and their bold tall spikes of white flowers would make the bed a sight which would not easily be forgotten. An advantage which these tall white autumn-flowering Hyacinths have is that they are not expensive, which the Lilium speciosum would be, planted in a mass. For spring, Hyacinths answer very well in this bed, as they are over before the leaves of the Lilium candidum out-top them, and the effect of the Lily leaves as a groundwork for the Hyacinths is lovely. I have a bed of this description myself, and use the blue Hyacinth Charles Dickens in it with a result which I find satisfactory. It is one of the Hyacinths which flowers between the very early ones and the late ones. These Hyacinths I have proved will flower for many years if left undisturbed, and although they do not have as fine individual spikes after the first blooming season, their effect in the bed is equally good afterwards, as many smaller spikes replace a fewer large ones, and so far as a mass of bright blue goes the result is just as good. These will flower in April and for a fairly long season, and for an earlier effect there is nothing so suitable as Snowdrops, netted in between them as thickly as possible. These flower in February, and for that reason are more suitable than Crocuses or Scillas for this bed, as the Lily leaves rather monopolise the bed a little later on, and the Scillas and Crocuses are not fully over before the Hyacinths come into flower. I need not add that this bed must be well mulched in the autumn, but I can add from experience that if well mulched it will yield a satisfactory effect year after year.

Herbaceous Pæonies are lovely in a long border about 5 feet wide. The bed wants to be well and deeply dug, and plenty of farmyard manure added to it previous to the time of planting. About a yard apart is the best distance to plant the Pæonies, and there are none of them more free-flowering, strong-growing, and lovely than Whitleyi, Caroline Allain, Marie Houillon, Marie Lemoine, Annie Fache, Eugène Verdier, Comte de Manteuil, Duquesclin, Triomphe d'Alma, L'Elegante, Madame Calcot, Festiva maxima, Jeanne d'Arc, and Couronne d'Or. That there are scores of others a visit to a good nursery will soon show, but these are amongst those which I have found satisfactory myself. This bed of Pæonies will be beautiful in June, and for an autumn effect nothing could be more suitable and effective than a row of Tritoma Uvaria (Flame-flowers), planted in clumps down the centre of the bed, and good clumps of Anemone japonica alba planted between the Pæonies (the Pæonies must be planted a foot from the edge of the bed, which will leave a space of a yard in the centre between the two rows) down each row. Thus in the late summer and autumn there will be a row of Tritomas in the centre and a row of White Anemones down each side of it, and the effect in scarlet and white will be very striking. If the old-fashioned double Daffodils Narcissus Telemonius plenus were planted 2 inches deep everywhere where there was any space left for them, the bed would be a mass of rich golden-yellow in April, and this is the way I have planted mine. The bed will need a thoroughly good mulching of rotten manure every year (and a little mould sprinkled over the top of it to hide it) and it would be best to mulch it in February. Nothing in the bed must be cut down until the winter, but after the Pæonies have done flowering the dead flowers must be cut off and the leaves tied rather closer together than during the flowering season. Tying them up like this (if done carefully) will do no harm, and it leaves an open space, and so gives light and air to the Anemones and Tritomas.

Mrs. Robert Jocelyn.

Brugmansia suaveolens.—I have found this elegant shrub of too rapid and lofty a growth in my greenhouse. I first obtained a rooted cutting, and after several shifts it was planted in a tub of rich soil, filling it in eighteen months, and had reached some 10 feet in height, touching the glass-roof. It was then removed to a well-manured hole in a south border, where it continued to increase in size, without a sign of flower-buds. I took off some vigorous shoots, which are now strong specimens, and put the unwieldy parent in a sheltered corner of the kitchen garden, where it has probably perished during winter. This is often seen as a slender tree of 15 feet high in the front of a South African house, its huge blooms of overpowering fragrance loading the air in the evenings. It is called by the Colonists Moon-

flower. I also saw the more rare B. Knighti (the double-flowered form of the above) in some good gardens. The climate appeared to suit them as well as their native land of South America.—W. H. L.

FURTHER NOTES ON TUFTED PANSIES.

During the summer the plants must be given an occasional rest. The plants are so free that unless a rest be given to them they begin to get weedy, and the flowers, too, are puny. For this reason it is wise, when the plants show signs of a strain, to pick off all blooms and buds, and also to thin out coarse and overgrown shoots. By carrying out this practice the young growths are encouraged to make progress, ultimately taking the place of the older ones removed, and again giving blooms of great beauty and refinement. The plants also keep more compact in form, and, consequently, are better appreciated. On the evenings of hot days a dewing overhead with a syringe or fine-rosed can is an excellent plan to keep the plants fresh and healthy. An occasional watering, and a thorough one, too, must be given, alternately using manure-water. This practice of disbudding ought to be recognised two or three times during the summer if a long and continuous display be the aim of the cultivator. Towards the end of July and the early part of August cuttings must be taken if autumn planting be proposed.

It is necessary by the autumn-time that the plants be of good size and well rooted. This can only be ensured by their propagation being commenced in good time. As a rule during July and August there are innumerable young growths pushing their way up through the base of the plant. These should be detached at a length of, say, about 3 inches. It must be distinctly understood that these are the only form of cuttings that will succeed and give really satisfactory results. Stem cuttings should never be taken except the variety may be new and the stock very scarce. It rarely occurs that good plants ever follow the propagation of stem cuttings. The propagation is best when carried out in the open during the summer months. A position should be selected where there is plenty of light, but free from the influence of the sun—at least, during the warmest part of the day. A little bed should be made up, incorporating with the garden soil plenty of leaf-mould and coarse sand. This should be levelled down, and the cuttings inserted to about 2 inches to 3 inches apart. Water them in with a fine-rosed can, taking care to label each variety carefully at the time of propagation. Under ordinary circumstances the cuttings should be rooted in a week or two. When rooted they may be allowed to remain in the same position until autumn planting commences. If plants are wanted for the spring they may be transferred from the propagating-bed to a similarly-prepared bed in a warmer aspect, giving each plant more room—say, 4 inches to 6 inches apart, and then by spring they should be ideal clumps, and in a condition to provide an early display of bloom.

Ground intended for autumn planting should be got in readiness as early as possible in the season, giving that part of the garden a good manuring with a free use of soot. Turn up the soil roughly, and allow it to remain fallow until the first or second week in October. Plenty of room for the plants to grow should be allowed, and care taken to plant firmly. During the winter, and especially after a thaw, it is advisable to go over the beds and press the soil firmly around the plants, and a mulching of some compost resembling that already described will be beneficial. There is one great advantage in rooting one's own cuttings, and that is the plants may be lifted with a nice ball of earth around the roots, and so avoid any serious check, while on the other hand the Pansy specialists almost invariably send their plants carefully mossed, but without a particle of soil adhering to the roots.

It is well to prepare the beds intended for spring planting as early as possible in the autumn, throwing up the soil in ridges, and in the early spring digging in with the fork plenty of manure and a sprinkling of soot, levelling down and breaking up the soil at the same time.

From August until November propagation may be carried on as occasions offer. Boxes and frames, with or without frame-lights, may be utilised. When a frame is used keep the frame-light off as long as possible, only covering the frame during a long spell of wet weather or any very hard or prolonged frost. Personally, I believe in rooting every plant in the open, and this may easily be ensured by starting in good time. Plants resulting from this treatment with me, when planting-time comes in the spring, may not always be as promising in appearance as one would perhaps wish; but as a rule, and within a few weeks of being placed in their permanent quarters, they appear to be full of nice healthy growths, and ultimately develop into plants of large size. D. B. Crane.

FLOWERS BY WATERSIDE.

Few there are but will allow that the voice of running water is pleasing to the senses. The murmur of the stream is soothing to the ear, associating itself with bending leaf and perfumed blossom to form one of Nature's harmonies of sound, colour, and fragrance. There is but one mode of gardening that the streamlet's curving course and inequalities of bank admit. I do not allude to cases where the water is carried in a straight line between level borders, when it assumes the character of a ditch rather than of a rivulet—it is the arrangement of hardy flowers in natural groups. There is, fortunately, no scope for the bedder-out; the foot-rule is useless; the crudities of gaudy-coloured triangles and concentric circles are impossible. Lines of Scarlet Geranium, Yellow Calceolaria, and Blue Lobelia are impracticable; but though at no time is there a lavish display, what is lacked in brilliancy is gained in variety, and from the commencement of spring until December there are flowers at the streamlet-side; in the former season Snowdrops, Scillas, spring Snowflakes, and early Narcissi, and in the dark days of the year the bright crimson of the Winter Flag and the lavender blooms of Iris stylosa. In such situations the Iris family does well; the Japanese Iris (I. Kæmpferi) planted in light, rich soil in the damper places, the Spanish and English bulbous varieties in drier positions, the former requiring lighter compost than the latter. The tall Irises, I. ochroleuca, I. Monnieri, and I. aurea, are also most effective, throwing up lofty spikes of bloom from 5 feet to 6 feet high and increasing in beauty year by year. Iris sibirica forms large clumps when well established, and is especially fine in moist ground, while the sweet-scented I. pallida will thrive in almost any site. Spiræas are among the best of waterside flowers, and breadths of S. japonica, S. filipendula, S. palmata, and S. venusta should be planted here and there, S. Aruncus and the shrubby Spiræas, ariæfolia and Lindleyana, being allotted a position in the background, where, associated with hardy Bamboos, tall Lilies, and other stately plants, they succeed admirably. The Campanulas, such as grandis, with its white flower-spires, and C. persicifolia, as well as the lower-growing varieties, should be freely utilised. Mimulus and Myosotis, both M. dissitiflora and M. palustris, flourish as carpeting plants, and soon fringe the brooklet's edge with gold and azure, while the graceful trails of Muhlenbeckia complexa drooping from hanging bank will veil the Moss-grown recesses with their elegant tracery. Ranunculus Lingua (the Giant Spearwort) is a beautiful waterside plant, its large yellow flowers being very handsome.

A garden streamlet. From a photograph.

The value of a stream is naturally much enhanced when a sudden break in the channel forms a cascade. The monotone of the ever-falling water—"the sound of loud repose"—is the embodiment of tranquility, and even in the torrid summer heat diffuses around an atmosphere of coolness, especially so when it descends

"Where no beam can burn
Through frondage of the Fern,"

into a shady pool that temporarily arrests the current's rapid flow.

The subject of the illustration hardly merits the appellation of a streamlet, and should more correctly be termed a rill, yet, though on so small a scale, it forms an attractive picture, beauty not being dependent upon size. As will be seen, it is spring-time. The white Poet's Narcissi at the brink of the fall are in full bloom. The clump in the shade at its foot has but one expanded blossom, and the flowering period of the Spiræa japonica is not yet at hand. The London Pride is at its best, and throws its gracile flower-heads into strong relief against the Ivy-mantled side of the old dipping-well into which the water pours. The Fern fronds have not yet uncurled to their full lengths, and the Forget-me-nots by the variegated Day Lily in the foreground and in the crevices of the old tree-bole in the distance will blossom more profusely ere long. S.

CHRYSANTHEMUMS.

SINGLE CHRYSANTHEMUMS.

The usefulness of these charming Marguerite-like flowers for decoration can hardly be exaggerated. When seen in well-grown condition and in the choicest varieties, persons who have hitherto failed to be struck with them take up their culture. From an educational point I think the manner of exhibiting the singles which now obtains fails in its object, because the disbudding practised makes the individual blossoms too large, and the stiff wiring takes away their grace. It is the long branches or sprays of blooms grown naturally on the plant which give one the best idea of the value of single Chrysanthemums for cutting or for the decoration of conservatories.

The culture of this pretty class of flower is very simple—that is, there are none of those somewhat puzzling items as bud-taking, pinching, and so on. We must, of course, top the plants to make them bushy, but there is no necessity to trouble oneself as to a particular date when it is to be done. Like other Chrysanthemums, however, they repay attention in such phases as careful watering and timely repotting. To be understood, it may be well just to give a few hints on

CULTIVATION.

If not already done, cuttings should either be put singly into small pots or rooted in boxes, to be separated when struck. The former plan is preferable, perhaps, as the season is somewhat advanced. Any compost of a sandy nature will do, and the open greenhouse is an excellent position for the cuttings. Do not keep them too close; an occasional sprinkling with water will prevent them withering. Slight drooping does no harm, and in a week or two the cuttings will have formed roots. When not struck separately do not delay the potting off. The plants must not be coddled in heat nor neglected in the matter of moisture. In a cold frame or on a shelf near the glass the cuttings will readily assume a sturdy habit and growth will be rapid. Take out the points of the shoots when 6 inches high to form bushy plants, repotting being done a little time before or after this operation. Use 6-inch pots for the weaker. The soil may be composed of rotted turfy loam and rotten manure, the latter being passed through a sieve. I prefer breaking up the turf, so as to retain all the fibre. Two kinds of loam may be used, and road-grit or coarse sand added. Mortar-rubble sifted is also an excellent material to keep the compost open. Allow abundance of air to reach the plants, and give open-air treatment the moment danger from frost is over. Stand them well apart; ample space to grow is one of the secrets of well-developed foliage. Sticks should be used before the stems get large and are likely to break without supports. Watering also must be regular.

Another topping of the shoots may take place when they have reached a length of 4 inches. In tying pull out the branches somewhat to allow room for the inner portion of the plant to extend. About June the final repotting should be done. Pots 9 inches in diameter may be used for the larger specimens and 8-inch ones for those plants which are less sturdy. Miss Rose, for instance, a charming single Chrysanthemum, must not have too large a pot. This variety is my own ideal. The blooms are small, star-like, and the colour rich. It is very dwarf and branching in growth, and so free to bloom as to literally cover the leaves with flowers. Pot firmly; this is an essential point. The soil may be similar to that noted for the previous shift. An addition of bone-meal—1 lb. to the bushel—is, however, beneficial, but refrain from the use of other mixed fertilisers in the soil Stimulants may be applied later. Watering must not be carelessly done, and the usual means should be taken to keep the plants free of insect pests. Sticks should be used for all principal branches, and yet another topping may take place if thought necessary. The two operations in that direction, however, should produce enough shoots to furnish a well-formed bush plant. In no case should a plant be topped after early July. Then the stems may take their natural course, and the flower-buds which appear sooner or later, according to the variety, may be allowed to develop at will.

At this period right up to the time of blossoming it is desirable to aid the plants by stimulants, either in a liquid state in dry weather and by surface applications during showery times. There is a good choice of suitable manures, and it will suffice to say here that they should be used in a weak state and often, rather than in strong doses. Soot-water is among the best of stimulants for Chrysanthemums. It is not used nearly so much as it should be. Being so ready at hand and so simple lead some to fancy there are no virtues in it. I have known the singles left in the open till last, and whilst other classes of the flowers are safe under cover, the more modest Chrysanthemums under notice have finished unsatisfactorily through being caught by frost. The end of September is a good time generally to place the plants under glass. As to

VARIETIES,

there is a wide selection. I will first mention a few of the best of the dwarfer kinds. Some persons desire this short habit of growth; and, again, tastes differ in the matter of size of flower. Some like the large Sunflower-like look of the yellow Admiral Sir T. Symonds; others, the Daisy-like form of the variety Miss Rose. All, however, are pretty. Sorts with small flowers and dwarf in growth are Dolly Varden, rose-pink; Lemon Queen; Lizzie Mainwaring, white; Miss Annie Holden, yellow; Mary Anderson, white tinted; Jane, pure white; Miss Rose, bright rosy-pink; Treasure, yellow, late; The Echo, terra-cotta; Mrs. D. B. Crane, cerise-pink, lovely. Eucharis is a new white of perfect form and habit. Other first-rate kinds are Admiral Sir T. Symonds, yellow; Alice, blush-pink; America, blush, late; Bertha Jinks, deep magenta; Emily Wells, clear pink; Golden Star, yellow; Mary Jeal, deep rose; May Wells, crimson; Miss M. A. Bates, white; Miss Crissy, chocolate, fine; Miss M. Wilde, cerise; Oceana, blush; Purity, white, fine; and Rev. W. E. Renfrey, crimson. Two new varieties which appear particularly pleasing are Kate Williams, rich yellow, and Mrs. A. E. Stubbs, pure white. H.

HAIRY CHRYSANTHEMUMS.

These are almost the newest examples of the raiser's skill, and those who have been acquainted with the Chrysanthemum long enough will remember the somewhat sensational advent of the first of the series, Mrs. Alpheus Hardy, which originated in Japan, and was sent with other novelties to a lady in Boston, U.S.A. The next was Louis Boehmer also of Japanese origin, and then came W. A. Manda, and one or two more.

These early importations, having got into the hands of European raisers, were not long in being utilised for seed, and one of the first fruits of their labours was a collection sent out by M. Santel, in which were found several interesting forms. But the hairy section does not appear to have made much headway with the large exhibitors at our leading shows, and the varieties already in general cultivation look to me more like dwindling away than increasing in public estimation. Two years ago at Southwark-park there was a capital collection of these novelties, and they attracted some attention from the visitors; but they are more likely to prove of value for decoration than as show flowers. While on the Continent recently I saw some very fine examples, in which the colours were brighter than those we usually see in England. That may have been due to climate, which operates in a curious way on many varieties, for often those kinds even in the other sections that do well in one country fail in another and *vice versâ*. At Ghent and at Paris especially there were some really attractive blooms seen, and for the benefit of any reader who desires to make a selection of some of the newer forms, I have thought it useful to mention those that pleased my taste the most during the time I was away.

Single Chrysanthemum Mary Anderson.

The following will, amongst the new hairy varieties, prove satisfactory to those who admire them, if fairly well grown, without severe disbudding, and always provided that our climate is not against them.

Raphael Collin.—Japanese-incurved, florets of medium width and grooved. Colour a beautiful shade of golden-bronze, reverse silky yellow.

Rachais.—Japanese-incurved, a very attractive variety. Colour rich reddish golden-bronze, reverse very bright gold.

Maurice Boissard. — Japanese-incurved, with rather broad florets, deeply grooved, and blooms very solid; pure golden-yellow.

Leocaie Gentils.—A bright pale golden-yellow sport from Enfant des deux Mondes.

Frere Jovinus.—Japanese-incurved, florets very narrow and grooved, and having a peculiar lustre. Colour golden-chestnut-bronze.

Dragon.—Crimson and gold, might be described as a hairy Edwin Molyneux, only the florets are much narrower.

Mme. Sckareck.— Japanese-incurved, with very narrow grooved florets, very silky in appearance; pale blush with yellow shade in the centre.

Mme. Henriette Berloz.—A very large Japanese-incurved, but thin; floret narrow and curly at the tips; silky blush.

Abbe Pierre Arthur.—Japanese, with medium-sized florets loosely incurving; colour a glistening bronze.

Beaute Lyonnaise.—Like most of the section, a decided Japanese-incurved, but having narrow florets and ball-like in build; colour dull crimson, centre golden.

Duvet Blanc.—Japanese, and, as its name implies, white in colour.

Gloire Lyonnaise.—A Japanese, with long, drooping florets, good size; colour rosy-pink.

Souvenir de Nicolas Belisse.—Very pretty Japanese; colour bright terra-cotta, shaded goldon-bronze, reverse golden.

Souvenir de Molines.—Japanese, with rather medium-sized florets, curiously pointed and curly at the tips. Colour golden-bronze, streaked carmine-red.

Mme. Fertal.—Japanese-incurved, with very narrow florets, deeply grooved; white, shaded pink.

Amaranthe.—Japanese, with narrow florets. Colour indicated by the name; very rich and deep in tone; reverse, silvery.

Hairy White. — Japanese, with tips of pointed florets incurving, rather close and compact, and a large flower. Colour white, tinted yellow.

Mme. X. Rey Jouvin. — A very pretty Japanese-incurved, with broad grooved florets. Blooms of good size and very globular; pretty shade of deep rosy-pink.

Acajon.—Japanese-incurved. Colour inside deep crimson-chestnut; reverse of golden-bronze.

Mme. J. Chaure.—A very deeply-built flower of the Japanese type, florets rather narrow and sharply pointed, long and drooping. Colour deep reddish-carmine, with reverse of gold.

Piquemal de Rozeville.—Florets sharply pointed. Colour dull crimson, with reverse of golden-bronze, tipped gold. An effective variety.

Belle des Gordes.—A Japanese-incurved, with rather narrow, grooved florets; very close and compact in build. Colour very pretty pale pink, tinted yellow.

Fleur Lyonnaise.—Japanese-incurved, with flattish florets. Colour dull rosy-carmine, reverse golden.

Mrs. Leslie D. Ward.—Japanese, with long, drooping florets, and rather broad. Colour, a delicate shade of bright gold-cinnamon or buff, reverse bright golden-yellow.

Proviseur Poirier. — Japanese-incurved; dull carmine-crimson, with golden-bronze reverse, tips golden. One of Calvat's new seedlings.

C. Harman Payne.

ROSES.

Gloire de Dijon Rose-cuttings.—I have tried to strike these several times, but failed. When is the proper time to strike them, the treatment, and the kind of soil? I have a cold greenhouse; would it do to try them in that, or would they do better in the open?—J. P.

*** Rose-cuttings generally promise remarkably well during the early stages and make an abundance of fine healthy callus at their base. Then when new growth is commencing they die off rapidly, and in the most unaccountable manner. We have had good takes with summer and winter cuttings, also in the open and under glass. Try again next autumn, and use ripened wood, putting several cuttings around a 6-inch pot of sand, loam, and leaf-soil in equal proportions. Plunge in a cold pit or frame until early spring, when remove to the greenhouse, plunging the pots again, and giving them a little bottom-heat, if possible. This last is a great help. But you can root ripened wood outside if inserted upon a sheltered border during September and October. The average amateur succeeds better in the open than under glass, the least neglect being fatal.

Rose Duke of Teck *(Inquirer).*—Duke of Teck is a good grower, and needs very little pruning. We cannot say the reason of its not making satisfactory growth, but you certainly overpruned it last season; otherwise, your aspect and treatment seem correct enough.

FRUIT.

NOTES ON PEARS.

The Pear illustrated (Beurré Diel) is one of the best kinds an amateur can grow. I do not know of any variety more prolific when grown on a well-drained soil on the Quince-stock, and grown thus it gives a good return in bush or pyramid form. I have seen this variety grown as a standard, but do not advise it, as in many amateurs' gardens standard trees are not at all profitable. They shade the soil on growing crops of vegetables. The fruits from such trees are not large, and often get much damaged by winds. In order to grow a good Pear give it a good soil, and let the trees be of such a size that one can thin and feed the fruits. Many of our good Pears do well as dwarf trees. I grant the fruits are not so fine, but the flavour is superior and they keep longer; but I am writing of varieties that are known to thrive. Some need a wall, but most kinds must have good culture and care to get satisfactory results. The variety illustrated grows well on the Continent in a warm soil. It is known there as Beurré Magnifique, and is a splendid fruit. There is no difficulty in this country in getting fruits over 1 lb. weight,

Pear Beurré Diel.

and last season from bush-trees many fruits averaged over ½ lb. each, with a very heavy crop. To get the best quality, however, the trees when in bush form need thinning and feeding. Many persons object to the above variety and call it gritty. In certain soils I admit it is so, but the same may be said of many excellent Pears. Beurré Diel is a November fruit, sweet and pleasant, with melting flesh. It is very large, obovate in shape, and of a greenish-yellow colour, indeed, the fruits are so distinct in character that it is readily known from other Pears, and in favourable positions the skin is very clear and nearly free from russet. On the other hand, in cold soils or in sunless localities it is covered with brown russet. The best fruits are obtained from the Quince-stock, and the tree is best grown as a bush rather than pyramid form. When cultivated in the open as trees it is somewhat spreading, and when grown in pyramid form the severe cutting-in needed to keep it in shape is not good for the crop. Another point interesting to the amateur is to plant this variety in well-drained land. In a heavy wet cold clay soil it is not reliable, and the fruits crack and are of poor quality; indeed, it is loss of time to plant without attention to soil and stock, as the trees grow, but the fruit is not worth eating. Few varieties give better fruits on a west wall, and in cold districts, if a south aspect can be afforded, it is worth space occupied. I have it on a north wall, but I do not advise it, as the fruits are then smaller, covered with russet, and of no value other than being much later. As, however, we have other late fruits it is not needed. In cordon form it is one of our most prolific on a west and east wall, and for amateurs who can grow this variety by the side of walks, grown as espaliers on what are termed horizontals, the fruits come very fine, and are of superior flavour to those on walls, the sun being able to get at all points of the trees.

G. W.

SPRING PROTECTION OF FRUIT-TREES.

Given a fair breadth of coping, whether permanent or temporary, I do not know any better material for spring protection than stout half-inch mesh fish-netting. It should be made of stout twine, and is, under these conditions, rather expensive, but it will last with care for several seasons, and when, in addition to the fact that it is effectual for this purpose, it can be utilised for the summer and autumn protection of fruit against birds, I question if the extra first expense is not after all a very good investment. Peaches and Nectarines are always the first consideration, and after these come the Plums—really, I think, the most useful of all stone fruit, from the length of time they are in variety available both for dessert and cooking. When in both cases one remembers that we are able to pick from the middle of July until nearly the middle of October, there can be no disputing the claim Plums have on the protecting material. A good net that can be put on double thickness (the same thickness is, by the way, preserved throughout all the walls) will be set apart for the dessert Cherries, a fruit that is always much appreciated. Storms of heavy rain and sleet are responsible for the premature destruction of Cherry blossom unless it gets some little protection, and just enough is afforded by a good thickness of netting. It is not often that we can spare enough netting for the Apricots, and in all seasons when there is a good promise of bloom, some extemporised covering is provided for individual trees in the shape of short bits of tiffany, old netting, or even mats fastened to stout pieces of wood or Bamboo poles. If the covering material is heavy it is only put on when absolutely necessary, and of course removed in the morning. In all cases where netting is used care should be taken to see that it swings clear of the trees. This is perhaps best effected by Bamboo poles nearly the height of the wall, placed at the necessary intervals, steadied with a nail at the top, and

slightly lowered into the ground. Pears will not require protection just at present, but an occasional inspection will be made, especially of the best varieties, and the expansion of the bloom will be quickly followed by the erection of the covering. E.

KEEPING APPLES.

It is surprising to see how many mistakes are made in the way of keeping Apples. Many people think that it is desirable to keep them in warm, dry places, but this is a mistake which generally occurs with people who have not had much experience, or who have not taken into consideration the conditions under which Apples will keep to the best advantage. Many amateurs and small growers make an error by gathering the fruits very early and afterwards consigning them to places totally unsuitable for keeping them, with the result that before half the winter is over they have not a decent fruit in the place. On dry, airy shelves they shrivel, lose their flavour, and are worthless compared with those which are kept in boxes, cases, or things of that description. They must, of course, be gathered from the trees without being bruised and stored carefully, one kind in a barrel or box, as the case may be. These can be stood in any place where it is free from frost and somewhat damp, providing the frost can be kept out of the cases. Fire-heat need not be resorted to, as covering the fruits up either with cloths or straw is preferable to having heated apparatuses in these structures. All Apples should be allowed to hang on the trees as long as possible, as by so doing the true flavour is got. They will then keep without shrivelling, which is most detrimental to them, especially if they are dessert kinds, as it makes them so tough and uneatable. Some kinds have a greater tendency to shrivel than others. For instance, Manning-ton Pearmain is most prone to this, and for many years I could not keep it fresh on the shelves in my fruit-room (although I had no fire in this place). Last year I resolved to put them in a case and stand it on the bricks. These bricks are always damp, as our position is very low. In this way the fruits do not shrivel. A finer Apple than this I could not name. From January to the end of March as a dessert kind it deserves attention. I make a point of not admitting any air to my fruit-room after the first month or six weeks, as I find the air is most detrimental to keeping the fruit plump, and I also note that those on the lowest shelves are the most solid. Sturmer Pippin I always keep in barrels from 2 feet to 3 feet deep, placing the fruit in these as gathered from the tree, with nothing round the barrels inside. These cases are stood in a potting-shed, facing north, all through the winter, and I generally allow them to remain thus till March, and seldom look them over from the time of gathering until required.

Frequently I have observed that not two per cent. are rotten at the end of this time. The temperature in this shed often goes down to freezing-point. This shows that the keeping out of the air is the chief feature in preserving Apples. Many expensive fruit-rooms are a delusion. Some years ago, when calling on a friend, in April, who had one of these structures, although a noted grower, he had not a decent dish of Apples in his place, all being so shrivelled from dry heat, while the same kinds in our fruit-room were as plump and as sound as possible. Amateurs and small growers have many facilities for keeping their Apples, such as underground cellars, in which there need be no expense, and everyone should have an abundant supply of well-kept Apples until the end of April or May, if suitable kinds are grown and they are carefully gathered and well stored.

J. Crook.

Forde Abbey Gardens, Chard.

Dressing Gooseberry-trees with lime.—This is a good practice, especially in the case of those who are troubled with birds destroying the buds. It has many advantages as well as the one above named; it keeps the bushes free from mossy growth, and assists in manuring the ground. Our method is, as soon as they are pruned, to mix sifted lime and soot together, putting it into a barrel. Mix this with manure-water or urine, with water added to the latter; then get a sink-pail and hold this close to the tree, dipping a broom into it, and throwing it over the bushes till they are covered with it.—J. Crook.

INDOOR PLANTS.

PROPAGATING FUCHSIAS.

This is a very popular plant, can be had in almost all colours and forms, and is almost hardy. Any room will keep them safely through the winter. Old plants are now pushing out new growth, and the tips of these will root freely. They should always be headed, or the points of growth pinched out a time or two during the early part of the season, and these make excellent cuttings.

Prepare according to the illustration, always letting the base of the cutting be immediately beneath two opposite leaves, which should be removed almost to the stem. Fuchsias root very freely in a warm, moist temperature, and do not absolutely require a clôche or propagating-case if partially shaded and frequently sprinkled. Beneath growing Cucumbers is an excellent place. But the aid of a clôche or case is a great help; in this case we must not sprinkle too freely or the cuttings will damp off. Prepare a compost of leaf-soil, Cocoa-nut-fibre, and coarse sand in equal proportions, and insert the cuttings by means of a dibble or dibbler, first of all adding a slight layer of dry sand. When the dibble is withdrawn a portion of the sand, if dry, will fall to the bottom of the hole. It is upon this that the base of our cutting should rest. This, by-the-way, is a most important point indeed; for if we "hang" the cutting—

Cutting of Fuchsia.

i.e., make the hole too deep and so leave a small hollow space beneath the base of our cutting, it cannot callus and root. Several cuttings may be placed around a pot or pan, then well watered and kept close in a temperature of 65 degs. to 70 degs. When rooted, gradually give air and pinch out the points after new growth commences. A week or so after this, pot off singly into small pots, using a compost similar to that they were rooted in, with the addition of an equal part of loam. After this, pot on as occasion demands and give ordinary greenhouse treatment.

Propagating Cinerarias.—I once had an unusually fine lot of large-flowered and well-coloured specimens, and getting no seed from them I propagated stout offsets, placing the pots outside and covering the base well with sandy soil. When rooted each was placed in a small pot, well established. They were planted at the foot of a north wall.—W. H. L.

Freesias in boxes.—Where Freesias are grown for cutting, labour is economised by growing them in moderate-sized boxes. These latter may be large enough to contain about fifty bulbs, and I think that the plants make a stronger growth in them than where 6-inch pots are used. A market-grower in this neighbourhood grows all his stock in this way, and has just finished cutting. I doubt, however, if Freesias pay very well; they come in so early now from the Scilly Isles and elsewhere that the market-grower in the neighbourhood of London must get his plants into flower by January at the latest if he is to make any profit. Some complain that their plants do not bloom freely, and when this is the case, the bulbs have not been sufficiently ripened. After the foliage has died away, the pots should be stood where the soil gets heated throughout by the sun. I stand mine near the back wall of a lean-to house, and the pots at times get so hot that I can scarcely bear my hand on them. I have known the plants after blooming to be stood in a vinery and remain there until repotted again. In this way the bulbs cannot possibly ripen, and when potted they do not start freely. I usually pot mine about the middle of August, and last year they started into growth in less than a fortnight. This early growth was, I am convinced, caused by the great amount of heat to which the maturing bulbs had been subjected.—J. C. B.

191.—**Cannas.**—I may add to the list recommended as very dwarf kinds Mme. Crozy, scarlet with gold edge; Warscewiczi, very dark chocolate-brown foliage, small scarlet flowers. I think the last-named is the smallest I know, but a root is hard to obtain. After much seeking I have got a packet of so-named seed from abroad. Italia and Austria are gigantic varieties only fit for a sub-tropical bed. One of this tall type, sent me by a foreign dealer under the name of Progression, attained 7 feet in height in my greenhouse, with a flower-spike of golden-yellow flowers, spotted with red, 18 inches in length—far too large for my requirements.—W. H. L.

ORCHIDS.

CYPRIPEDIUM MASTERSIANUM.

This Cypripedium, reintroduced by Messrs. Sander and Co., of St. Albans, is now to be found in all the best collections. There is, as was anticipated, a great variety in the flowers; the size may be, and probably is, in a measure due to the vigour of the plants, and nowhere has the writer seen such perfectly-cultivated plants and grand varieties as in the collection of Mr. R. H. Measures, of the Woodlands, Streatham. The finest variety was a dark, colossal flower on a huge, black, tall stem, at least 18 inches in height. But there are all varieties, from dark to light, and the species is as free-flowering and as amenable to culture as it is handsome. It fully justifies all that was said of it by the introducers, and that it will be a very useful and valuable species for the hybridist, its distinct characters conclusively show. The beautiful bronzy-white, yellow, and lustrous copper-coloured flowers are very effective, their bold outlines and great substance being particularly noticeable; the black waxy petals are disposed at right angles to the broad upper dorsal sepal, while the shapely slipper projects forward, varying from a light ochre shade to a deep metallic red, but in every case highly polished. Even in such an Orchid collection as that formed at the Woodlands, where Cypripediums are a feature, C. Mastersianum is conspicuous for its beauty, habit, and distinctness. J.

Cypripedium barbatum and Dendrobium nobile.—At what temperature ought these to be kept at present time, and do they require water now?—Carthusian.

*** Both species may be grown in the East India-house or warm stove, where the night temperature at this period is between 60 degs. and 65 degs., and several degrees higher by day. The Cypripedium requires shade and an abundance of water at all times. The Dendrobium should be in a light position, and if both roots and growth are progressing favourably the plant should be watered each time it becomes dry.

GARDEN PESTS.

Pear-buds eaten (*Journalist*).—From what I can see of your Pear-tree-buds they have not been attacked by any insect; the tips of the petals are withered, but they have not been eaten away. The "little red granules" you mention are the immature anthers. The buds must have been injured by the weather in some way.—G. S. S.

Grubs (*F. E. Chambers*).—The grubs you find in your leaf-mould are those of a fly, one of the Tipulidæ. I expect they would injure the roots of any plant that happened to be near. If you could allow poultry to scratch the soil over they would soon clear the grubs out.—G. S. S.

Caterpillar (*Constant Reader*).—The caterpillar you sent reached me quite safely. When the post came it was not convenient to examine it carefully, so I closed the box again, I thought securely; but when I opened the box later on the caterpillar had escaped, so that I am unable to tell you what it was. Kindly send another and I will be more careful.—G. S. S.

GARDEN WORK.*

Conservatory.

It is a pity Primula obconica has a black mark against its name, for when well grown it is a charming thing, and when plants are raised from seed annually and grown on briskly very handsome plants may be had in 5-inch and 6-inch pots by the autumn. By saving seeds from the largest flowers an improved strain can be originated. There will be plenty of Roses, both Teas and others; for the conservatory it is convenient to have most of the plants in pots, as, after the principal flowering season is over, the plants may be plunged outside. A few climbers may be planted and trained up the rafters. Niphetos, Maréchal Niel, Lamarque, and the old Tea Moiret are always beautiful under glass. Azaleas are very beautiful just now. Large bushes of the old yellow Pontica are masses of bloom and, unlike the Japanese (mollis) varieties, the flowers are very fragrant, bright in colour, and lasting, which cannot be said of the mollis section; these and the hybrid Rhododendrons, if carefully managed, will last in good condition for a long time. Many years ago we had two very fine old plants of the scarlet Indian Rhododendrons in large tubs, and they never missed flowering with the usual freedom; they were too large to place outside in summer, but the house was large and roomy and not very hot in winter. But all Rhododendrons are beautiful when in flower and are not difficult to grow, but in chalky districts they must be potted in good peat, and the pots should be large enough for the plants to grow freely. The only difficulty in chalk or lime-stone districts is the hard water; but this can be obviated by having roomy tanks and catching the soft water. This applies just as forcibly to all hard-wooded plants, including Camellias. If constantly watered with hard water the plants will not thrive so well. Among the hardy shrubs which are or may be forced into bloom now the Weigelas are useful, and the flowers, being lasting, are useful for cutting. I remember the first plant which came to hand of the old Weigela rosea; it was treated as a greenhouse plant, and was grown under glass for some time till its hardiness was discovered; but this pretty shrub is not absolutely happy everywhere outside. Dwarf or half standards of Paul's Double Scarlet Thorn and Laburnums are effective when grown in pots if the conservatory is lofty enough to show them off. Standard Roses may be turned to good account in a lofty conservatory when well grown. This is an excellent way of showing off Tea Roses. Plants will require more water and more ventilation; give liquid-manure to Roses and other plants coming into bloom.

Stove.

Apart from the regular routine work there will be a good deal of propagating, potting, etc., to do now. If a few Orchids are grown (and most people like to have the easiest to manage) some will now be in flower. Dendrobium nobile, several Oncidiums, Calanthes, Cypripediums, Cattleyas, Phaius grandiflorus are none of them difficult to manage in a mixed cool stove. As soon as growth begins repotting or rebasketing should have attention. The materials should be as rough and fibry as possible, especially for the Dendrobes, Oncidiums, and Cattleyas. Rough peat, Sphagnum Moss chopped up, charcoal, and a few bits of dry old flakey cow-manure may be added; though the materials are light they must be pressed down firmly. In transferring the plants to the new baskets or pots all damaged or dead roots must be cut away; use the syringe freely afterwards, but use only soft water. All plants after repotting will benefit from a little more warmth and light shade in hot, bright weather, but 65 degs. will be high enough at night. In ventilating keep out cold winds.

Pines

may have the general spring overhauling shortly. Try and pick a fine week for the job if possible, as the plants will all have to be moved to rearrange and partly change the plunging material. Where the bottom-heat comes from tan or leaves alone the heat now will be on the wane, and must either be wholly changed or partly renewed with fresh material. A few still like to grow their own Pines, but in many really good gardens the Pines have disappeared on account of the cost of fuel and the improved quality of the imported Pines. Pines must have loam of the best quality, fortified with manures or soot or some other stimulant. By removing a bottom leaf or two it will be possible to drop the successions a little deeper in the new pots, so as to encourage new roots to start away. Pot firmly and be careful about the watering till the new roots enter the fresh soil. Use the syringe every fine day and close early in the afternoon.

Orchard House.

A very simple way of distributing the pollen is to tap the stems of the trees with the hand; must be done in the middle of the forenoon when the pollen is dry; a light dewing over with the syringe on a very bright day will be beneficial. Some appear to think the atmosphere cannot be too dry when fruit-trees are in bloom, but this is a mistake; trees may even suffer on a bright day through this cause. Disbud when the young shoots are about 1 inch or little more in length; leave at least one good shoot at the bottom of each branch. Trees in pots must not be allowed to get dry at the root; as soon as the blossoms are set and the young fruit swelling give a top-dressing of short manure. Attend to the ventilation in the same way as if the trees were being forced. To a certain extent all trees under glass are forced, and cold winds must not be allowed to rush through the house. Give a little air early in the morning if bright, and increase this as the sun gains power. Syringe and close at 3.30.

Window Gardening.

I am constantly hearing complaints of Genistas losing their flowers and leaves even when not exposed to gas. No plant suffers so much from irregular watering. If the roots are allowed to get dust-dry the plant soon goes wrong. Repot Palms and India-rubber-plants which are pot-bound.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Outdoor Garden.

Brompton Stocks which have been sheltered in cold frame may be planted. They may be planted in groups in the borders, and a little old Mushroom-manure may be spread among them in the double capacity of mulch and shelter. The White and Scarlet East Lothian Stocks are very sweet, and will flower all the summer. Lilies of the Valley which have been forced may be planted out. The late-forced crowns will, if looked after well, force again next year. New beds of Lily of the Valley may be made now. The site should be heavily dressed with old vegetable mould. The same treatment will suit Christmas Roses and Hepaticas, all of which require special help in most places. Late-planted Roses may be pruned now. Whatever views are entertained by growers about the way to prune established plants, I think all are pretty well agreed that recently-planted Roses should be cut rather hard back. The mulch of manure over the roots is the very essence of success. Old beds of Pinks may be pulled to pieces and replanted. It would have been better if the work had been done last autumn; but there is no fear about the pieces if the old stems are not shortened too much. Pinks treated in this way make charming edgings for the beds in the reserve garden, where the cut-flowers are mostly grown. Seeds of hardy annuals will go on well now. Borders which have not been stirred may be loosened with the fork now.

Fruit Garden.

Sometimes green-fly appears on Peach-trees on walls before the blossoms have faded. These are bad cases, and probably the trees are trained on old walls full of nail-holes. A little Tobacco-powder dusted among the branches will make short work of the flies. Before the introduction of Tobacco-powder the early flies often gave trouble on old walls; but there ought to be no trouble now if Tobacco-powder is used promptly and carefully. It used to be thought necessary to damp the trees before using the powder; but I prefer to use it dry. It is more effectual. Whenever I do any disbudding I have the powder-distributor handy, and if a fly is seen a little powder is dusted around the spot. Better get on with the grafting. The sooner it is done now the better. There is no difficulty in getting grafts to take if put on during the rise of the sap. Strawberries will come in useful now in cold-houses or cold-frames. Strawberries in pots in warm-houses will take a good deal of water. They will require looking over twice a day. If the water is stinted at any time during growth the fruit will not swell off properly, and the chances are red-spider will give trouble. Thin off all small fruits and late blossoms. Each plant is capable of carrying only a given weight of fruit, and it will be found more profitable to take the weight in a limited number of berries than to leave all the fruit which set to swell. The same rule applies to all fruit culture, both under glass and outside. Grapes and Peaches, for instance, if insufficiently thinned, must be small and inferior, though the good cultivator who studies the needs and wants of the trees will take more weight of fruit off them without injuring them than the one who never helps them in any way. There is more in this than appears on the surface.

Vegetable Garden.

Globe Artichokes may be uncovered now, leaving a little of the short manure as a mulch. The plants require a good deal of nourishment during growth. It will be better not to leave them too long in the same position. New plantations can easily be made by digging up some of the offsets which spring up round the old shoots and plant in rows on well-manured land 4 feet apart. Rows of Cauliflowers or some other crop may be planted between the rows the first season. Artichokes are sometimes planted in clumps, three offsets in a clump Some of the strongest will produce a few heads in the autumn if the plants are well nourished and cared for. Long Pod or Broad Beans raised in boxes under glass may be transplanted. No plant bears transplanting better. Peas raised in pots should also be set out, earthed, and staked at once, and as we shall certainly have cold winds yet a few evergreen branches, placed between the sticks on the windward side, will help them to make a good start. French Beans may be sown in warm-frames on gentle hot-beds. Sow Broccoli, Brussels Sprouts, Cauliflowers, and Savoys. Sow Spinach fortnightly; may be sown as a catch crop between rows of Peas. Sow Marrow Peas in the open quarters. The man who after this date sows Ne Plus Ultra every fortnight will have his table well supplied with the best flavoured Peas. New beds of Mint, Thyme, Sage, and other herbs may be made any time now. If preferred, they may be raised from seeds. Sow Radishes, Lettuces, and Mustard and Cress on warm border. Plant Cucumbers in hot-beds.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from March 27th to April 3rd.

Made up a large Mushroom-bed on the north side of a building. A plank 11 inches wide was fixed up to go on the front of the bed, 4 feet from the wall, by driving short stakes into the ground and nailing the plank to it. The space between the plank and the wall was filled in with prepared stable-manure and loam thoroughly mixed—five parts of manure to one of loam—and the whole made firm. Such a bed, if the manure is of the right kind, is not likely to fail. At any rate, after many years' experience, I do not remember a failure. I am not saying that failures do not occur, but the cause is not difficult to find. From force of circumstances men are sometimes obliged to use doubtful materials. They are not sure about the manure. There may be a suspicion of the horses having had physic, or too much bran in the shape of mashes, or too much soft food, and the feared result may come without anyone being to blame. With the right manure, good spawn, and the temperature carefully watched, success is about as certain as can well be. Shifted on a lot of Lilium longifolium. The plants are very strong. Many of the bulbs are throwing up three spikes, and if left in 5-inch pots flowers must be small. So we have shifted on into 6-inch pots. A group of these in the conservatory in May or June will be charming interspersed with Ferns. We used to have a deal of trouble with green-fly. They dropped down into the hearts of the plants where it was impossible for dippings or washes to reach them, and even fumigation was not a success. But the vaporiser settles the flies even right down to the heart of the plants, and we have the pleasure of having pure-coloured flowers free from deformity. Potted off cuttings of many kinds. Cold-pits are very useful now to hold young bedding plants—Fuchsias, etc. Unfortunately, no one has enough of these useful adjuncts to the glass garden. Earthed up Potatoes in frames. Sharpe's Victor on warm south border are just showing through the soil close to the wall. There are hot-water pipes on the other side of the wall, and the borrowed warmth is felt by everything near. I have dug early Potatoes on the border very close after the frames. The ground will be fitted with hoops and mats later on to keep off frost. Dressed over Asparagus-beds with rake. Several new beds are ready for planting early next month. I have planted Asparagus when the Grass has been 6 inches high, which has done well; but it is better not to wait for the growth to get so long. As soon as the shoots are on the move get the plants moved. Asparagus-plants should be raised at home, and not kept too long out of the ground during transplanting. Looked over Vines to stop sub-laterals, tie down the Grapes, etc. The Grapes all thinned in the early-house. Muscat-house Vines in bloom, with a night temperature of 70 degs. There must be a generous warmth to insure a good set without stoneless berries. Planted another house with Tomatoes. Freedom is the kind grown. Very few growers seem to know anything about this variety. I suppose the reason is it is a bad seeder and the seeds are dear.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

199—**Drying Hydrangea-blooms.**—Can you give me any information as to whether there are any means of drying Hydrangea-blooms so as to make them available for winter decoration?—Otley.

200—**Garden edgings.**—I should much like to know what edgings readers of Gardening find most charming and useful in the flower as well as the kitchen garden? I want the question kindly answered from the point of utility as well as beauty. For instance, I have seen the little Quatre Saisons Strawberries used as edgings.—E.

201—**Rock plants and plants requiring shade.**—I want to know the names of about a dozen plants that would thrive in a shady and rather damp situation? The garden is well protected from the wind. Would any of the following be suitable?—Acæna microphylla, Æthionema coridifolium, Alyssum montanum, Campanula garganica, Dianthus alpinus, Linium alpinum, Silene alpestris, Gaultheria procumbens.—C. Lance.

202—**A plague of rats.**—For the last month we have been infested with rats in our garden, within the enclosure of Richmond Park, and they have attacked the Crocuses, which they grub up, leaving all the tops and eating the roots. This has happened both in the flower-beds and in the Grass, and has caused a complete failure in the crops. It has never happened to us before, and in spite of any quantity of poison laid down for them, and invariably taken, and many corpses being found, the evil still continues. Quite lately they have also taken a few of the Van Thol Tulips. Can you suggest a remedy for the future? Would paraffin answer, plunging the bulbs before planting them? Would it injure them?—G. B. F.

*** *The French and spring traps are useful; but perhaps some of our readers can help our correspondent. Paraffin would injure the bulbs probably.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

203—**Rabbit-manure** *(Subscriber).*—Of no use whatever—indeed, positively hurtful.

204—**Use of sea-sand** *(Cuttings).*—When well dried it may be used for lightening ground, but is not suitable for pots, as it is too salt.

205—**Glass of conservatory, etc.** *(Simla).*—Of course, the glass of the roof should be of plain glass—not coloured. The name of the plant is Aralia Sieboldi.

206—**Kew Gardens** *(Scotty).*—Write to the Director of the Royal Gardens. You can only make an application, of course. No doubt if you could get someone to recommend it would be better; but you must first get an entrance form.

207—**Crimson Rambler Rose dying** *(Enthusiastic).*—You have given a too strong dose of manure. Cease giving it so strong, and encourage growth by keeping the plant warm and syringing every day.

208—**Vaporiser** *(E. Goddard).*—Apply to Mr. Richards, Old Shot Tower Wharf, Lambeth, S.E. See advertisement in present issue. Apply to some of the larger nurserymen for the Daphne. We are afraid a large specimen will be expensive.

209—**Conservatory** *(Simla).*—There is no reason why your plan, as proposed, should not work very well. Use a pale green glass on the sides, and have the whole of what is styled 21 oz. weight. Ferns and Lycopodiums would do well beneath the staging, and have a very pretty effect.

210—**Grafting wax** *(Grafting Wax* and *Kismet).*—The above is made thus: Three parts resin and bee's-wax and two parts tallow, or the above in equal proportions, all melted together, and when used slightly warm. There is not much difference. The above is an excellent recipe.

211—**Best six foliage plants, distinct species** *(F. W. H. Penfold).*—We should say the Ferns and Selaginellas are not intended to be shown, as there is usually a distinct class for these. By fine-foliaged plants is intended such kinds as Crotons, Dracænas, Caladiums, etc.

212—**Propagating Ficus elastica** *(Runcorn).*—If you refer to our issue of February 6, you will find full instructions upon the propagation of Ficus elastica. It was for just such a case as yours that the article was written. You would not be able to cut down at once and root. Refer to the back number.

213—**Creeper for shady trellis** *(Young Amateur).*—Very few plants will succeed in the position mentioned. You might try the Canary Creeper (Tropæolum canariense), an annual, or the annual Japanese Hop (Humulus japonicus), but it will be best to have a permanent creeper, such as Ampelopsis Veitchi (Veitch's Virginian Creeper).

214—**Value of leaf mould and spent Hops** *(Bolton).*—Certainly the decayed leaves and growth of any plant are the best fertiliser for the same. Leaf-mould is only decayed leaves, weeds, and the little soil collected with them. Spent Hops are a capital manure and do good upon stiff soils. They are much used by many gardeners.

215—**Christmas Rose** *(S. B.).*—The Christmas Rose enjoys a lime-fed soil and a partly-shaded position. They are no trouble whatever; but if you want clean flowers upon good stems, an old light should be placed over them immediately the flower-buds appear. They can be moved at almost any time, but the best is after leaf has fallen late in the autumn.

216—**Manure for Mushrooms** *(Mushroom Grower).*—The fact of horses having eaten a few Carrots cannot harm the manure for Mushroom culture; but if they have been drenched recently it is often found to injure the spawn, and if you have found any difficulty we should rather say it was the result of doctoring them than from their eating Carrots.

217—**Swollen growths on Pear-trees** *(R. R. B.).*—The swollen growths are the results of bad pruning. Had the trees been allowed to grow unchecked this would not happen. It affects some kinds more than others, but is harmless, and is not a disease of any kind. You will find much of the swelling disappear as growths proceed from the parts affected.

218—**Temperature for Vines** *(J. B. Hanley).*—You must prevent draughts as much as possible. Temperature 60 degs. to 65 degs. Thin to one bud at a growth, and leave the strongest. Syringe freely in fine weather until nearly in flower. Give 5 degs. to 7 degs. higher night temperature when in bloom, and keep the house dry and free from cold draughts.

219—**Violets and Solanums** *(Miles).*—Brighter weather will give more colour to your Violets. You do not seem to have the best variety—viz., The Czar. There is no fly on your Solanum-leaf received, but insects have evidently attacked your plants, and must be destroyed. You should have berries this coming autumn. Water freely, and give the plants a few gentle shakings when in bloom.

220—**Blotched leaves** *(S. H.).*—Aspidistra-leaves must fail in time; but we think you have allowed some strong insecticide to hang at the point of that enclosed, seeing there has evidently been or are a quantity of insects upon those above it. If you could afford it a warm-house for a time, to help the new leaves that should now be pushing up, your plant will soon be all right. Never let water or insecticides collect at the points of leaves.

221—**Crinum amabile** *(Dolly).*—This is a hot-house plant and will not thrive in a cool greenhouse. It is a native of Sumatra, and is a very handsome plant. The flowers are large, white, suffused with crimson, and they are also very fragrant. Pot the bulbs in good loam, with a little leaf-mould and sand; fibrous peat should be mixed with the loam if it is heavy. The other plant cannot be recognised by the name you mention; there is no such plant.

222—**Carnation Uriah Pike diseased** *(May).*—There is no trace of "rust" on the leaves sent, nor is there anything in the appearance of the leaves to cause alarm. This variety and some others have a tendency to assume this unhealthy appearance in winter, and it is caused by the plants being in an unsuitable temperature or atmosphere, or owing to their being root-bound, or the pots not being well drained. Repot the plants if they need it, and as the season advances they will assume their usual healthy appearance.—J. D. E.

223—**Planting border, etc.** *(G. Y. W.).*—You might put Delphiniums, Herbaceous Phloxes, Michaelmas Daisies, and other tall subjects at the back, using Polyanthuses, Tufted Pansies, and Pinks in front. The subjects suitable are so numerous and varied in their requirements that we cannot well give you a full reply. But you must improve the soil with stable-manure if any plants are to thrive. Plant boldly and in groups. The Berberis, Lilac, Syringa, Thorns, Roses, and any other flowering shrubs might be used to break the view, and can be planted upon the lawn. We would use the Lombardy Poplar or the Cornish Elm upon the east border; these grow quickly and do not spread out very wide. You must plant at once; if not, wait until the autumn.

224—**Blood-red Cabbage** *(J. Johnson).*—We are unable to advise traders for the things you mention. See our advertisement columns. Any good house would supply you. Plant Shallots at once. For exhibition you need to plant early in richly manured land. The Shallots should be made as firm as possible; also water during growth with liquid-manure, or give a good fertiliser. Plant the finest bulbs 1 foot apart each way. We do not give the private addresses of our correspondents; all communications must pass through the paper.

225—**Raising Fuchsias from seed** *(New Beginner).*—Gather the Fuchsia-seed as soon as ripe, and place it in a little dry sand for a few days. Then squeeze the whole between your fingers and sow sand and seed together, using a sandy compost of leaf-soil and a little fine peat. They should germinate in two or three weeks in the temperature you suggest, and some will bloom this coming autumn. We know of no work upon the culture of seedling Fuchsias alone, but any amateur florist's guide would almost certainly devote some space to these popular flowers.

226—**Treatment of Agave** *(O. G. O.).*—If the rot has affected the main stem or heart of your Agave it may be serious. Once these are injured they seldom come into good form and shape again. Powder up some charcoal, and dust this freely into the affected part after cutting away as much of the decayed matter as possible. A little fresh cow-dung dribbled into the place is also a useful check and liniment. These plants need more careful handling than their hardy and rugged appearance would imply, and are frequently permanently injured by careless transporting from open to indoor treatment.

227—**Treatment of Vine** *(Irish Medicus).*—You must not fruit your Vines much after moving, as the roots will not be in condition to bear the fruit. The whole energies of the Vine will be needed to build up wood and roots for another year. Allow a free growth this year, feed well, and allow only a very few bunches to remain. We would prefer cutting all away; it will pay you in the end. Thin the shoots, each one to eye; leave the strongest, remove others. You may remove the mulch early next month, and to get more warmth on the surface you may now remove a portion, only leaving short litter.

228—**Poisonous properties of Winter Cherry** *(W. H. J.).*—We presume by Winter Cherry you allude to the berried greenhouse shrub known as Solanum Capsicastrum. The recognised Winter Cherry of florists is Physalis Alkekengi, a very different plant indeed. It is to the Solanums that the deadly Nightshade and many other poisonous plants belong, and, although we have no knowledge of children being harmed from eating the berries of S Capsicastrum, we would hesitate to give them the opportunity. There is scarcely a larger genus of plants than these, or one containing such widely different qualities.

229—**Tomatoes** *(J. P.).*—In our estimation "Perfection" Tomato is about the best variety. You certainly seem to have had too many plants for so small a house, seeing they occupied 10-inch pots, and were probably allowed to grow almost at will. This, with other subjects, would decidedly overcrowd. There is no reason why others cannot be grown with Tomatoes, and your house should have provided a fair crop. Try again, and this time cut off the main portion of large or coarse-growing leaves; also confine your plants to one or two shoots only, pinching out all laterals. This secures more fruit in place of so much succulent growth, and is the practice with almost all market growers.

230—**Azalea pontica, etc.** *(Geo. Leslie Wells).*—Azalea pontica is quite hardy and flowers about June. By Hortensia you mean the Hydrangea (H. Hortensia) which flowers through the summer. Any ordinary loam will grow this, but it needs a little protection during winter. By "Glycinus chinensis" you evidently mean Glycine chinensis, which is the same as the Wistaria, and therefore quite hardy. "Desmodium penduliflorum" is probably meant for Desmodium penduliflorum, also called Lespedeza bicolor; it is a slender shrub, graceful when in flower, and is 6 feet or more in height. It bears drooping racemes of small carmine and purple Pea-shaped flowers. It is a native of China and Japan, and is hardy enough for open-air culture, except in cold districts.

231—**Artificial colouring of flowers** *(M. M.).*—There are chemical solutions of various colours, a few drops of which placed in a glass of water will gradually impart the same shades to many flowers. As the tinge of any desired colour affects the blooms watch and remove to clear water when to your liking. The same solution will serve again, but not so rapidly or with such intensity of colour. We have seen these monstrosities many times, but the name of the solution and the strength to use we have not felt sufficiently interested to learn. Such interference with flowers does not appeal to our taste. The shades are imparted by absorption of colouring matter placed in the water, and the pores of the cut flower kept open and free by cutting off the bottom with a sharp knife—not scissors.

232—**Stocking a conservatory** *(G. Jones).*—Your suggestions of procedure in your greenhouse are so good that we need add little to them. But remember the size of your house and do not overcrowd. The African Asparagus would do admirably at the fourth corner. Clerodendrons will need too much heat for you, and are very subject to mealy-bug and other insect pests. From 50 degs. to 55 degs. is a useful winter temperature, and should be easily maintained in your small house. In addition to your selection of "permanent flowering plants," we would add Begonias, Callas, Carnations, Cyclamen, Indian Azaleas, Acacias, Genista fragrans. But we must cease, or far too many will be found for your limited accommodation. You would do well to read the interesting articles on "A Lady Amateur's Greenhouse," that appeared in Gardening, January 9 and February 13 last.

233—**Azalea flowers small** *(Constant Reader).*—There is a wide difference in the temperature of your house, 45 degs. to 75 degs., which is the reason of the flowers being so small. We advise you to regulate the temperature a little. If Azaleas are required for early forcing, place in a temperature of 60 degs. to 65 degs., and when required for late flowering 45 degs. to 50 degs. is essential. Grafting Azaleas needs a little skill. Select the stock of any strong-growing variety, such as A. Borsig, Bernard Andre alba, or Raphael; but the stock should not be more than a year old. Select strong, soft shoots of the variety to be grown, pinch off the lower leaves, and carefully cut the bark and a little of the wood off for about an inch. Treat the top of the stock similarly, so as the edges of the buds and stock will easily fit together, and then bind with worsted. Keep in a warm, moist atmosphere and in a shaded position. When they have united together cut the ties and pinch off any growth that may start from the stock, so as to put all energies into the graft. When the graft commences to grow pinch the point to encourage growth.

234—**Azalea mollis.**—Have got an Azalea mollis (potted in light soil last November) in an unused bedroom, from which some of the buds have fallen; remainder, however, appear in good condition, yet very slow in developing. When ought it to bloom under above conditions? Have not manured it; slight application of artificial stimulant.—Harricus, *Manchester.*

*** *Your Azalea mollis will bloom about June. An unused bedroom is but little use to hurry on or force any plant, and this Azalea is naturally a rather late bloomer.*

235—**Echeveria agavoides.**—I have a fine plant of this Echeveria. How can I propagate from it?—Seedsman.

*** *Pull out some of the leaves and lay them upon a dry sandy soil in a warm-house. They root very freely, but must not have much water when rooting.*

236—**Paris Daisies.**—I have some of these in pots. I repotted them when they started into growth last autumn, and put them into 5-inch pots; but they appear to have filled these with roots already, and want a lot of watering although not yet in flower. Would it be advisable to pot on into a size bigger, or keep them in the pots they are in through the summer?—L.

*** *This depends entirely upon how large you wish the plants to grow. Paris Daisies or Marguerites always need a lot of water. Feed with liberal waterings of liquid-manure if still keeping them in the 5-inch pots. If you want very big plants pot on.*

237—**How to make charcoal.**—Will you or some of your numerous readers answer above in detail in Gardening? Will any sort of wood do, or has it to be a special sort of wood? And how burnt? I have recently burnt a lot of old wood and garden soil, and that which has been covered with soil appears like charcoal. Will it be of any use as drainage in tree-pots?—W. W. T.

*** *Charcoal burning is a work only understood by those who have a knowledge of the subject, and it must be done thoroughly. Unless you require large quantities you can purchase cheaper than by burning. If your wood is charred through it will do for the purpose named; if not, it will cause soil to get sour and promote fungus growth. Our space does not allow us to go into the subject of burning.*

238—**Growing Tomatoes.**—Will you kindly let me know through your valuable paper if I can grow Tomatoes in a span-roof frame 10 feet by 7 feet? It has 2 feet of brickwork. Do you think I could manage to grow Tomatoes in it? If so, when would you advise to start, and what soil to plant in? Any information will greatly oblige.—An Old Reader.

*** *Tomatoes would do well in your frame. Sow at once. Give as much warmth as possible to get a strong plant. Use good soil, but not manures. When your plants are strong enough plant out in, say, ½ bushel of soil in heaps—one for each plant; then place on wire on strong rope or sticks at a distance of 12 inches from glass. Fasten to top and bottom of frame, and train the plants to a single growth, supported by the wire or sticks. You will get a good crop, but, of course, you must not attempt to grow anything under the Tomatoes. We recently gave an article on Tomato culture.*

239—**Best Self Carnations.**—Would you oblige by giving me the names of a few of the best Self Carnations in various colours, those that do not burst and are smooth on edge of petals?—Stapleford.

*** *Burn, pink; Braw Lass, bright rose; Corunna, deep yellow; Hayes' Scarlet; Lady Ridley, white; Mephisto, crimson; The Pasha, deep apricot; Garville Gem, heliotrope; Carolus Duran, buff; Ketton Rose; Miss Keswick, pink; Waterwitch, blush; Snowdon, white; Mrs. Louise Jameson, rosy-red; Abigail, carmine-rose; Cantab, scarlet; Ladek, ruby-red; Mrs. Eric Hambro' best white.*

240—**Honeysuckle.**—Will this be a success in a vinery? I want it to climb against the glass partition that divides vinery from fernery, the object being to screen the Ferns from the sun.—Fragrance.

*** *You would do much better to use either Clematis indivisa lobata, Lapagerias, Smilax, or Tacsonias than the hardy Honeysuckle. We presume from your nom de plume you wish for perfume; in that case the Heliotrope or Cherry Pie will be better for your purpose than the Honeysuckle.*

241—**Moss on lawns.**—Will you please tell me of a cure for getting rid of Moss in a tennis-lawn without hindering the growth of the Grass?—G. S. Wilkinson.

*** *Your only plan is to rake up as much of the Moss as possible with an iron-toothed rake, then dress with some manure. It would have been better had this been done earlier; but, as Moss only thrives upon poor soil, it is very evident your lawn needs some stimulant. A dressing of coal-soot, wood-ashes, or a little thoroughly-decayed manure is good, and if you sweep this about on the lawn well it will soon have effect. There is ample time for this before the tennis season arrives.*

242—**Bulbs after flowering.**—How should I treat bulbs when taking up after flowering? Should fibrous roots and growth of same be removed?—Harricus, *Manchester.*

*** *Wait until the growth of your bulbs dies down somewhat, when you will find very few active roots. Store in some dry sand or upon a shelf in a cool and dry place.*

243—**Water in tarred barrel.**—Is water which has been caught in a butt tarred inside injurious to plants, especially Tomatoes, Cucumbers, and Carnations?—E. W.

*** *Yes, to a certain extent. We prefer the tar on the outside. We should not use the water.*

244—**Heating apparatus.**—What should be the cost of heating apparatus for an amateur's span-roof greenhouse, 12 feet by 8 feet, as advertised in your columns, and would two rows of 4-inch pipes on one side and the end be sufficient for ordinary purposes? I am sorry to trouble you with such a simple question, but it seems to me the cost of the same is so disproportionate to the cost of the house itself, and as I am only a beginner any advice on the subject will be fully appreciated.—BEGINNER.

*** *We do not like to recommend one firm over another when so many reliable heating apparatuses are offered in our columns. The amount of 4-inch piping you suggest should answer ordinary purposes. Write to a good firm and get the current prices. Ironwork fluctuates so much, and at present is 10 to 15 per cent. dearer than a week or two back.*

245—**Latania leaves blotching.**—Some of our Latanias are affected by unsightly patches. I take the liberty of sending you two leaves to examine, and should be very much obliged if you would kindly inform me what is the matter with them, and by what means to prevent the disease spreading? Hoping you will favour me with an answer in your esteemed GARDENING.—F. PIETERS.

*** *It is not a disease your Palm is affected with, but either drips of cold water from the roof if in a hot-house or being too cold if in a living-room. The leaves are also old, and at some time every leaf must fail. Cut off the worst and give the plant warm treatment for a time to encourage new growth.*

246—**Treatment of Begonia tuber.**—Would you be kind enough to let me know through your valuable paper if a Begonia tuber starting into growth in several places can be cut through the middle, as I have one I would like to make two plants of?—SEVEN YEARS' READER.

*** *Certainly; division is the best way of increasing any desired variety, and you can cut it into three plants if you wish.*

247—**Value of bone-meal.**—In your valuable paper of August 29, 1896, you advised the use of bone-meal early in spring for Peach-trees, and also, as I understood, when the fruits are swelling. Will you kindly inform me if bone-meal is equally good for Nectarines and Apricots, and about what time you mean by early in spring? From your reply on date named I did not clearly understand if you meant a second application of bone-meal or only one, finishing with a good soaking of guano in water?—PEACH-TREE.

*** *Bone-meal is equally good for all stone fruits at this season if applied in the form of a surface-dressing, mixed with burnt refuse, wood-ashes, or old meadow soil as a fertiliser to encourage surface roots. In heavy clay soil road-scrapings or old mortar mixed with the bone-meal are very good, and, given a good dressing now, you will not need to repeat the same later. A good mulch of decayed manure is then beneficial in assisting the fruit to swell.*

248—**Tomatoes for outdoors.**—Would you please inform me in what way to rear Tomato-seed for outdoor cultivation, and in what way to treat the ground when planting out? Last year I bought a single plant for a trial, and was so pleased with the result that I am going to grow a little more extensively this year if I succeed in rearing the seed. I had five branches (Is this too many?) on the plant, and gathered a good many fair-sized Tomatoes from them, besides any quantity of smaller ones which are very useful for cooking. The plant was against a south wall.—DUNNO.

*** *Sow the Tomato-seed as soon as possible, either in a warm greenhouse, in which case place the pan in the warmest spot, or in a hot-bed. Sow thinly in a compost of leaf-soil and sand, and do not overwater in their young stages. Pot on when the rough leaf has formed, and get them as forward as you can before the end of May. Then gradually harden off previous to planting outside. It is very important to get them forward for outdoor culture, and you will do better to plant them 18 inches or 2 feet apart, and keep them to one stem only, cutting away the coarser leaves and pinching back the lateral growths. Any ordinary loam will grow these. It is more a question of early treatment and a warm season than soil.*

249—**Smilax turning yellow.**—Can you tell me the cause of Smilax turning yellow? I had it in February, and I potted it in garden mould and peat, and put it in a warm conservatory. It now looks sickly.—A SUBSCRIBER.

*** *Probably the Smilax has been growing in a much warmer house than you afforded it, and it is also quite likely that you gave it cold soil. So many err in this direction when potting. They do not give a thought to the necessity of having the compost of similar temperature to that the plant has previously enjoyed, but often give it only a few points above freezing. Your compost should have suited it fairly well, but a little leaf-mould and a dash of coarse sand would have been an improvement.*

250—**Seedling Begonias.**—I should be much obliged if you would inform me what size seedling Begonias should be, or how many rough leaves before transplanting from seed-pan, and should they be put back in the hot-bed or hot-house after transplanting?—J. A. C.

*** *As soon as the seedling Begonias have made two leaves prick off singly into small 60 pots and place in a position close to the glass to prevent them from being drawn, in a temperature from 55 degs. to 60 degs. Keep shaded from strong sunlight. It is not essential to place in a hot-bed after transplanting, as serious results are likely to occur in the way of damping off. A rich compost of equal parts of sandy peat and turfy loam finely broken to pieces is suitable.*

251—**After-treatment of newly-sown Grass**—Will you kindly give some directions for the after-treatment of newly-sown Grass in your next number? Should it be rolled, and when ought it first be cut?—NAUTICUS.

*** *It is advisable to roll newly-sown Grass-seed, by which means the ground is made more even, firm, and regular. If sown now the seed will soon germinate, and the Grass can be cut in the early summer. When the Grass is cut for the first time it will be of great assistance in forming a good bottom if a little fine soil be scattered over the ground and the roller put over it again. In a little time the Grass must be cut again.*

252—**Pruning Plumbago.**—Should Plumbago which flowered well last year in greenhouse be pruned; and, if so, how?—AMATEUR, *Perth.*

*** *If the Plumbago is to be restricted cut the wood back; but if required to be grown as a large plant very little pruning is necessary. Only prune sufficient to maintain a good shape, cutting all small green growths back to the firm wood.*

253—**Tomatoes for low, span-roofed greenhouse.**—Please name four of the best Tomatoes for low-span greenhouse?—AMATEUR, *Perth.*

*** *Best Tomatoes are Duke of York, Ham Green, Grangefield Dwarf, and Conference.*

254—**Dates for sowing vegetables.**—Kindly inform me through GARDENING the dates on which I should sow Canadian Wonder Dwarf Bean, Runner Beans Titan and Stratagem, and exhibition Marrowfat Peas in order to have them ready for a show held on the 11th of August?—UNSUCCESSFUL COMPETITOR.

*** *Sow Canadian Wonder Bean early in May, but you will do well to make two sowings—one as advised, another three weeks later. We are unable to forecast what the weather may be, and by sowing as advised you will have two strings to your bow. Sow Peas early in April, and here the same remarks apply. Successful exhibitors sow a little and often, and we would add sow thinly also to get the best results.*

255—**Turves.**—I shall be much obliged for your kind answer to the following questions: What size should turves be cut for sale? What should I pay per hundred for cutting? And what should I charge per one hundred retail or to the trade? It is good maiden turf.—TURFITE.

*** *There is no regular price, either for sale or cutting; nor is there any recognised size. It is simply a question of supply and demand, the cost of local labour, and quantity of turf. Any head gardener or florist would give you an idea of its value in your neighbourhood.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Subscriber.*—It is quite impossible to name so small a piece as you send. If you send a larger leaf, and give us a little idea of its growth, we will name it at once; but a tiny leaf of forced growth reaching us in a bruised and withered condition renders it impossible to say what your plant may be.——*E. H.*—1, Overgrown Sedum probably, but please send flowers; 2, Lungwort (Pulmonaria officinalis); 3, Kindly send in bloom; 4, Ophiopogon Jaburan variegatum; 5, Isolepis gracilis; 6, Rhododendron of some kind, but cannot tell without flowers.——*W. J. H.*—Helleborus viridus.——*John Clarke.*—The plant is one of the Lantanas. Cut it back now rather hard to encourage new wood, and if repotting is necessary do this when new growth is commencing. Light loam and leaf-mould, with free drainage, will suffice. Keep in the greenhouse.——*H. Youngman.*—Cuphea platycentra.——*Mrs. H.*—The shrub is Teucrium fruticans, native of South Europe.——*Mimosa.*—The name of the plant is Acacia dealbata; although frequently called Mimosa, it is quite distinct. You might sow seeds or take cuttings of young growth now. Any good florist can supply or obtain seed for you.——*J. A.*—Epimedium alpinum. It is really a hardy plant, and very pleasing in the rock garden.—*W. C.*—1, Please send flowers; 2, Woolly Woundwort (Stachys lanata); 3, Pinus austriaca; 4, Iresine Lindeni; 5, Cerastium tomentosum (Snow-in-Summer); 7, Rockfoil (Megasea or Saxifraga ligulata).——*Jack, Amateur.*—Euonymus japonicus latifolius aureus. Why are you giving it such a high temperature? It only needs protection during very hard frost.——*W. J. Hodson.*—The small flowers are those of Narcissus pseudo-Narcissus, the common wild Lent Lily; the other is N. Golden Spur.——*E. T.*—Forsythia suspensa.——*E. N. Y.*—The Satin-flower (Sisyrinchium grandiflorum).

TO CORRESPONDENTS.

X. Y. Z.—We know of no work that meets your case.——*Hovbis, Glenacre.*—We do not know the Rose Noble. The Bishop's Weed is Ægopodium Podograria, and the Lamb's-tongue is Plantago media. Johnson's "Gardeners' Dictionary" will suit you. It can be got from Messrs. Geo. Bell and Sons, York-street, Covent Garden, London.——*H. G. M.*—Get Hobday's "Cottage Gardening," 1s. 8d., post free from this office.——*Bryn.*—The Rev. H. D'Ombrain, Westwell Vicarage, Ashford, Kent. Mr. William Paul, Waltham-cross, Herts, has a very good book on the subject.

BEES.

Best honey flowers.—What are the best honey flowers (annuals and dwarfs) to plant near Bee-hives?—M. M.

*** Clover is the best of all honey-producing flowers. Bees will select what they require from miles around. Perhaps some of our readers would help our correspondent.

Royal Botanic Society's programme for this year is an interesting one. An exhibition of spring flowers will take place on March 31st, summer show, May 19th, and Floral Fête and Children's Parade, June 9th. An Imperial Fête to commemorate the 60th year of the Queen's reign will take place from June 21st to June 25th. This is in aid of the Victoria Hospital for Children. There will be special exhibitions by the National Viola, Carnation, and Picotee Societies and the National Amateur Gardeners' Association. All particulars can be got from Mr. J. Bryant Sowerby, the secretary, Regent's Park, N.W.

LAW.

Fencing garden against cattle.—A wall 4 feet in height separates the garden of my employer from a farmyard. There are often cattle in this yard, and they have quite spoiled some shrubs planted on the lawn close to the wall. The farmyard and my master's house and garden are all part of one estate and are rented. Is it the duty of my master or of the farmer to raise the wall to such a height as to prevent the cattle doing injury?—SHRUBS.

*** The rule of fencing is that under ordinary circumstances, every man must fence against his own stock, but to the rule there are numerous exceptions, and this case seems to be an exception. You do not state in whose occupation the wall is—whether it goes with the farmyard or with the house and garden—but under the circumstances it is the duty of the occupier of the wall to maintain it at such a height as will prevent the cattle from injuring the lawn or the shrubs upon it. The party who does not occupy the wall has no right to raise it. If there be any difficulty in the matter probably the estate-owner would raise the wall, if asked to do so, and this seems the proper solution of the matter.

A servant's character.—On leaving my present situation can I claim from my employer the character given to him by my previous employer? I gave my present employer the address of my previous employer, and he wrote to him. On leaving may I take away the plants I brought with me?—A CONSTANT READER.

*** You cannot claim the character you refer to. It was given as a private communication to your present employer. You may, of course, write to your old master and ask him for a character, and he will probably give it you direct. In seeking another situation give copies of testimonials (or characters) and preserve the originals, merely showing the originals on request. If you have not given or sold the plants to your present employer—that is to say, if they have not been regarded by both him and you as being his property, you may take them with you.

Erection of greenhouse.—I wish to erect a greenhouse for trade purposes; it would be of wood and portable, but I am told that if I make it above 6 feet 6 inches in height, I must employ a surveyor. Will you advise me?—E. S. B.

*** Ask your informant for the authority for his statement. It can only be correct if the by-laws of the urban authority require that plans of such buildings must be submitted for approval, and that a surveyor is required to furnish such plans. Generally speaking, by-laws do not cover such cases, but you can do no harm by inquiring of the surveyor as to the authority. If you have any difficulty write again.

BOOKS.

"Le Chrysantheme a la grande fleur" (by Anatole Cordonnier).—This useful French treatise has just appeared in a second edition, and has been enlarged, revised, and corrected from observations made during the past season. The work is divided into four parts and is the result of the author's personal experience; but, of course, it is intended chiefly for Continental growers. All the details of cultivation from the cutting onwards are given. Manures, insects, and diseases, a fully descriptive list, and much other useful information. As a piece of horticultural literature Mr. Cordonnier's work is a distinct success, for it is got up in good style, is neatly printed, is well illustrated, and comprehensive in its scope. The price at which it is published, two shillings, is very moderate, and should ensure a large sale. It can be obtained of the author, Bailleul-Nord, France.

Index of "Gardening."—*The index of* GARDENING ILLUSTRATED *for last volume is now ready. It is published separately, three-halfpence, post free, and can be obtained from this office.*

POULTRY.

Hen with cramp (*E. L. L.*).—Cramp is, as a rule, caused through cold and wet. You cannot do more than keep the patient warm and rub the legs as you are doing. Bathing the legs with a strong liniment of hartshorn will sometimes prove beneficial in cramp. Leg weakness is occasionally caused by the size and weight of the body being too great for the strength of the legs. The remedy in this case is to give strength by more nourishing food and by tonics. Frequent bathing in cold water is also beneficial, which can be effected by suspending the bird, by means of a towel, over a pail of water, so that the legs only will be immersed. If, however, your pullet does not recover the use of her legs within a week or two, she had better be killed, for if it be a case of cramp she would recover in a short time under your treatment.

Preserving eggs.—Three years ago, when the Royal Agricultural Show was held at Cambridge, I bought a box for preserving eggs that was being exhibited there. The box opens top and bottom, and can be turned over as it is fixed on a frame. The instructions were to put in your eggs as they come to hand, and cover with sawdust which has been previously boiled and dried (one of my cooks misunderstood and put it in hot), the box to be turned over every two or three days. I find it answers perfectly, and only a short time ago my cook sent up some poached eggs that were six months old (at my suggestion), and no one detected that they were not laid that morning. I have no interest whatever in the invention. The name on the box is T. Jenson, Stoke, Coventry. Mine holds 144 eggs, and, I believe, cost 10*s*. I have written out the instructions and pasted them on the box.—W. A. Fordham.

White Leghorns (*K. K. B.*).—Leghorns are apt to be deficient in size and weight, which in breeding every effort should be made to develop, and we do not think there is any standard weight to qualify this breed for prize-taking. The hen should be deep, broad, and rather square in make, with full, round chest and plumage closely set. The comb should be bright red, large, and falling over, ear-lobes white and smooth, face red, wattles short, thin, and round, and legs rather long, slender, and of a brilliant yellow. In the male the comb should be single, large, and well grown, the wattles long and pendent, ear-lobes clear white, without any tinge of yellow, the hackle full and flowing, neck long and curved, saddle rather broad, and tail flowing. The wings should not be large, but well clipped up, while the legs, like those of the hen, should be long, slender, and of a brilliant yellow. The hackle and saddle are sometimes liable to become somewhat yellow, which is objectionable and likely to disqualify. Spring chickens are killed at from ten to fourteen weeks' old, and, fortunately for the breeder, there is now a market for much smaller chickens than formerly, because the sooner they can be got off the greater the profit.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Orange marmalade. — Get Seville Oranges, weigh them before you cut them up. To every pound of fruit allow one quart water, 2 lb. good loaf-sugar. Take a sharp knife and cut the Oranges into slices as thin as possible, save all the pips, and cut through pith and pulp just as it comes. Put the sliced fruit into a bowl with the water as above, and the pips tied in a bit of coarse muslin loosely, and leave all for twenty-four hours. Then put in a pan and boil briskly till the peel is quite soft and clear. Then take out the muslin-bag and pips and add the sugar. Boil and keep it well stirred till a little will jelly on a saucer. This is an excellent way of making marmalade, and very inexpensive.—Bridge.

Value of the Sloe.—Has anybody tasted Sloe gin? I find old Scotch whiskey quite as good for making this liqueur. Fill a 2-gallon stone jar with ripe fruits, previously rubbed in a cloth to clean them. Fill up with either of the above spirits. Cork very tightly, secure with twine across the mouth, and seal with melted resin. Then bury the bottle up to the neck in a stable dung-hill in hot fermentation, and leave it there for for a month or two. In a few weeks after this operation break up the soaked fruit in a large vessel, strain the liquor through a horsehair sieve, and add enough sugar candy to sweeten it, according to taste. Bottle off into neat glass bottles of a pint measure. About sixty years ago I found a tramp in a green lane on the rural outskirts of London with a sack and hooked stick in quest of ripe Sloes. "What are they for?" I inquired. "Well, I gets five shillings a bushel for them to make port wine." The Sloe liqueur can be further diluted with French brandy, and I have used the rough, wild black Cherries of the Himalayas for the above recipe.—W. H. L.

AQUARIA.

Gold-fish in deep tank (*G. L. G.*).—The "spongy growth" that appeared upon your gold-fish was most probably caused through the water of the tank being too hard. The water that was at times "turned on" would most likely be much colder than that in the tank, and this sudden lowering of the temperature of the tank water would also be harmful to the fish. Gold-fish thrive best in shallow, stagnant water. Your tank is too deep; you would succeed far better with the water half the depth. If you think of starting gold-fish-keeping afresh, it would be well before doing so to have the tank emptied and thoroughly cleansed, the bottom covered with about 2 inches of well-washed sand and shingle, and the roots of some aquatic plants introduced. Gradually add the water, which should, if possible, be from a river or pond. Do not more than half fill the tank, and when the water has stood for a fortnight or three weeks the fish may be put in. In future do not turn on the water from a tap into the tank, but let any you are going to add be of about the same temperature as the tank water. A few water-snails introduced will prove beneficial in keeping the water clear and free from green growth.

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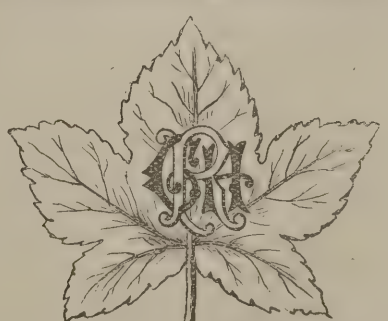
REGISTERED  TRADE MARK.

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No. 943.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* APRIL 3, 1897.

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FRUIT.

NUT-GROWING FOR PROFIT.

Will the Editor of Gardening kindly publish an article upon the successful cultivation of Nuts for the market, or give a few practical outlines on the subject?—W. H. H.

*** Nut culture is well worth the attention of amateurs. Many who grow Nuts ruin their trees by allowing them to produce a forest of sucker growth, which is quite useless. On the other hand, we have seen many failures owing to the "let-alone" system for a time, the result being worthless spray growth. Another point deserving of attention is the source from which trees are secured—whether seedlings or layers. The latter succeed best in certain soils—indeed, in all. Attention is needed as regards variety in certain soils and localities. Some kinds grow better than others. Some growers have a preference for bushes, others trees on a leg or stem. We prefer the latter, though it is only fair to add that we have seen equally good results on what may be termed old stools, which is a many-stemmed bush. Such trees, unless sucker growths are kept down with a strong hand, are the first to go wrong and become unfruitful. Of course, in the case of Nuts for profit the crop is a permanent one, and this allows of feeding and other attentions; but let us add it is useless to feed unless the trees or heads are given due attention also.

We cannot go into the market value of Nuts, but there is usually a good demand (which in certain seasons cannot be met), especially if anyone can store for a time, as at the gathering season there is usually a glut in the market.

Varieties.

Most of our readers are aware the difference between Cob Nuts and Filberts is only a slight one, and some are difficult to distinguish; the difference is in the length of the husks, Filberts having longer husks than the ordinary Cob Nuts. The common Nut of the wood is not a variety to grow for profit, so need not be described. Doubtless most of our Nut-growers are aware the Nut is a huge tree, grown on a single stem. In suitable soil we have seen trees of large proportions. For profit the Kentish Nut is one of the best. This is strictly a Cob Nut, very large, and prolific, and a certain bearer, being liked in the market. It is a variety we recommend "W. H. H." to cultivate. A few seasons ago we saw some splendid trees of this variety in the Maidstone district, and it is a kind that does well as a standard. Another excellent Cob Nut is Webbs' Prize. This produces its fruit in large clusters, and is of first-rate quality. There are some others, such as Pearson's Prolific Cob, a short, round Nut, a great cropper, and smaller than the Cob named above, but remarkably prolific. This rarely fails to bear, and with the Cosford Cob should be planted amongst the larger kinds, as they produce a profusion of male catkins, and these are needed for fertilisation. The Cosford Cob is almost round, with a thinner shell than many; it is of good flavour, and a great bearer. In small gardens this and the Pearson's Prolific are desirable varieties. There are several other distinct Cobs, but the above are the best for profit, though some of the foreign kinds are fair croppers. We now come to the true

Filberts, and probably these are more valued than Cobs by some, but they are not superior, and if "W. H. H." does not want a large variety he should grow the Red Filbert, the best flavoured of all the true Filbert section, a splendid bearer, with thick shell and long husk, having a red skin. It is a good grower and one of the most profitable. This variety is an excellent companion to the Kentish Cob, and we consider that they are the two best for profit. The Prolific Filbert is a fine Nut, produced in greater profusion than the red variety. It has more Nuts on a bunch, with a pretty, frizzled husk. It is a favourite variety for the table. The alba or White-skinned Filbert, a variety often seen growing in country gardens, is a most profitable fruit. It produces freely, but is less in demand than the others named on account of the Nuts being less showy. The Purple-leaved is very pretty, having deep purple leaves and fruit. It is, however, less prolific, but deserves a note for its ornamental foliage. The Kentish Filbert is less known. In the north, on a cold, clay soil, it sometimes fails to grow freely, so we do not say much in its favour, but it is one of the best where it succeeds. The list of Filberts may be prolonged. Many grow the Blanc, a selection of alba, a grand Nut in all respects, and one of the best for market; but it is so like alba that we class it with that good variety; indeed, alba and the two first-named Filberts are the best of the race. A good Filbert is known under the name of Wroxham Park, but we see no difference in it from the alba or White-skinned.

Cultivation.

The Nut likes a good, deep, loamy soil, such as Apples delight in, but it grows on poor soils; also on clay. We find, however, a drained soil is the best if deep. Planting is best done in early autumn, say October, the sap being soon on the move. We advise ample space between the trees—15 feet to 20 feet each way for large trees. This allows of air and sun reaching all parts of the tree. Of course, one may plant much closer, and in a few years, by transplanting every other tree, give the desired space. Previous to planting, trench the land well and manure freely, placing the manure well under the trees. The distance given is for trained trees, but for, say, a tree with a single stem, 1 foot to 3 feet would be best. From the stem should proceed six to nine shoots or branches. Endeavour to shape the tree like a vase or cup, keeping the centre thin. These branches, when old enough, produce lateral growths which are spurred in like an Apple, leaving each year a few inches of young growth on each leader or main branch. On these are produced the catkins needed to fertilise the female blossoms.

Pruning

is best done late, either end of March or early in April. If done too early much of the bloom is destroyed, but so much depends upon season, if early or late, and age of trees, if old or young, and variety. Trees, as they attain size and bear a crop, are benefited by copious supplies of food, either in the way of a top-dressing of decayed manures or liquid-manure, and old trees when once in bearing condition give little trouble. We advise pruning to a short spur growth, as advised, and to keep all sucker growth removed. If the trees show too much wood, stop food supplies. We have found it advantageous to shorten growths early in autumn, and finally prune at the time advised.

When planting, secure good trees at the start. Seedlings are not advisable, but trees from layers; the fruit comes much truer. They can be obtained at a moderate cost if the purchaser goes to a large grower, who grows the best kinds and from layers. Grafting is also a means of producing a dwarf tree, and such trees are very prolific, requiring scarcely any pruning; but they cost more at the start. By getting good trees at the start there is less trouble in training them, as they are trained to a single leg or stem unless bushes are desired. The Nut when grown as advised well deserves an open position, not shaded by other trees, and if due attention is paid to pruning gives a good return. The land between the trees should be kept clean by hoeing. Deep digging is not advisable, and manure may be given in autumn or spring, as much depends upon the size of trees; in fact, there is little labour in the season if the hoe is kept going freely. By manuring in early spring the trees when large get the food at the season required.

Apple Nelson's Codlin.—This is a very late and distinct-looking Codlin. It is a very high-flavoured kind with yellow flesh, and nothing can be better for cooking. It is a large and bright yellow Apple, and keeps well until the end of December. It is a kind I should not recommend to be planted, except it may be one tree, as it is a shy bearer in our garden. We have three trees of it growing in a bush form, and from 7 feet to 10 feet high. During the eight years I have had them under my charge they have not given a bushel of fruit. These trees are from fifteen to twenty years' old, and in the best of health. Nor is it from being too severely pruned, as they are allowed to grow somewhat freely. As they are strong growing, I resolved to try what lifting would do for one of them, about three years ago, as also root-pruning. In each instance the results are no better, and I have resolved to allow them to remain another season, and if they do not improve I shall destroy them. The trees are growing in three different aspects, but they do not bloom to speak of. Such shy-bearing kinds as this Red Astrachan and Reinette du Canada are not worth the room they occupy in our garden, when compared with some other kinds growing by their side.—J. Crook.

Pruning newly-planted fruit-trees.—If pruning is done at all, I would leave it till now, and by so doing the grower can better judge how much cutting is necessary. My plan is to remove all useless spray and to cut terminal shoots, according to the strength of the tree or

the variety, some kinds needing more pruning than others. I certainly advise a certain amount of pruning of trees at this season if they break freely and are of a fair size. In pruning I find it advisable to cut the lateral shoots to within three eyes of the base where they spring from, and to cut strong leading shoots to half their length, as if left in a season or two the young trees present an uneven appearance, being thin in places and crowded in others. Of course, as regards pruning fruit-trees just planted, other means must be taken to get good results. Pruning may have been done earlier, but if the wood is of a fair length it is a simple matter when the trees have broken later on to rub off any buds, and pruning of strong shoots may then be done when the lower buds are well started and growing away freely. Trees left a season unpruned after planting are less shapely than those pruned at the time named.—W.

Plum Pershore Yellow Egg.—This Plum at present seems to be grown principally in the districts from whence it takes its name. In Worcestershire it is grown in enormous quantities for the supply of the midland and northern markets, and such is its prolific character that the wonder is it has not been planted in larger numbers in other parts of the kingdom. It is called by some Pershore Yellow Egg, but this name is, I think, a little misleading, as all the fruits I have seen have been much under the ordinary Egg Plum in size. It is strictly a cooking Plum, and makes a most delicious preserve. It is said, and, I believe, with truth, that large quantities of this Plum are used in the manufacture of Apricot-jam, a percentage, no doubt, of the latter fruit being added to give it the particular flavour.—J.

Pear Passe Crassane.—This is a fine late Pear not often met with, owing, no doubt, to its being rather shy in some parts of the country. Even where it does succeed it will sometimes miss bearing, and for no apparent reason, but this only occurs now and again. In spite of this it should find a place in every good collection, as the fruit comes into use when Pears are nearly over. In some catalogues its time of ripening is given from January to March, but I have never had it in good condition after the third week in January. The fruits should be left on the tree, weather permitting, until the second week in November, and then they are best stored in the Apple room if the latter is separate from the Pear room, as they keep much better in the cooler atmosphere of that structure. If the fruit room is for both Apples and Pears, then place them in the coolest part. This will prevent them shrivelling. Towards the end of the year place them in the Pear room proper or in a warm, dry room, and here they will ripen to perfection. The fruits have a dark brown russety skin, which is thick like that of Bergamotte d'Espéren, and white flesh, which when well ripened is juicy and richly flavoured. As may be supposed, the tree should have a position against a warm wall, and unless so grown the produce is valueless. It does best on the Pear stock, and is one of those varieties of Pears that is greatly improved by double grafting. As regards the form of tree, it is equally good either as a fan or horizontal trained tree or as a cordon.—A.

Plants for zinc window-box *(Lancashire Lad).*—There are not many subjects free from insect foes and diseases of all kinds. As you are at present satisfied with the modest Crocus, perhaps Dwarf Tom Thumb Nasturtiums would suit you best. Sow seed now in the warmest place you can, and plant these 6 inches apart when about 3 inches high. You will gain time by sowing now and planting early in April. Ivy-leaved Pelargoniums and Begonias will also last through the entire season. Next year, when planting bulbs, try the blue Scilla sibirica and white ditto; also Tulips and Hyacinths. They will follow after Crocuses, and carry you round to the time when more tender subjects for early and late summer blooming can safely be planted.

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately, three-halfpence, post free, and can be obtained from this office.*

CAMELLIAS AFTER FLOWERING.

Generally speaking, these plants make their growth and form their bloom buds during the months of March, April, and May, and the more substantial and luxuriant those growths are during that time, the greater in both quantity and size the flowers will be. A proper condition of the roots is one of the main promoters of success, without which other attentions will prove unavailing. It is therefore necessary to impress upon all who desire to have their Camellia-plants in the finest possible condition, the necessity of looking to their roots at the outset, and then by proper attention afterwards success will be ensured. While making its growth there is no hard-wooded plant which will stand watering at the root more freely than the Camellia, and where the drainage is good water should be supplied unstintingly. Whether in pots or planted out, dryness at the roots or in the atmosphere is an evil of the greatest magnitude in the case of Camellias. The soil in which Camellias luxuriate should be never really dry at any time, but it should be kept extra wet during the growing season, and the foliage should be kept well syringed with clean soft water daily, morning and evening. Under such conditions as these healthy plants will produce strong healthy growth which should bear an abundance of blossoms in due season. Where many cut flowers are in demand a good supply of Camellia blossoms is very acceptable, and with this view in mind the plants are well worth all the attention that can be given them during the growing season, as well as at all other times. All kinds of dirt and insects should be cleared off the old wood before the young growths have made much progress. When in bloom it is difficult to syringe them without blemishing the flowers. As a rule, this operation has to be stopped during the flowering season, and then the plants sometimes become unclean; in all such cases it is well to have them thoroughly cleaned before the young leaves are formed. Sponging is one of the surest ways of cleaning them, but it is rather tedious, and where dirt and insects are not very hard and fast heavy syringings will remove the greater part. In the case of Camellias which are planted out, of course, they are stationary, and so cannot be moved into any particular atmosphere, but this need be no drawback against their perfect development, as they grow just as freely and more satisfactorily in an ordinary greenhouse than in any vinery or hot, steaming place. When the plants are in pots or boxes they are generally shifted into some other house (different from that in which they have been blooming) to make their growth—but a very hot place should always be avoided in such cases. There is no denying that Camellias will make long shoots in a close, heated shady atmosphere, but the finest flowering plants will never be produced in such a place. A temperature of 60 degs. at night and 70 degs. by day with sun-heat is most suitable to the substantial growth and perfect development of the wood and buds of the Camellia. A liberal admission of fresh air on fine days does them much good, as the growth is then rendered firm from the first, and its thorough ripening early in the season is an absolute certainty. Apart from securing plenty of growth and flower buds the ripening is of the utmost importance, and too much attention cannot be given to this, as imperfectly opened flowers and buds dropping prematurely are some of the results arising from unripe wood. The earliest wood will, as a rule, give the earliest blooms, and when Camellia flowers are wanted in October and November, early growth and an early ripening of the wood will supply these without much difficulty. When once the bloom buds have been formed syringing should cease and more air should be given, but nothing like a drier state at the roots should at any time follow. Dryness at the roots is fatal to Camellias. H. B.

Begonia Paul Bruant.—As this gets more distributed it will doubtless be largely grown for the purpose of winter blooming. It needs the temperature of an intermediate-house or cool end of the stove. B. Paul Bruant is presumably of hybrid origin, but some twenty years ago or so there was a Begonia occasionally to be met with in the London nurseries under the name of B. valida, which, I believe, bore a general resemblance to this newer form.—H.

THE ROCKFOILS (SAXIFRAGA).

This is a family of beautiful garden plants, true alpines for the most part, and differing widely in character from each other. Fortunately, in spite of their alpine habitats, they are not at all difficult to grow, and are therefore familiar plants in all good gardens. We have roughly divided the family into four great sections:—

The Mossy or Hypnoides section is the best known and easily recognised by their moss-like foliage, so freshly green, especially in autumn and winter, when most plants show decay, and their countless white flowers springing from this carpet in spring make them very precious in gardens. These mossy kinds are especially suited for the tasteful practice of carpeting the bare ground beneath taller plants. They are admirable for their fresh green hue, with which they clothe rocks and banks in winter. Next to these we may place the big silvery group as represented by such kinds as S. Aizoon and the pyramidal-flowering S. Cotyledon of the Alps. Considering the freedom with which these grow in all cool climates, even on the level ground, and their beauty of flower and of foliage, they are perhaps the most precious group of alpine flowers we possess. Anybody with a cottage garden can grow them. The London Pride section is another of great beauty in its way. These thrive under ordinary circumstances in lowland gardens, etc., and soon naturalise themselves in lowland woods and copses. But the most brilliant Rockfoils, so far as flower is concerned, are the purple Rockfoil (S. oppositifolia) group and its near allies. Here we have tufts of splendid colour in spring with the same dwarfness and the most perfect hardiness. The large, leathery-leaved group of Rockfoils, of which the Siberian S. crassifolia is best known, is also of much importance; the constitution of its members is such that they thrive in ordinary soil and on the level ground; there are various other minor groups. Such of the smaller and rarer alpine species as require any particular attention should be planted in moist sandy loam mingled with grit and broken stone, and made very firm. Very dwarf and rather slow-growing kinds, like S. cæsia and S. aretoides, should be surrounded by half-buried pieces of stone, so as to prevent their being trampled on or overrun, and stone will also help to preserve the ground in a moist, healthy condition in the dry season, when they are most likely to suffer. Very dry winds in spring sometimes have a bad effect on Saxifrages when such precautions are not taken. When in established tufts they are apt to throw out stem roots into their own cushions, so to say—cushions frequently moist during the autumn and winter months. When the tufts are suddenly dried, the plants suffer if the ground roots be dried too. Want of space prevents more than an outline of the family being given, but we may point out the best kinds.

Silvery Rockfoils.

Yellow Mountain Rockfoil (S. Aizoides).—This is a native plant, and is well known in gardens. It has glistening green leaves dotted at the margin, and the flowers, produced in umbels, are of an orange-yellow colour, sometimes passing into a bright rich red hue. This species likes a cool, moist, sandy loam, and plenty of sunshine.

S. Aizoon.—This is a very pleasing rock-garden plant from the mountains of Europe, Western Asia, and the northern parts of North America. It is well known, and forms characteristic rosettes of foliage, the leaves of which are of medium size, of a greyish-green colour, looking as if they were sprinkled with powdered chalk, and have edges margined with white dots. The flowers are of medium size, white, dotted with purple, and borne in erect panicles. This plant is very easy to grow, if planted in a light, calcareous soil and fully exposed to the sun. It is multiplied by sowing the seed and division of the tufts. Of this species quite a collection of varieties and hybrids exists, and are to be met with in cultivation. It is seldom however, that one finds them correctly labelled in gardens.

S. aretioides.—A pretty species from the Pyrenees and Southern Alps. It is small, and forms flat cushions of foliage consisting of numbers of little rosettes of short, thick, hard,

encrusted leaves. The flowers are greenish-yellow, and borne in twos and threes on short flower-stalks.

Silver Moss (S. cæsia).—This comes from the mountains of Central and Southern Europe, where it forms neat little tufts. It bears white flowers on slender stems, and enjoys sandy soil, with water in summer. Increased by seeds or careful division. This is one of the most charming of the family.

Pyramidal Rockfoil (S. Cotyledon syn. S. pyramidalis).—This is one of the most handsome of the family, a native of the Alps, the Pyrenees, and the Arctic regions of Europe. It has been long introduced into gardens, and is known by its broad, thick, deep glossy green leaves, which form fine rosettes of foliage. These under cultivation sometimes attain large dimensions, whilst the flowers are pure white rarely dotted with pink. This species does not thrive in any compost or soil which contains too much lime. It likes a light, porous, and, if possible, pebbly or gravelly soil and plenty of sunshine. It is multiplied by division of the tufts and by sowing the seeds.

S. diapensioides.—This is a native of the Southern Alps, and forms dwarf, dense, globular tufts of silvery-grey-coloured foliage. The flowers are white, and borne in clusters of three to five on short, hairy, reddish-green flower-stalks. Peat, loam, and limestone are best, and it succeeds most satisfactorily when planted on the perpendicular face of a wall or rock.

S. Hosti.—This is a pretty species from the Alps and Pyrenees. It forms strong tufts of leaves, which form rosettes glaucous green in colour, encrusted with dots at the margin. The flowers are white and borne in corymbs.

Foxbrush Rockfoil (S. Lantoscana).—A beautiful species of the encrusted-leaved section and a native of Val Lantosque in the Maritime Alps. It reminds one of S. Cotyledon, but is smaller, the leaves narrower and more crowded in the rosette, and the flower-spike, which is not borne erect, but slightly drooping, is more densely furnished with white flowers. It should be grown in a well-exposed position, in a gritty soil well drained. It remains long in flower, and is one of the most satisfactory of rock garden plants.

S. longifolia.—This beautiful species has long been considered the queen of the silvery or crusted-leaved section, and when doing well and in robust health it is certainly a most valuable subject for the rock garden. The characteristic beauty of its huge rosettes of silver crusted foliage, its immense columns of innumerable pearly-white flowers, and above all the ease with which it may be grown, mark it at once as a most desirable subject for every rock garden. Even where the conditions cannot reasonably be considered as favourable as in its native habitat, it is not at all unusual to see the individual rosettes over a foot in diameter, many of the leaves being each close on 7 inches or 8 inches in length. Its headquarters are the Pyrenees, where it may be seen in quantity clothing effectively the surface of almost perpendicular rocks above the Val d'Arize, the Vallée d'Eslunbé, Houte du Morboré, in the Hautes Pyrenees, etc. This simple fact has given rise to many of the failures experienced by the traveller with a mild taste for rock gardening. The rosettes, where they can be safely gathered, are pulled roughly from the rocks and sent home with instructions to plant them in a brick wall, as being the nearest available position to their native rocks; they, of course, fail, both because the half of the roots have been destroyed, but chiefly because there is nothing in common between Nature's rockeries and a modern brick wall; indeed, it would be something akin to the miraculous if a single rosette was alive a month after. If the collector could have followed the roots of these Saxifrages he would have found them feet, perhaps yards, in the crevices of the rocks cool and moist, while the part on the surface is quite dry. These are just the conditions that suit S. longifolia, and this may be easily managed even on small rock gardens, with layers of stones, etc. It is always safest, however, to secure seed of these alpines. They can all be raised in a cold frame and soon make good-sized plants. They can either be kept in pans or boxes or planted out in suitable spots on the rock-garden; the more exposed the better they will thrive. When a rosette throws a flower-stem it dies off, as most of this section do; seeds, however, are usually ripened, by which the stock may be kept up. Its near allies, S. crustata, lingulata, etc., are all very handsome, and well worthy of a place even in select collections.

S. Media.—This is a small species, forming glaucous rosettes of foliage, and is a native of the Pyrenees. The leaves are glaucous or silvery-grey in colour, and the flowers purplish-rose, large, and borne on short, erect stalks. S. Media succeeds best in a calcareous compost formed of two-thirds peat-soil and one-third loam, with an admixture of limestone broken small. The plants are best in positions with an eastern or western aspect. It is multiplied by sowing the seed or by division of the tufts.

White Mountain Rockfoil (S. nivalis).—This species is welcome on account of its handsome foliage. It is a native of the northern and Arctic regions of Europe, Asia, and America. The leaves are of a fine glistening green on the upper side and brownish underneath, forming a large rosette which lies close to the surface of the ground, and from which arises a slender flower-stem, 4 inches to 6 inches high, and bearing a light cluster of white and not very conspicuous flowers. The plant likes a peaty soil and a half-sunny position, and is easily multiplied by sowing the seed.

S. Rocheliana.—A charming plant for the rock-garden. It is a native of the Eastern Alps, and forms broad, flat, dwarf cushions of closely-set rosettes of light greyish-green foliage. The flowers are pure white, borne in clusters of three to nine blooms on purplish-rose-coloured flower-

Early White-flowered Rockfoil (Saxifraga Burseriana). From a photograph sent by Mrs. Selfe Leonard, Guildford.

stems. A compost the same as that recommended for S. Media suits this kind.

Other forms of the Rockfoil.

Early Rockfoil (S. Burseriana).—This lovely early-flowering Rockfoil, of which an illustration is given, is a native of the snowy regions of Europe and of Central and Northern Asia. It is dwarf, and forms spreading tufts of glaucous or greyish-green foliage. The flowers are large, pure white, with yellow anthers, and borne singly or two together on a bright purplish-rose-coloured stem. The flowers appear in January and February. It soon forms good-sized tufts in the open border or on rockwork, preferring a dry, sunny situation and calcareous soil. There are two or three distinct forms of this species which differ chiefly in habit of growth, one being much more tufted than the others. Major has larger flowers than the type.

S. Camposi, or Wallacei, will be found most useful for corridors, window gardens, and beds, and as it soon makes a good tuft and is easily propagated from cuttings, there will be no difficulty in increasing it. If properly managed, S. Camposi will make a splendid subject for the late spring garden, flowering, as it does, so

profusely, and forming dense carpets of the most charming light green. The cuttings should be put in about the beginning of August—the open ground will do in a partially shady spot—and by November these will be ready to plant in their flowering quarters. Such a beautiful and easily-grown plant should be in every garden.

Stag's-horn Rockfoil (S. ceratophylla) is a strong-growing, dense, mossy plant, producing in great abundance loose panicles of large white flowers. It is very free and grows in almost any position.

Ivy-leaved Rockfoil (S. Cymbalaria).—This is a pretty little annual species, with small, bright golden-yellow flowers, borne on long, erect, branching stems. The leaves are small, roundish, and of a lively green colour. It is a native of the East, where it is met with in cool, moist spots between blocks or masses of rock.

Meadow Rockfoil (S. granulata).—A well-known Rockfoil, native of Britain, and also distributed throughout Europe and found in Algeria and the Western Himalayas. Its erect stems sometimes attain a height of 18 inches, each bearing a panicle of white flowers. It requires a light well-drained soil and a sunny, rather moist, position. The double variety is very pleasing. This Rockfoil is so named because it is commonly found in England in meadows and on banks.

Marsh Rockfoil (S. Hirculus).—A native of Britain and Central and Northern Europe and Asia. It is a fine species that deserves a place in all good rock gardens. The leaves are deep green in colour, and the flowers orange-yellow or bright brick-red, borne in clusters of two or three on erect leafy-stems. This species grows naturally in boggy places where the soil is peaty or sandy. It dislikes lime, which should be avoided when growing it, and does best in a compost of one-third loam, one-third turf, and one-third leaf-mould or fibrous peat. It delights in sunshine and moisture, and is multiplied by sowing the seed or dividing the tufts. S. H. grandiflora is a larger variety.

Mossy Rockfoil (S. hypnoides).—This is one of the most useful of the Rockfoils. It varies considerably, and several so-called species are very closely allied to it. The tufts of foliage are very deep green, and during the winter are pleasant to look at, as the plant will thrive in quite the wild garden, no matter whether exposed to the sun, though a little shade is appreciated. The wealth of white flowers is borne in early summer; but if no flowers were produced this mossy plant would be valuable for its dense growth and beautiful colour throughout the year. It is useful to form an edging of with early spring-flowering bulbs, Scillas, and so forth, planted amongst it.

S. juniperina.—This is a valuable species with yellow flowers, borne in a cluster of from three to five on a hairy stalk. It thrives in moist, sandy, firm soil, and is well worthy of a place in the rock garden. A native of the Caucasus.

S. luteo-viridis is the same as S. luteo-purpurea, and is an early-flowering Rockfoil of much beauty. It is dwarf, and forms charming rosettes of bluish silvery-grey foliage, the leaves being prettily-arranged in a spiral order in the rosettes. Flowers of a greenish-yellow colour, in small clusters of three to five blooms. Peat and loam, with limestone broken small in it, form a suitable soil.

S. muscoides.—A pretty little Rockfoil from the Alps and high mountains of Southern Europe, and will make a very charming green carpet. There are numerous varieties, but none so rich as atro-purpurea, in which the flowers are deep reddish-purple and borne above the mat of foliage.

Purple Rockfoil (S. oppositifolia).—This is one of the most charming of Rockfoils, and comes to us from the snowy regions of Europe, Central and Northern Asia, N. America, and the regions within the Arctic circle. It spreads on the ground, and sometimes forms very broad masses of foliage, studded in quite early spring bright purplish-rose flowers. This species should be grown in a compost of one-third peat, one-third loam, and one-third leaf-mould, with an admixture of sandstone broken in small pieces. It enjoys a cool and moist position, in which, however, it should not be exposed to the rays of the midday sun, and does equally well in either east or west aspects. There are varieties of it—major or grandiflora—having larger flowers than the type. S. pyrenaica and S. Rudolphiana are grown in the same way.

Swamp Rockfoil (S. pennsylvanica) is a well-known North American species with broad hairy leaves forming a rosette close to the ground, from which issues an erect single flower-stem, 12 inches to 20 inches high. This bears a spike of numerous small greenish flowers, with brick-red anthers. It should be grown in deep fibrous, loamy soil in the full sun, but kept moist at the roots. It is multiplied from seed and division of the tufts.

S. tenella.—A pretty little species, with narrow, greyish, green-coloured leaves, and encircling the slender, branching stems which carpet the ground. The slender flower-stems each bear two or three small white flowers. It likes a moist, cool spot.

London Pride (S. umbrosa).—Everyone who cares anything for the Rockfoils knows this plant. It is a native of Ireland, and frequently found on the mountains round Killarney. The plant forms broad tufts of dark green foliage, from which spring numerous slender panicles of small white flowers, the petals of which are dotted with pink. The leaves are arranged in broad rosettes, suggesting the idea of cups of verdure. This species grows well in light soils that are rich in humus or leaf-mould in a half-sunny position. It is easily multiplied by seed and division of the tufts.

S. rotundifolia.—This comes to us from the mountains of Central and Southern Europe, and also of Asia Minor. It is a well-known kind with white flowers, dotted with pink or purple, and borne in an erect cluster or panicle. The plant likes a cool, shady position, and soil that is rather rich in humus and loamy. It is multiplied by sowing the seed or dividing the tufts.

Mother of Thousands (S. sarmentosa).—This is a popular kind, very familiar under the English name given. It is scarcely necessary to describe it, being frequently seen in cottage windows. It is grown everywhere with the greatest ease, but will not stand cold climates. Where the climate is not against it plant it in light soil in a rather shady position. One variety, named tricolor, has leaves variegated with pink, grey, and white, but it is tender. A native of China and Japan, from whence also comes S. cuscutæformis, which is, however, very tender. S. Fortunei, also a Japanese species, is closely related to S. sarmentosa, and is tender. It has panicles of white flowers.

A distinct Rockfoil.

Great Californian Rockfoil (S. peltata).—This is a remarkably distinct species, found on the banks of streams in California. It is now well known, and is a Rockfoil of large size, the hairy flower-stems, which are of an almost purplish-red colour, sometimes attaining a height of more than 3 feet, and terminating in a large umbel of white flowers with bright rose-coloured anthers. The leaves resemble an inverted parasol in shape, and are large and dark green. They do not appear until after the plant comes into flower. This kind should be grown in a rich, deep, spongy soil, also in a half-shaded position, sheltered from cold, drying winds. It is multiplied by division of the rhizomes and also by seed.

Broad-leaved Rockfoils.

This section of a large and varied family is of great importance in the garden, as the various kinds are handsome the whole year round, but particularly so when in flower. They will grow in almost any soil or position, in sun or shade, and associate well with the nobler types of hardy herbaceous plants, or they may be arranged with admirable effect beneath thinly planted choice shrubs, or in broad masses in the foreground of shrubs, etc. Upon the rock garden they may be used with good effect, and nowhere can one better enjoy their distinct and rich green foliage. They are, however, so bold and magnificent when in flower that they ought to be well treated, or at least some of them, in order to induce them to flower freely and strongly. One of the best known species is S. crassifolia. It is now throwing up its flowers, which are borne in a branched or panicled cyme upon a stout footstalk. They are of a pretty rose colour and contrast well with the rich green leaves. There are several varieties of S. crassifolia, the best of which is one named orbicularis. It is a small-growing form, much less coarse than the type, and with broad leaves and freely branched spikes of light rose flowers which are borne well above the foliage. Another variety named rubra has flowers of a much deeper shade of rose.

S. cordifolia is a bold and handsome kind with great heart-shaped leaves borne on thick footstalks, and dense spikes of rosy flowers which open in March, and cluster, as if for protection from biting winds, beneath the ample leaves, but as warmth increases the footstalks lengthen, bearing the flowers in rich branched arching masses high above the leaves. A variety of it named purpurea is very handsome and valuable as a foliage plant even if it never flowered. Considerable progress has of late been made by intercrossing some of these best kinds, and the results are to be seen in seedlings that are vigorous and very variable, some kinds having flat leaves resting upon the ground, others with erect leaves, and a few having the foliage wavy, fringed, and deeply corrugated, the flowers clustering amongst, resting upon, or rising high above the foliage. In the kind named purpurascens the leaves are of a distinct liver-coloured hue, while others have bronze, or rose, or crimson-stained foliage; moreover, it is in winter and early spring, when the garden generally is dullest, that the Megasea leaves are brightest and most charming, as even some of the normally deep green-leaved kinds take on quite a brilliant crimson hue during the winter months.

Less useful than the above named kinds, because a little tender, is S. ligulata. It is, however, an extremely pretty kind with rosy-tinted white flowers. It grows and flowers so early in the spring that it rarely escapes injury from frosts, except in favoured spots or localities. It is worth, however, providing it with a sheltered, and even a partially shaded situation. As a pot plant it is extremely beautiful and may be had in flower without forcing very early in the year. In a cool-house it opens its delicate coloured flowers, and they last a long time when thus protected from biting winds and frost. It might also be mentioned that even the hardier kinds before enumerated make excellent plants for pots and tubs, and if planted where they can make a good growth and complete it early they may be lifted in October and potted, and will flower grandly from Christmas onward. Another beautiful kind, but which like S. ligulata needs a sheltered position, is S. Stracheyi. It has large leaves and branched cymes of pale pink flowers, which open in March and consequently are damaged by bleak winds—hence the need of a little shelter. As a class, however, these broad-leaved Saxifrages have a greater value and importance in the garden than many are aware of. They are extremely beautiful, variable, and long lasting, and both in large or small gardens they should be put to a variety of good uses.

Fuchsia Dominiana. — This Fuchsia, which was popular about thirty years ago, appears to be but little grown at the present time. It is, however, one of the prettiest winter and early spring blooming plants we have, and is quite distinct from other things commonly used for winter decoration. To obtain the best results it should be grown strongly so that by the autumn the flowering growths are several feet in length, of good substance, and well ripened. If cuttings are rooted in March, they may be grown along to fill 7-inch pots by the close of the growing season, and such plants will produce an abundance of bloom from November all through the winter, if accorded a temperature of from 50 degs. to 55 degs. The young plants should be stopped once or twice, but not later than the beginning of June, and the final repotting must be about the middle of that month. By the end of September the pots will be well filled with roots, and flower-buds will be forming. From the beginning of June up to the middle of September the plants may be grown in the open air, placing them where they get plenty of sun and air, and seeing that they do not want for moisture at the roots in hot weather. For the final repotting a rather rich compost should be used. Where there is convenience this Fuchsia may be planted out, training it up the rafters or supports of the house.—Byfleet.

Mother of Thousands (Saxifraga sarmentosa).

Ivy-leaved Rockfoil (S. Cymbalaria).

Great Californian Rockfoil (S. peltata).

Saxifraga Camposi.

Saxifraga juniperina.

Mossy Rockfoil (S. hypnoides).

Broad-leaved Rockfoil (Megasea cordifolia).

London Pride or Irish Rockfoil (S. umbrosa).

Meadow Rockfoil (S. granulata).

Great Alpine Rockfoil (S. pyramidalis).

SOME OF THE ROCKFOILS.

THE KITCHEN GARDEN.

NOTES ON ASPARAGUS.

Where home-grown crowns are used for forcing, provision must be made yearly for keeping up relays of plants to take the place of those lifted. The ground for new plantations should have been trenched and well manured in the autumn or early winter, but if this has not been done, there is still time to carry out the work, as the middle of April will be early enough for planting in any but the warmest gardens. Trenching for a plantation which may have to stand for many years should not be neglected, for it gives an opportunity of providing a rich root-run for plants which will afterwards have to depend entirely on surface manurings to assist growth, and it also does much towards providing the necessary free drainage. In preparing the ground, I prefer to have the upper layer of manure buried below the level at which the roots will be placed when planting, for direct contact with crude manure should be avoided. Should the natural soil be heavy, road grit or sand, freely added as the work proceeds, will do much to promote healthy growth, and those who can command a plentiful supply of sea-sand need wish for nothing better for the purpose. Of late years I have given up the practice of sowing seed direct on the permanent plots, as I find that there is a great difference in the character of the seedling plants; some will be robust and others quite the reverse; so when thinning seedlings raised on permanent beds, we have either to sacrifice many of the strongest and best plants or leave them at irregular distances from each other. I now provide a seed-bed near the main Asparagus plot and transplant the strongest seedlings to permanent quarters when they are twelve months old. Having the seed-bed near at hand makes it possible to carry out the work of planting without giving the plants time to suffer during transit. In planting on the bed system, I allow 2 feet between the rows and 18 inches from plant to plant in the row, the beds being 4 feet wide and the alleys 2 feet. On the flat I allow an additional foot between the rows, so the same number of plants is used on a given space under each system. The best time to plant is when the first shoots are from 6 inches to 12 inches high. Flat drills 3 inches deep and sufficiently broad to contain the roots when these are spread out horizontally and evenly all round the plant should be thrown out, transferring the young plants as quickly as may be to these, and re-covering the roots at once with the soil which was thrown out in forming the drills. In planting under the bed system drills are not necessary, but before placing the plants in position an inch or two of the surface soil may be raked on to the site of the alleys, and this, together with what will be thrown out afterwards in forming the alleys, will provide sufficient covering for the roots. In lifting the young plants, care must be taken not to break or damage either the roots or the top growth, and any that may be so damaged should be discarded. Plant if possible during calm and dull weather. Before the young growths get bushy enough to be much swayed by the wind, each plant should have a small stake and a loose tie to prevent wrenching at the collar. Seed-sowing, whether on permanent plots or in a seed-bed for transplanting, should not be delayed, as a long season of growth is essential to the production of strong plants. For the seed-bed, good soil and a warm position should be chosen.

R.

A Watercress-bed —This is so productive, takes up so little room, and is so easily managed that it is a pity it does not find a place in every garden. Added to which, we are quite sure that the source of our Watercress is above suspicion, and there is no danger of typhoid or other complaints which we sometimes hear attributed to the Cresses of commerce. The plan we have adopted with complete success is to get out a trench about a foot deep and put in the bottom a shallow wooden tray. The bottom of an Orange-box does very well. A little soil is puddled in this and the trench filled up nearly level with soil, well-rotted manure, and some charred refuse. The position may be any shady out-of-the-way corner where "nothing will grow." We then dibble pieces of Watercress all over the bed and give a thorough soaking with water, which is repeated twice a week. The shoots as they grow are pegged down and all flower-buds picked off. In a surprisingly short time we have a compact bed which can be cut over with the scissors and will continue to supply a good-sized family. A little nitrate of soda dissolved in the water occasionally will help the crop and improve the colour of the foliage. There are several varieties of Watercress, the principal of which are the small light green kind usually found in ditches, which is objectionable on account of its sending out so many aërial roots, and the colour is against it. The large summer kind does not stool out well, and in the garden has a great tendency to run to seed. The best for our purpose is the bronzed winter sort; this, if well grown, comes in the summer a lovely deep green, and is beautifully crisp and mild. The Watercress can be easily grown from seed, but, as it takes about twice as long to come into bearing this way, and you are uncertain what variety will come, cuttings are decidedly the best.—L. O. T.

LEEKS AND THEIR CULTURE.

This is a vegetable amateurs can grow as readily as gardeners—indeed, in the northern counties I have seen the finest Leeks grown by amateurs,

The Lyon Leek. From a photograph.

who were enthusiastic cultivators. The Leek is a splendid winter vegetable, and may be kept good till the end of April. There are more varieties of Leeks than formerly, and though I am aware more variety does not mean better quality, in all cases I do not hesitate to remark that we have got some splendid additions to the older forms, not only in size but quality also. The one illustrated, the Lyon Leek, is a specially good type of recent introduction, and noted for its mild flavour. It is an early or midseason variety, not so long as some, but what it lacks in length is made up in thickness, which is the edible portion. It is the best variety any amateur can grow for early dishes, for sowing in heat, or very early in the open ground.

To get good roots fit for exhibition the amateur would need to sow the seed earlier than these notes appear, so that I will only briefly touch upon this point. A few, however, may have their plants ready and may be glad of a little advice. On the other hand, there are a large number of cultivators who do not need exhibition roots, but who value good quality. They need a long supply and this I will advise more fully.

Take exhibition roots first. Many sow seed in heat in boxes as early as January, and when large enough prick off about 3 inches apart again into boxes, and finally plant out late in April or May, according to season or size of plants. I would advise a middle course—that is, to sow in less heat broadcast in a cold frame, keep close until the plants are well above the surface, and then give more air. Plant out when ready. Treated thus, the plants are more sturdy, the roots more numerous and less broken. There is but one transplanting, and being grown near the glass there is a stronger plant. Leeks do not like heat in a young state; they soon get drawn and weak. If sown thinly in a cold frame better quality is gained. I need scarcely add that early roots need every care in planting, also rich soil and ample moisture. It is well to prevent the plants dropping at the start. They do this if raised in heat, and that is why I prefer a cold frame. Trenches are best in light soil, and a good quantity of decayed manure under the roots is needed, moulding up by degrees as growth increases, or using paper bands to blanch the stems if needed for early supplies. As regards

Varieties for exhibition, the Lyon is excellent, also the Holborn Model, Dobbie's Champion, and Prizetaker. The last-mentioned is one of the largest Leeks grown, and for exhibition size is a cardinal point. Any of those named above may be relied upon. We now come to what may be termed mid-season and late supplies, when we need varieties from November to April, and for that purpose any of the kinds named above may be grown. For late supplies I prefer the Musselburgh. This is a long root, and its value is its late growth and being one of the last to run to seed. In the severe winter of 1895, when most green vegetables were destroyed, the Musselburgh Leek was uninjured; indeed, this is the hardiest Leek grown, and of excellent quality. There are two kinds of Musselburgh; the Improved has much to recommend it, being stouter than the old form. Those who value very large Leeks may with advantage grow the Ayton Castle Giant, which is excellent for main crop, and is larger even than the Lyon, but I am not in favour of mere size. Many years ago the London Broad Flag Leek was a great favourite, but it is now less grown. For sowing early in March in the open I do not advise a better Leek than the one illustrated, and it does well on most soils. A few words as to

Culture for open-air crops from the start will not be out of place. My practice is to sow two or three kinds, relying on Improved Musselburgh for latest supplies. Unlike many other green crops, only one sowing is made in the open in consequence of the Leek requiring a long season of growth. It is useless to sow thickly or in poor land, as the plants are gross feeders even in a young state, and soon collapse when crowded. Drought is fatal, and there must be no check in any way. In light soils, if the weather is mild, sowings may be made late in February or early in March. The seeds should be sown in land well manured, and on the flat, so that moisture is not wanting. I treat the land much the same as for Onions, making the surface firm to get sturdy growth. The plants require more time than others before they appear, and are perfectly hardy. Frost after sowing does not injure unless the seedlings are well through the soil. The growth may then brown the points, and a slight cover is then advisable. Plant out as soon as large enough, taking care to lift with roots intact, and plant quickly, well watering afterwards. During growth the cultivator who requires large roots should feed freely with liquid-manure or a fertiliser. Fish-manure is excellent. Plant in trenches made a spade wide and 6 inches deep. After manure is placed in position dig the latter into the trench previous to planting. Plant a single row and 1 foot apart, or closer for latest crops. The plants succeed well in drills drawn on land well manured, providing moisture is freely given in dry weather. For quantities the last named answers well, as it is an easy matter to mould up late in autumn, but do not mould too quickly until growth is well advanced, or it will be checked.

G. W.

Parsley.—A good sowing of Parsley should now be made, even if there is a prospect of the old plants lasting out well, as early sowing is to a certain extent a preventive of disease. I am not much troubled here with the disease which sometimes carries off the Parsley crop wholesale, but I have found that April or May sowings will sometimes succumb when June

happens to be a dry month, while March sowings grow well. I do not care for the extra Moss Curled varieties of Parsley, as they are rarely robust, and do not stand such frequent pickings as the common variety, a good selection of which is sure to be of good colour, and quite sufficiently curled. For present sowing a somewhat shady spot is best, and and the soil should have been deeply dug and well manured. Sow in shallow drills and give a heavy dusting of wood-ashes before covering in the seed.—G.

OUTDOOR PLANTS.

FLOWERS IN THE ROCK GARDEN.

The accompanying illustration shows a delightful feature in the rock garden, plants such as the White Rock Cress and the Rhododendron caucasicum flowering freely. In all large gardens a feature such as that represented should be provided as creating a distinct picture, in which one can use to advantage the spreading growth of plants, as the Arabis, that will overhang the ledges in a charming way. Over the stones leading into this cave the little Balearic Sandwort (Arenaria balearica) may be planted to form a mossy covering, or such things as the Primroses, with small-leaved Ivies to cover the stones at the side. In the illustration we see that flowers have not been sacrificed for the sake of stones, but every available and suitable position has been as far as possible covered with growth. Where there is moisture, such as in the little "dripping well" in the rock garden at Kew, more opportunity still is given for the culture of plants. Here plant the Bee Balm (Monardya didyma), always at home in a moist spot, and producing its crimson flowers over a long season, the Marsh Marigolds (Calthas), Primula rosea, the Great Californian Rockfoil (Saxifraga peltata), and many others.

White Rock Cress (Arabis albida) and Rhododendron caucasicum in a rock garden. From a photograph by Miss Willmott, Warley.

Primroses.—Some years ago two large packets of mixed strains were given to me by a friend. These I scattered on the sunny side of a shrubbery with a gentle slope. The weather about the spring-time was showery, and nearly every one of the hundred seeds germinated and grew vigorously. I was greatly surprised by the results. Some of the flower-stems were whorled, others more like a Polyanthus and also the type of our wild Primrose, large-flowered and variable in hue from white to golden-yellow. Many sported into rich colours, and every specimen was worth culture. I particularly recommend our lady horticulturists to take up this very interesting group of garden plants in the colder countries and Scotland, for the Primrose does not like much sun-heat. Even here half shade is beneficial in prolonging the beauty of the clumps. I cut off all the seed-vessels not wanted, and every third season make new plants from offsets, throwing away all the woody old roots. Soil, leaf-mould and some sand.—W. H. L., *Cumberland.*

195.—**Mossy lawn.**—Every season for ten years my lawn-tennis ground is bush-harrowed with heavy torn branches. Before a fall of snow the surface is dressed with soot, previously mixed with about one-fourth nitrate of soda. A thaw or fall of rain carries the mixture into the Grass-roots, when the roller (a heavy one) is applied once a week while the soil is soft. Already the treatment is telling in the very wet weather we recently experienced, the blades of Grass being dense and of a darker hue than a field in the vicinity. I am always asked by visitors how I manage to possess so good a piece of lawn.—W. H. L.

THE BEST TUFTED PANSIES.

Following the series of notes on these beautiful hardy flowers, it becomes necessary that a selection be given. If amateurs wish to succeed during the ensuing spring and summer, the plants should be planted without the least delay; in fact, it would have been better to have planted out the collection a fortnight since. Yet, with careful attention as regards watering, and shading with the aid of inverted pots, at least, during very bright days and until the plants get established, the lost time may thus easily be made up. The following selection has been made with the intention of including only those which are of a true, tufted habit, and not long and straggling, such as is characteristic of many of the exhibition sorts, and also particularly the character of the show and fancy types of the Pansy.

White.—Sylvia, creamy-white; Countess of Hopetoun, creamy-white; Ethel Hancock, purest white; and Christiana," creamy-white, with large orange eye.

Yellow.—"Ardwell" Gem, "bright" sulphur-yellow, very free and spreading in habit; Bullion, deep rich yellow, one of the earliest and also one of the latest to bloom; Princess Louise, a new variety of great promise, rich yellow, and rayless; and Lemon Queen, large light primrose.

Blue, lavender, and rose.—Blue Gown, blue, tinted mauve, very dwarf, compact and free; William Haig, rich indigo, this must be included, although its habit is not so tufted as one would wish; Rosea Pallida, very light rosy-lilac, very compact and free; Florizel, lovely bluish-lilac, good habit; Sweet Lavender, soft lilac, compact and free; William Niel, pale rose, very free and vigorous-growing sort.

Purple-crimson.—Acme, rich, purple-crimson, the brightest flower of this colour; Crimson King, another rich purple-crimson.

Edged varieties.—White Duchess, white, distinctly edged with blue; Goldfinch, pale dull gold, irregularly edged pale purple; and Duchess of Fife, light primrose, distinctly edged blue. These three varieties belong to what are known as the "Duchess" type, all springing from one parent, and they are without doubt the best. Blue Cloud, white, heavily margined deep blue, early.

Fancy or shaded varieties.—There are a fine lot of this type of flower, but, unfortunately, the habit of many of them is not good. Cottage Maid, shaded alternately deep purple and lavender, and light lavender; Mrs. C. F. Gordon, shaded purple-violet and pale lavender, a perfect flower; Border Witch, white ground, shaded and edged pale blue; Mrs. A. M. Young, a very dark flower, top petals bluish-magenta, lower one deep purple, with light blotch on each petal.

D. B. Crane.

Night-scented flowers.—A correspondent writes about these in Gardening, March 27, page 26. Your correspondent does not, however, include the Sweet-scented Tobacco (Nicotiana affinis), which has white flowers, very fragrant in the evening. Last summer my garden was full of them. During a previous summer a few plants had been allowed to seed, and, owing to the mild winter, not only had each seed germinated, but the old plants had survived. Returning from work late at night, the fragrance was delicious, but during the day the closed flowers looked somewhat poor.—R.

Daffodils are beginning to make a brave show, beds of Tenby being (March 7) quite at their best. I am pleased to say that my little colony of Cyclamineus (twelve plants) is doing remarkably well this year, and that, too, on a dry spot—by no means an ideal site, one would think, from the description given of its native habitat. The question of the naturalisation of the Daffodil in flower garden and pleasure-ground, although taken up with enthusiasm and largely carried out, was sometimes undertaken with more zeal than discretion, and the result has not been altogether satisfactory. An accurate examination of soil and subsoil should precede any attempt at naturalisation. In the pleasure-grounds here, where they were planted largely a few years ago, two sites were available on low-lying ground in the neighbourhood of a lake and on rising ground where the soil was light, changing to sand about 4 inches below the surface. I was doubtful about the latter, and only planted on the recommendation that if the bulbs rested on the damp sand they would doubtless do fairly well. Fairly well describes their present appearance; they exist and flower annually, but there is no healthy vigour and the growth is little better than it was the first season after planting. The low-lying clumps with better soil and a fairly good subsoil have done well and give a grand display. I do not wish to imply by this, however, that a low-lying, damp situation is essential; on the contrary, my best flowers of such varieties as princeps, Barri conspicuus, and the Gardenia-flowered poeticus are obtained from the front of a Vine border with a sharp slope to south-east. The border is, however, naturally good, and the bulbs are undisturbed—two essential points in securing an annual display with a minimum of labour. I was looking to day at a big batch of Cynosure planted three years ago on a border mainly devoted to bush Apples, on every available space that is outside the radius of the branches. They are coming up wonderfully strong this season, and if all is well will furnish a fine lot of bloom.—E.

Christmas Rose (*Christmas Rose*).—The flowers sent show that the plant is not the Christmas Rose. It is Helleborus fœtidus, one of the same family; but, of course, those of Helleborus niger (the true Christmas Rose) are white. You have the wrong plant.

HERBACEOUS PLANTS IN BOLD BEDS.

The Helianthus and Harpaliums (Perennial Sunflowers) are some of them very beautiful and effective in the autumn, and if kinds are chosen which have roots which do not spread rapidly and stems not more than 5 feet high, they are very suitable for autumnal effect in a bed or border. Planted in a collection in a bed at a distance of a yard and a quarter apart, they will make a mass of bloom in September, and if between every two plants of them Perennial Lupins were planted (blue and white alternately), the bed would be very bright in June. This bed could be underplanted with Stella Narcissus. It is one of the varieties of incomparabilis albus, and has star-shaped, creamy-white flowers with a yellow cup. Stella has the advantage of being very free flowering and very cheap, and, planted 2 inches deep and 3 inches apart all over the bed, they will make it very beautiful in April.

A bed of Flag Irises must certainly not be forgotten. There is no flower more lovely in early summer than these, and their grey-green leaves are pretty all the year round. They increase quickly, and soon form good clumps, which will throw up a mass of bloom. My experience has been that any soil suits them, and almost any position, but that they like an open position and a moderately light soil. The best are aphylla Bridesmaid, a lovely pale heliotrope on a tall stem, and so is Pallida dalmatica, and Queen of May is one of the prettiest of all. Albicans Princess of Wales is a lovely pure white, and flavescens is a very free-flowering primrose-yellow. Amœna Mrs. H. Darwin is another white, and a very good one (it is slightly reticulated with violet at the base, and flowers freely), and amœna Victorine, neglecta Cordelia, neglecta Harlequin, Milanais, pallida Astarte, pallida Celeste, pallida Khedive, squalens magnifica, squalens Murat, variegata aurea, variegata Gracchus, variegata Mrs. A. F. Barron are all lovely, flower freely, and have proved satisfactory in every respect with me. In my opinion these look best planted in a long border down a walk, in a single row, at a distance of about ¾ yard between each clump, and if in the space left a plant of Chrysanthemum maximum (atratum) is planted, there will be a row of white flowers in July and August. This plant grows about 1½ feet to 2 feet high, and flowers very freely on stiff stems. If the bed in which these are planted was made 4 feet wide, and these were used as a front row, the back row (behind the Chrysanthemums) is very effective if planted with clumps of German Flag Irises (the type) and Iris florentina alternately; these flower in May, when the other Iris in the front row will only be in bud, and Iris germanica is violet-blue, Iris florentina white. They both flower very freely, and have grey-green leaves, like the others I have named. Between these, and behind the front row of June-flowering Iris, it is a good plan to plant a row of autumn-flowering Phloxes, unless you already have a bed of them and as many as you care to have, in which case a row of Aster Amellus bessarabicus and Rudbeckia speciosa (Newmani) alternately, would be very suitable and bright. This bed could be planted with a carpet of violet Crocuses, and would then be gay in March. Violet Crocuses look well against the grey leaves of the Irises.

There are now dozens of lovely Starworts or Michaelmas Daisies (Perennial Asters) to be had in shades of deep violet, pale heliotrope, plum-colour, red, mauve, white, and pinky-red. They are of various heights, from 1 foot to 6 feet or 7 feet, and in my opinion are never so suitably placed as in a large bed by themselves. It can be so arranged as to form a bank by putting the higher ones behind, and this plan shows off the flowers admirably. There are several reasons why they do best in a bed by themselves, and one very important reason is that many of them have roots which quickly spread themselves over a large space of ground. This fact makes them give much trouble in a bed where there are other plants (whereas in a bed of their own all they have to do is to fill it), then, being so large, as some of the taller kinds are, they are apt to swamp other plants. Besides this, for my way of gardening (underplanting with bulbs), they are so thick and heavy in the autumn that they shut off all sun from the ground beneath them for a long period, and this does not suit many of the bulbs I otherwise advise. The roots, too, so soon form a thick carpet of their own that very few bulbs would force their way up through them, even if they survived the prolonged lack of light and sunshine. Crocuses will force their way up through the Aster roots, as I have proved, so the Aster bed can be made gay in the spring with Crocuses, and that is all the underplanting I advise. On the other hand, I do advise every gardener to have an Aster bed. Many of the feathery kinds are lovely, and dozens of them are well worth growing. Given a fine autumn, a large bed of Asters is a glorious sight.

I am not an admirer of Roses on standards as a rule, but there are exceptions to most rules, and beyond any doubt Roses on standards are useful when it is wished to grow other plants beneath them. A good-sized round bed of the Hybrid Tea Grace Darling (a free-flowering, strong-growing Rose, which bears its pink blossoms, with an orange tinge at their base, until late into the autumn) would be satisfactory all the summer and autumn on its own account, and would be beautiful in late spring if clumps of violet-flowering Siberian Iris and Doronicum Clusi were planted alternately all over it under the Roses, at a distance of about 2 feet apart. They flower at the same time, and the effect of orange and violet is very pleasing. They both bear flowers on stiff stems about 2 feet high. If this bed belonged to me I should put scarlet Van Thol Tulips everywhere that any space was left, or Poeticus ornatus Narcissus. Either would be charming earlier in the spring, but the Tulips would take less out of the soil than the Daffodils, so I give them the first place. The bed would need a really good mulching every autumn.

Another way of underplanting this bed would be to put good-sized seedlings of Nicotiana affinis, at a foot apart, into it in early June under the Roses. This would make the bed lovely all the summer and autumn, with white beneath and pink overhead, and the shade of the Roses would suit the Nicotianas well. But this plan would yield no spring effect, and though pricking in a few small seedlings would not injure the roots of the Roses, I should not advise any spring flowering plants which would root deeply to be put into it. The Nicotianas can be pulled up on a dry day in autumn, so as to disturb the earth they grew in as little as possible; but such things as Polyanthuses, Auriculas, Double Daisies, and Primroses root much too deeply for the good of the bed. Forget-me-nots or Arabis might be used, pricked in when young in the autumn, and, like the Nicotianas, pulled up when the soil is in a dry state in spring. But this latter way of treating the bed is not permanent, excepting so far as the Roses go, and so really it has no right to be put upon my list. Mrs. Robert Jocelyn.

Animals poisoned by Broom.—All parts of the Broom—root, stem, leaf, and flower—are more or less poisonous to animals, owing to their containing two alkaloids, scoperine and sparteine, the latter especially being dangerous. In any case the Broom is not only purgative, but is also very emetic in its effects. The horse and the ass detect more readily than the ruminant animal the sickly odour and the bitter taste of the plant, and are less likely to eat it But should a horse, ass, or mule have eaten Broom in any more or less considerable quantity, there should be no delay in administering the antidote, which is found in a large dose of coffee, seven or eight quarts or so, given warm and weak. The effect of this remedy is not always certain, and it is best to prevent the animals from browsing on Broom, whether it be Genista scoparia, G. juncea, G. tinctoria, or any other species.—*Revue Horticole.*

Destroying wireworms.—I advise any readers whose flowers suffer from this pest to try traps of sweet cake, Plum or plain, and I think the result will astonish them. Some time ago we cleared a piece of ground which had been a wilderness of Laurels and much rubbish, and made a pretty little formal garden, surrounded by a Yew-hedge, in which to grow some favourite flowers, especially Irises, Carnations, and hardy Primulas. We soon found we had enemies at work, and suspected wireworm. We tried traps with Potatoes and Carrot, and we caught them by twos and threes. We then tried sweet cake, and immediately caught them by hundreds. If you have traps, fill them with bits of cake and bury for four or five days, marking the spots; or bits of cake without the traps do almost as well. I am beginning to think the "Lily disease" we hear so much of is nothing more or less than wireworm.—Constant Reader.

CHRYSANTHEMUMS.

Treatment of rooted Chrysanthemums *(Novice).*—If your plants are well rooted round the outside of pots you had better pot them on singly into 3-inch size, as they may give you a little trouble if this attention be delayed; but if you are going to grow more than one in each pot finally you may put two rooted cuttings into a 3-inch pot now. You can grow Chrysanthemums well in tubs 15 inches in diameter, providing they are afforded plenty of drainage by the aid of a liberal quantity of crocks; but two plants in each tub will be quite sufficient. In the meantime, as the rooted cuttings receive their first shift, place them in a cold-frame and keep rather close for a day or two. Air may then be given gradually at first, increasing the quantity until the frame-light may be entirely removed. A soil suitable for this potting is loam two parts if not too heavy, rotten manure and leaf-mould half a part of each, and a liberal use of road-grit or coarse sand. This should be well mixed before use. After crocking the small pots cover the crocks with the rough parts of the soil or nice pieces of fibrous loam, and after a layer of the compost has been placed in this arrange the rooted cuttings in their respective positions, filling in carefully, and gently pressing the soil around the roots, at the same time finishing off with a sharp rap on the bench to settle the soil down properly. Label each plant as it is done, and place in the frame immediately after. No water should be given for a day or two unless the soil was very dry when potting. After the expiration of this time give a thorough soaking, and water afterwards as the soil becomes dry. Follow the instructions given in Gardening from time to time during each succeeding season, and then you cannot very well fail to achieve success. No manure-water will be needed by the plants until the buds have been retained or the tubs are full of roots. Of your selection the following are Japanese: Good Gracious, Eda Prass, Pelican, Edwin Molyneux, Val d'Andorre, Beauty of Exmouth, Lilian C. Bird, Mlle. M. A. de Galbert, La Triomphante, Gloire du Rocher, and Souvenir de Mlle. Menier. Mrs. Robinson King is an incurved, and Admiral Sir T. Symonds is a very large yellow single. We very much doubt whether you, as a novice, will succeed in growing the first four Japanese varieties satisfactorily. You should get a catalogue from one of the specialists advertising in this paper for particulars of colour and classification.

Pinching Chrysanthemums *(Bouquet).*—In most instances your plants should show second crown-buds during August, and these should then be retained. We think, however, that Chas. Davis and Viviand Morel will give a number of buds before it is time to retain the right one, and we can only recommend you to retain those buds which appear about the last week in August. Some of the varieties in your list would have given second crown-buds without being pinched as you describe.

Timing Chrysanthemums *(Caledonian).*—We would rather give you general lines to work upon, and you may then time your own plants. Those which are semi-early, such as Emily Silsbury, we should be disposed to stop about the third week in April and second crown-buds retained. Those like Lady Hanham, a sport from Viviand Morel, should come all right without any pinching, while sorts like Mr. A. G. Hubbuck, Challenge, and those which are inclined to be late are better stopped late in April, and first crown-buds retained.

Carpeting Rose-beds *(Ignoramus).*—The three subjects you mention (Forget-me-not, Mignonette, or Mimulus), are very suitable. So, too, are Phlox Drummondi, Carnations, Verbenas, and Pansies. You may also use the hardy Sedums, and neither will harm the Roses if you feed by judicious mulchings in autumn or spring.

THE AMATEUR'S GREENHOUSE.

Recently there have been several most interesting articles from owners of small greenhouses. I confess that some of these have been a great surprise to me. The number of subjects grown and the gratifying results obtained from so small a structure would put many a professional gardener to shame. In each of these cases it is very clear the lady has been a real lover of plants and flowers. From notes that have reached me during the past few weeks it is evident that these accounts have fired others with ambition to do the same or even better. Some wish to grow such subjects as Vines, Roses, Tomatoes, hard-wooded and soft-wooded greenhouse plants, and other very varied subjects all in a small house of 12 feet or so. Now, this is impossible. I am not aware of any greater or more common error with the average amateur than overcrowding and injudicious selection of subjects. To find a house such as I will attempt to describe, and which I actually saw last spring, is somewhat amusing to anyone with the least knowledge of flowers and their requirements. On the back wall were Abutilons (smothered in scale), Heliotropium, and an abortive attempt to grow that pretty creeper, Ficus repens. In the border was a Rose, and at the other end a Tacsonia Van Volxemi. The roof was practically covered with these two climbers, while an attempt was being made to grow Eucharis amazonica, Acacias, Genista fragrans, Heaths, Caladiums, and an Allamanda. These are only a few of the subjects, and yet how wide are their requirements!

In the first place, the roof was overcrowded, and so shaded the others that none of them had a chance to succeed. Then we can hardly expect such as the Eucharis and Allamanda, two Brazilian subjects, to thrive under the same conditions favourable to our more hardy Acacias and Heaths. Surely there are enough subjects of almost similar and needs that could be used to furnish a house of this description, and the more easily grown the better.

Overcrowding means bad plants, both in growth, form, and flower; it also means greater difficulty in keeping clear of insect foes. Nor can anyone well steer clear of or kill these when so many varied subjects are grown together, What is necessary to kill scale, and which a hard-wooded plant could resist, would be fatal to more than half of the subjects surrounding it. A less number of plants, and these selected with a little judgment, will please, and it is really astonishing what one will do with a small house where another utterly fails.

One of the great benefits of such a structure is its use in renovating, or, I may say, the resting, of our room and table plants. If our Editor chooses, I will endeavour to give a few selections of plants next week, each batch of which shall be suitable for small greenhouses of varying temperatures. I have seen so many failures for want of such that I feel they are sure to be welcome. P. U.

THE SNAKE'S-HEAD FRITILLARY.

A fair flower of the late spring is this native species, whose chequered or self white flowers are seen in handsome masses in some cottage gardens. But it is a plant worth a place in all good gardens, and is charming when a single bed on the Grass is filled with the graceful stems, bent almost with the quaintly-coloured flowers.

A vase of Snake's-head Fritillary. From a photograph by Miss Hutley, Derwards Hall, Bocking, Braintree.

We have received the following note from the sender of the photograph—

"The illustration shows F. Meleagris and its variety alba arranged in a specimen vase. These flowers are peculiarly dainty and spring-like, and, unlike their relatives the Crown Imperials, they have no unpleasant scent. They are quite hardy, but are not so often seen in gardens as they deserve to be, as where the system of freely digging the border prevails they get disturbed and do not thrive."

Triteleia uniflora.—The beginning of November last I planted a number of bulbs, amongst others being some Triteleia uniflora, and as these are the only ones that are not showing above ground I have endeavoured to find out from your paper and in other ways when they flower, but cannot learn anything at all of them. Would you please give me some information about them, such as time of flowering, description and colour of flower, also the natural order to which they belong, and what (if any) is the "vulgar" name?—Rustic.

*** This is called the Spring Star-flower, and is a very free-flowering bulb as a rule. You do not say when you planted them, but if the bulbs were good there is no apparent reason why they should not succeed. The Star-flower is not fastidious in any way. The delicate white flowers open in the sun, but close in dull weather. It flowers profusely in pots, and even when placed in clay in a most unfavourable position it will flower boldly. There are several forms which differ in the shade of their flowers. Associated with the best Scillas, Leucojum vernum, Iris reticulata, dwarf Daffodils, and the like, it forms a charming addition to the select spring garden, and is equally useful for rockwork, borders, or edgings.

ORCHIDS.

CULTIVATION OF ODONTOGLOSSUMS.

To be successful in the cultivation of Odontoglossums, it is of great importance that sufficient ventilators are at command for the admission of fresh air into the houses. From the fact that these plants naturally inhabit high mountainous regions it is obvious that they cannot thrive long without plenty of good ventilation. Without air the plants will certainly deteriorate even in the best of houses and under the best cultural skill. The principles on which proper ventilation depends are simple—viz., the air inside the house naturally becomes vitiated and ascends to the highest point in the roof, and there ventilators should be placed to allow it to escape; the cooler and heavier external air should be admitted through ventilators built in the brickwork of the house below the level of the hot-water pipes. It is advisable to have these bottom ventilators covered on the inside with coarse gauze or perforated zinc, which will check great volumes of cold air, and prevent the ingress of slugs, snails, and other troublesome pests. Air should always be given in a careful and systematic manner, and by carefully regulating both top and bottom ventilators a healthy atmosphere may be obtained without causing a draught. It is a mistake to open a few of the ventilators wide, leaving the others closed; it is a much better and safer practice that each ventilator be opened an inch or so, and be gradually increased as the inside temperature ascends. When the thermometer rises to about 60 degs., top ventilation should be employed and increased according to the state of the weather outside. When cold east or north-easterly winds prevail it is advisable to discontinue the use of the top ventilators, using the bottom ones only. The means which are advocated of giving side ventilation by swinging sashes on a level with the stages is an unsuitable one for the health of these Orchids, as too much cold air comes in directly on the plants, at the same time causing a draught, and the atmosphere to become arid. It is advisable now for those who cultivate Odontoglossums to have the blinds and shadings put in proper order so that they will be ready for use when required. Probably, after the long, dull winter we have lately experienced, we shall find the sun, when it does shine out, too powerful for these Orchids, as the concentration of its rays would soon cause great disfigurement to the foliage. No system of shading the cool Orchid-house, especially those having a north aspect, is so good as the open lattice wood blinds. These blinds, when drawn down, should be 5 inches or 6 inches above the glass. This is best done by having a slight wooden or iron framework fixed to the roof for the blinds to roll on. By this plan abundance of light and air passes up between the blinds and the glass, thus during the heat of summer keeping the temperature down inside, the benefit of which cannot be overestimated in preserving the health of these beautiful and popular plants. The Odontoglossum-house should be shaded on bright mornings immediately the sun has raised the temperature above 55 degs., and it should be kept down as long as the sun shines on the plants. W., *B.*

Repotting hard-wooded plants (*A Constant Reader*).—It would need a lengthy reply to give full instructions in the potting of hard-wooded greenhouse plants. They are so numerous and of such widely different requirements. Please look out for a short article upon this subject, which we expect to publish shortly. You have kept your Azaleas too wet or too dry, otherwise the buds and foliage would not drop. It is not necessary to repot every year.

FERNS.

ADIANTUM FARLEYENSE.

This lovely Fern is not so much grown as it deserves to be. It is queen of the Maiden-hairs. Many people seem to think it is very difficult to manage, but having been fortunate in producing many fine examples in pots, varying in size from 6 inches to 15 inches, I have not found it troublesome to succeed with. What it really does require is a little careful attention, owing to its delicate and sensitive nature. It will not flourish under merely ordinary treatment, such as that given to A. cuneatum, A. gracillimum, and others, but if the few following directions are carefully attended to, success will follow. It requires a warm and moist position in the stove, free from cold currents of air. A shelf or platform, covered with clean cinder-ashes, is excellent, but do not place the plants on the ashes, but in inverted flower-pots or ordinary draining pipes. A free circulation of air is thus afforded, and the full light reaches every part of the plants, which is so essential to success. Watering should be carefully done from the spout of the watering-pot, without the rose, so as not to wet the fronds. I have found this to be of much importance. The plants ought never to be syringed or wetted overhead in any way. When watered, let it be done thoroughly, so as to go through the ball. They should never be allowed to get dry for any length of time; if so, they are quickly injured, and lose their lower fronds. A good plan to know when water is required is to give the pot a sharp rap with the hand. If a bell-like sound is produced, the plant should be well watered at once, but should there be no sound of that kind it will not need it.

Shading is essential, but must not be carried to excess, for the rich colouring of the fronds greatly depends on the amount of light and sunshine to which they are exposed. The more sunshine they can receive without causing them to flag the more rich and pleasing will be the tints of colour. If overshaded they become of a dull, sombre green. Let some neat stakes be placed in the pots a few inches taller than the plants, and on these spread a newspaper. This should be done during sunny weather in the morning before they show the least appearance of drooping—say, about ten o'clock—and kept on, should the weather remain bright, until three or half-past in the afternoon, but keep the shade entirely off in dull weather.

The temperature may vary from 65 degs. to 85 degs., with plenty of moisture about the plants, which must be produced by sprinkling the ashes beneath and the walks of the house. Be careful when ventilating never to allow cold, cutting winds to touch them.

The compost I can with confidence recommend consists of equal parts of rich turfy loam, with a tendency to stiffness, good turfy peat, and well-decomposed Oak-leaf-mould, with a good sprinkling of wood charcoal, half-inch bones, and silver-sand, mixed well throughout the compost. Let the pots be well drained with good bold pieces of crock below, finishing off with smaller pieces and a small lump of charcoal. Pot moderately firm, and leave the pot free from soil to the depth of the rim. This will allow sufficient room for water to wet the soil through.

Propagation is done by dividing the crowns. It is best to choose young, vigorous plants for the purpose, washing away from their roots all the soil; then with a sharp knife carefully cut through the crown so as to secure a perfect single crown and a portion of roots to each piece. Pot singly into small pots and plunge in propagating-pit, where the temperature is from 75 degs. to 80 degs. Watch carefully for damp, giving a little chink of air should it appear.

If this simple method be carried out plants can be produced in a 12-inch pot, from 4 feet to 5½ feet through. Plants in 5-inch and 6-inch pots are splendid for table decoration.

H. Ellis.

Anemone fulgens flowers going green (*Egham*).—Too much manure in a fresh or new state is not suitable for Anemones. It is true they enjoy a rich soil, but this should be light and open, and the manure well decayed. A moist and partially shaded position is most suitable for A. fulgens. You may have got an inferior variety—indeed, we quite think this is the sole reason of your failure, seeing the same occurred last season. Please send us a few flowers in varying stages.

GARDEN PESTS.

THE ANTLER-MOTH (CHARÆAS GRAMINIS).

This is one of those insects which at times appear in great numbers and do an immense amount of mischief for one or, perhaps, two seasons, and then are hardly seen for several years. When they are abundant their numbers are almost incredible. Their caterpillars usually feed on the roots of Grass, but at times they attack Barley. This insect is by no means uncommon throughout the United Kingdom, but it is in our northern counties that they do the most mischief; there every now and then their numbers are quite overpowering. In 1881 the Grass in a large district in Clitheroe was quite ruined by these caterpillars. A local paper gave a sensational account of their misdoings. They were said to have travelled very fast and by thousands together; the road in one place was quite black with them. The appearance of such enormous swarms of caterpillars was considered very mysterious by the inhabitants, and seems to have caused no little excitement. Persons travelled some distance to see them, and they were exhibited in shops. On the Continent they are even more injurious than they are here. A correspondent to a German entomological periodical stated that in 1881 they were so abundant in Thuringia that as he walked over the infested ground they crackled under his feet. The worst attack he saw was in a clearing of a wood of about 90 acres in extent, in which all the pastures were withered up; and in one square foot he found twenty-five or thirty caterpillars and chrysalides, or an average of about a million and a-half per acre, if the entire 90 acres were infested to the same extent. When an insect appears, as this one does, in such extraordinary numbers, it is difficult to suggest any satisfactory method of dealing with it. A heavy dressing of lime has been recommended. It should be applied in the spring. Probably the use of a heavy roller would kill great numbers of them, and in years that they are scarce every moth, caterpillar, or chrysalis that can be found should be destroyed. Their natural enemies are numerous; many kinds of birds, particularly rooks and gulls, various ichneumon-flies. The moths do not make their appearance until August or September. They lay their eggs at the base of the stems or leaves of Grass. The caterpillars are hatched in the course of a fortnight or three weeks. They feed at night and hide themselves in the day-time. During the winter they lie dormant at the roots of the Grass, and in the spring revive and renew their work of destruction with increased vigour. They attain their full size by the end of May or June; they then bury themselves in the earth and become chrysalides, from which the moths emerge, as before stated, in August or September. The antler-moth belongs to the family Noctuidæ, several members of which have already been described in these papers. The moths measure from 1 inch to 1½ inches across the wings when opened widely. They are very variable in colour. The head, thorax, and body are usually of a reddish-brown colour, and the ground colour of the wings is the same, only rather lighter. Across the upper part of each wing is a whitish, longitudinal line, above which and near the middle of the wing are two whitish spots separated by, and having on either side, a dark brown patch. From the white line proceed several pale lines in a downward direction, between which, at their bases and at the edge of the wing, are dark spots. The under wings are brownish-grey, and are much paler towards their base. The full-grown caterpillars are 1½ inches in length; their joints are very well defined; they are of a greenish or pinkish-grey colour. Down the middle of the back is a pale band, bordered on either side by a dark brown line. Below this line on either side is a paler band, then a line of crescent-shaped markings, a pale line, and then a dark fine one. The head is brown and shining, with two dark marks down the face. The first, third, sixth, seventh, eighth, ninth, and the last joints of the body each bear a pair of legs. The chrysalis is of a reddish-brown colour. G. S. S.

The antler-moth and caterpillar.

Ivy stems diseased (*J. Humphreys*).—The stems of your Ivy I should say were undoubtedly gnawed by mice, though I must say I have never heard of their attacking Ivy before. Probably it was done by one of the field species when other food was scarce.—G. S. S.

Caterpillars (*Hamais*). — There are so many different kinds of green caterpillars and yellowish-brown hairy ones that it is impossible to say what they are without seeing them. As soon as you find any send some up, and I will tell you what they are, and how you can best destroy them. Unfortunately there is no simple cheap and effective remedy for caterpillars in general.—G. S. S.

Yellow Marguerites for sale (*J. Harries*).—To get Marguerites, obtain them from cuttings propagated in autumn for summer flowering, or early spring for autumn flowering. You will have to sow the seed at once if you require the plants to flower in the autumn; but they will not be as large and strong as if raised by cuttings. Sow seed in finely-sifted sandy loam and leaf-soil in equal proportions in shallow pans or pots, and stand in a slight heat until the seed has germinated. Afterwards place in a cool-frame. When the seedlings are large enough to handle prick off singly into small 60 pots in the same soil as before, and place back in the frames, keeping close for a few days to encourage the young seedlings to develop. When the plants are well rooted and making good growth, pot on into 5-inch pots in turfy loam, with the addition of a little leaf-soil and sharp sand, and replace back into the frame until the plants are showing flowers, when a greenhouse is suitable for them. The plants will not show flower till the beginning of September, as it is getting late now for sowing the seed. When they commence to flower a little stimulant should be afforded to encourage them a little. When finished flowering, prune back a little into shape, and keep cool till the spring, but protect from frosts. Afterwards place in a little heat to encourage new growth. Then shake them out and pot on into larger pots and grow on in a frame as previously. Cuttings should be taken before potting if the stock is required to be increased.

Ceanothus dentatus under glass.—This is so beautiful when in flower that a little protection is well repaid. It is very seldom seen used for flowering under glass during the early months of the year, though it is well suited for such treatment. Of course it cannot be forced into bloom as early in the year as some shrubs whose natural season of flowering is a couple of months or so before that of the Ceanothus; still this can be had in bloom by March, and being of a neat compact habit of growth and clothed with deep green foliage, it is, when thickly studded with little clusters of rich blue blossoms, a very beautiful object, and what is more, a very uncommon one. Beside the specific name of dentatus this is also known by that of Lobbianus. The different forms of Ceanothus are all very beautiful, but they are all more or less tender. One thing, however—if not killed outright they recover quickly as a rule from injury by frost. Some of the garden varieties of the azureus section will bloom throughout the greater part of the season, and continue till summer is well advanced.—T.

Edging to flower-bed (*D. C. B.*). — None better than the two you name, but you might add Arabis alpina, Mimulus, Tom Thumb Nasturtiums, Phlox Drummondi (pegging these down), and Virginian Stock. So much depends upon how high you wish the plants to grow. Golden Feather and Lobelia are much the best.

ROSES.

Pruning Roses.—I have the following Roses growing on the south-west and west walls of my cottage: Old and Red "Glory," Mme. Bérard, Bouquet d'Or, Rêve d'Or, Duchesse d'Auerstadt, and Mme. Chauvry. They are up to the eaves. As many shoots have been nailed to the wall as it can well hold. From these shoots a great many have grown straight out, averaging about 2 feet long each. How should these latter branches be pruned to induce bloom? The first three have bloomed fairly well; from the others I have had only two blooms.—A. R.

*** We would spur back the laterals if really healthy, cutting them back half way. The better plan in future will be to cut out a few of these older growths as soon as they have done flowering, and so make room for a little fresh wood each season. All of the varieties you name are extra strong growers, and invariably bloom best upon the ripened growths of the previous summer.

Rose-pruning.—I shall be much obliged if you can advise me as to the best way to prune the following Roses, planted in the autumn of 1894? In the spring of '95 I pruned most of them fairly hard, but in '96 I did not prune the stronger growing ones so hard, only shortening slightly the stronger growths, consequently these are now big trees, especially L'Idéal, Cloth of Gold, Bouquet d'Or, Mrs. J. Laing, Isaac Perrier, Camille Bernardin, Duke of Edinburgh, A. Colomb, C. Lamb, A. Carrière, A. K. Williams, M. Rady? Will you also tell me how much to cut off my Brier-stocks, and when to do it? They were budded last summer, and have branching heads about 18 inches from the stem, and the buds are mostly dormant.—E. B. A.

*** You have been pruning your plants on the correct lines. Simply shorten the long growths a little upon the climbers, and prune Charles Lamb, Marie Rady, Mrs. John Laing, Camille Bernardin, and Alfred Colomb upon the lines pointed out in our issue for March 20th, where you will find full instructions. Cut back the Brier-stocks to within 2 inches of the dormant bud. Do this without delay.

Rosa polyantha (*Campsea, Ashe*).—This can be grown from seed in a cold-frame, and will flower in ten weeks from sowing. I have got a beautiful plant of Rosa polyantha, which was raised in a cold-frame, and flowered in ten weeks' time. It is potted in a 5-inch pot, and is now 20 inches high and 1 foot through. It is bearing 107 buds, and yet there are more coming. The seed was sown in March, 1896.—Constant Reader.

Rose-buds (*Robinson*).—We cannot detect anything the matter with your Rose-buds. They are always green when so young as those sent. You might do well to afford a little more heat if possible, as the buds seem to be opening very steadily. Your Peach border should be an excellent position for a Maréchal Niel. Send us a few more buds, and give further particulars if they fail to expand in a satisfactory manner.

189—**Pink Currants.**—There is a variety of Currants that are the colour of champagne. I have heard them called Champagne Currants. They are generally seen in old-fashioned gardens.—Elem.

196—**Plants for narrow border.**—"H. M. I." would find the small Double Blue Periwinkle—flowers like a Neapolitan Violet, and most valuable for cutting—excellent for his narrow border facing east. It grows rapidly, is green all the year, and flowers abundantly in the spring.—Elem.

National Viola Society.—From the schedule of prizes, etc, of this society we learn that the exhibition is to be held in the Gardens of the Royal Botanic Society, Regent's Park, on Saturday, July 17th, 1897. Altogether there are twenty-eight classes provided for competition, sixteen of which are open, and the remaining classes confined to amateurs. The exhibition should be of more than ordinary interest this time, as there are several new features in the schedule. The principal class in the open division for Pansies is for forty-eight sprays distinct, nine blooms in each spray. This should insure a very fine display, as the smaller tradesmen can compete with their more fortunate rivals now that the class is limited to forty-eight sprays. Some of our southern growers should now be able to compete with a fair prospect of success. A class for three sprays of the "Duchess" type is provided in both divisions, and this should also make a welcome addition to the show. The decorative value of the Pansy has also been recognised, and in the open classes a table decoration as for twelve persons is invited, Pansies with their own foliage only to be used. This is sure to be well contested. Each type of the flower is provided for in the respective divisions, and as amateurs are very numerous in this society, it may be safely taken a fine show will be made by them. The president (Mr. W. Robinson) has offered prizes for six Tufted Pansies distinct, shown as the plants grow, to be grown in the open air, in pots, pans, vases, wicker or mossed-wire baskets, or any other simple receptacle. A list of varieties is given to make a selection from, and as this includes many of the best of the old as well as those of the new, a good competition should be the result. A second trial of Pansies will take place in the Gardens of the Society, Regent's Park, and the committee invite offers of new varieties only for the ensuing trial. A Pansy conference will be held later in the year in London. The floral committee meet on May 19th, June 16th, July 17th (show), and August 18th to adjudicate upon new varieties which may be sent to them. The subscription is 5s. per year, and all particulars can be obtained from the honorary secretary, Mr. A. J. Rowberry, The Crescent, South Woodford, Essex.

GARDEN WORK.*

Conservatory.

The Daffodils are over, and the bulbs planted out in the shrubbery and out in the wilderness wherever there is room. We find it better to plant now, then dry the plants off and plant later, as one remove does it and saves time. Deutzia gracilis in well-grown plants in a large group have a pretty effect when interspersed with delicate foliage. Young plants of Grevillea robusta mixed with Deutzias help to relieve the monotony, and the young growth of the Grevilleas have a bronzy tint at this season. A few good specimens of Erica Cavendishi will be useful now, and there is a pretty free-growing Heath in bloom now named perspicua erecta, which is charmingly graceful and light. We do not want all the flowering plants to have large, heavy flowers with no trace of green leaves among them. Irises are pretty in large pots or boxes now. They force easily to be in bloom by the middle of March, and are so nice for cutting, and the bulbs are very cheap. The Gladiolus The Bride will soon be in blossom. These may be grown in various-sized pots. Last year complaints were common of the bulbs rotting in the soil. I think this must have arisen from too much water being given before much growth had been made. They scarcely want any water till some growth has been made. As Acacias go out of bloom, prune the long, straggling shoots back—unless the plants are trained against a wall—and then some of the shoots may be trained in. Good bushy plants of the Bleeding Heart (Dielytra spectabilis) are effective now where only slightly forced. When Camellias have done blooming, if they are planted in the borders, what little pruning is required should be done. Tea and other Roses are charming now. But do endeavour to grow them without insects or mildew. Green-fly will have to be reckoned with, but the vaporiser makes short work of them, and there are improved washes now to deal with mildew, but the ventilation has a good deal to do with the appearance of mildew. A stuffy house or a draughty house is nearly sure to have mildew in it somewhere, probably on the Roses. See that the climbers are properly thinned and trained now.

Stove.

What an improvement has been effected in the Amaryllis family of late years. Many of the hybrids have magnificent flowers. I was looking through a collection a few days ago, and found many beautiful varieties in flower. They are getting cheaper and will soon be within the reach of the average amateur with a moderately heated stove. They are not difficult to manage. They want a long rest during the winter and some good loam moderately enriched to grow them in. They are not difficult to raise from seeds, and the time is coming when everybody must have them. They will do in a warm conservatory when flowering. The Clivias or Himantophyllums may be grown with them. Cuttings of Crotons and other foliage plants will soon strike now in heat, kept close. Shift on Gloxinias and Achimenes. These are useful for filling large baskets for the conservatory. They want a little more heat than in the conservatory to start them. The baskets may be filled and hung up in the vinery till they have made some progress. The shade of the Vines will be useful at first. When well established take them to the conservatory.

Ferns Under Glass.

Ferns are more beautiful when making their growth than later when their growth is completed. Many of the Adiantums and others come first with deep bronze tints on the new fronds. Among the Pterises (a most useful family), nobilis, Mayi, Wimsetti, are very distinct crested forms. Cretica major is a good hardy Fern for room decoration, easily grown and raised from spores—in fact, most of the Pterises are easily raised from spores. If good substantial loam can be obtained that may form half or more of the compost—indeed, some of the Maiden-hairs will do well altogether in loam, notably that beautiful hybrid A. Farleyense. Plants intended to produce fronds for cutting should be grown in a light position to harden them. Temperature now about 55 degs. to 60 degs. A few will do better in a little more heat, but the best decorative Ferns may be grown well in a temperature not exceeding 60 degs. at night.

Watering Early Vines.

Inside borders must have abundance of water. Make sure the drainage is all right, and as soon as the Grapes are thinned dress the borders with any suitable manures, and lay on the hose. Many large growers pass the water through heated tanks, and taking the chill off the water before using it is a great advantage. We know, of course, that it is well nigh impossible to confine the roots of Vines, Peaches, or Figs anywhere, but if they find food enough near where they are planted, there is not the same necessity for them to ramble where the chances are they will get into difficulty. I have found roots of Alicante Vines in a Cucumber-house, having traversed through an intervening piece of ground and under the wall into the Cucumber-bed. I thought they received water enough, but they had not, and had gone in search of a further supply, and had found it in the bed of warm manure under the Cucumbers.

Cold Frames.

Some of these will now be filled with Chrysanthemums. Do not permit any plants to be pinched up long in small pots. Bedding "Geraniums" will be safe in cold frames now, matted up at night.

Window Gardening.

Violas and Arabis albida are pretty in window-boxes. Forget-me-not and yellow Wallflowers make a desirable change, and will last till the tender things are ready. Indoors there is plenty of variety now. Spiræas, Pelargoniums, Lily of the Valley, Mignonette, Violets, Dielytra spectabilis, Azaleas, etc., will last a long time now, especially if taken to a cool room when the gas is lighted.

Outdoor Garden.

Clumps of Lavender, Rosemary, Double-blossomed Gorse, St. John's Wort (Hypericum calycinum is the most useful variety), Berberis Aquifolium, B. stenophylla, and several other things are very effective when rightly placed. Lavender and Rosemary do best in a sunny position, but the St. John's Wort and Berberis will do in the shade. I have often used the dwarf evergreen Barberry as a groundwork for a specimen or a group of trees on the lawn or near its margin, and a very dressy appearance it has. Evergreens may still be planted, but mulch and water must be given when necessary, and if it sets in dry and hot the hose should be used over the foliage till the roots get into active work. Very few evergreens ought to die if proper care is taken after planting. Hardy edging plants should be replanted now, as well as hardy carpeting subjects. Sow hardy annuals thinly in good sized patches if the best effect is sought. Hardy perennials may be sown now. Sow also such hardy summer creepers as Convolvulus major, and the various forms of Tropæolums, including the Canary Creeper. These will transplant safely when large enough. Plant Gladioli in beds or a group in the borders; also sow seeds to raise new stock. Divide and transplant border Chrysanthemums. Sow seeds of Auriculas, Polyanthuses, and choice hardy Primulas. Plant Hollyhocks, Carnations, and Pinks Pentstemons struck in cold frames may be planted now.

Fruit Garden.

Disbudding Peach and Nectarine-trees may begin in sheltered gardens as soon as the young shoots are grown an inch to 1½ inches long. It is best to spread the work over several weeks; it gives less check to the trees, and does not let in the cold wind to the same extent as where the work is done all at once. Have the Tobacco-powder handy if any flies are seen. This is a sure remedy if used promptly against either green or black-fly. Fruit-trees look very promising, and Strawberries also will have plenty of bloom on them by-and-bye, judging from the appearance of the crowns. If not mulched stir the surface and top-dress with good manure at once. The moment a standard fruit-tree is planted it ought to be staked to prevent wind-waving. The necessity for this is well known, but it is rare to see it done promptly enough. There will be a good deal of work under glass now. The roots of Vines, Peaches, Figs, etc., must be kept healthily moist if the trees are to thrive. It will be an advantage in the case of houses which are being forced early if the chill can be taken off the water. Continue the weekly routine work of stopping and tying down young wood, if Grapes, but if Peaches it should not be stopped, or at least not yet anyway. Early Grapes will be thinned by this time, or nearly so.

Vegetable Garden.

Make Mushroom beds outside now in a shady spot. The larger they are the better. Little bits of beds soon lose their heat, and then the spawn becomes sluggish and fails. Coverings suitable for keeping off heavy rains must be used. Plant out Cauliflowers raised in heat, or which have been kept through the winter in pots. Shelter is important. Trenches are often used for early Cauliflowers. Make them wide enough for two rows of plants. Small, close, white heads are more valuable than large, coarse open ones. Sow the maincrop of Winter Greens, such as Broccoli, Savoys, Brussels Sprouts, etc. If birds are likely to be troublesome either the seed-beds should be netted or the seeds dressed with red lead before sowing. Mustard has been more than once recommended as a cure for wireworms. It is a simple thing, and if effective will be valuable. The way to use it is to dust the common Mustard along the rows of Peas, etc., along the drills before the seeds are covered. Prick off Celery and sow a few seeds outside to come on for standing the winter. Asparagus beds should be raked down to prepare the surface for the grass coming through. The beds of Asparagus may be planted. Propagate Herbs. Keep up a succession of Seakale and Rhubarb.

H. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from April 3rd to April 10th.

Sowed Walker's Perpetual and Duke of Albany Peas Planted Broad Windsor Beans. We always grow the green seeded variety. It is not quite so large, but better in

flavour and colour. Made a new plantation of Globe Artichokes. Sowed Winter Greens in variety. Planted out more Cauliflowers, including a lot of Autumn Giant, which in a dry season is always satisfactory. The same cannot be said of any other kind on our hot soil. Looked over Peach-trees on walls, and dusted a little Tobacco-powder among the foliage as a precautionary measure. Looked over early grafted fruit-trees to see if there were any cracks in the clay—if the air gets in the grafts may die, and it is not much trouble to look round—and if a crack is visible anywhere to put a little clay into it. Stirred the soil among the Tulips, Hyacinths and other spring flowers. Looked round newly planted trees and shrubs. In some instances the late gales of wind had disturbed them a little, and the soil round these have been made firm. We usually stake all tall things as soon as planted, but these heavy gales disturb the low bushes, which under ordinary circumstances are not staked. We are still propagating and potting off bedding plants of various kinds. A good deal is done with sub-tropicals, such as Ricinus Gibsoni, Ferdinanda eminens, Cannas, especially the new dwarf varieties. These have been divided to increase stock. A couple of large beds in sheltered situations have been prepared for them, making the soil rich and fairly light. They will not be planted before the first week in June, and will be strong plants in 6-inch and 7-inch pots by that time. It is of no use planting little bits out of small pots as the season will be over before they do anything. We have for several years been working up stocks of selected plants in distinct colours for bedding. Seedlings will flower freely enough, but when planted in mixture they have a bad effect from the irregularity of growth, no matter how carefully they are planted. Some of the Fibrous Begonias make pretty beds, and I think more might be done with them; and it does not take so long to work up stock as with the tuberous-rooted section. We are turning our attention to these, and shall have something to say about them later. Sowed a lot of fine Grass-seed and White Clover over a thin part of the tennis lawn, where the Grass has been worn by the treading of many feet. A little bone-meal and wood-ashes has been scattered over the lawn, and the whole well rolled. Looked over early Grapes to take out a berry or two where pinched for room, but I do not believe in over-thinning in the early house. Routine work takes up a good deal of time now, especially under glass.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

256—**Crocuses and sparrows.**—Your great kindness in entering into the details of every amateur's gardening interests, however small their scale, encourages me to consult you again (with thanks for your latest help). I have just been told that sparrows will not eat Crocuses unless they are in the sunshine when first opening. Is this the case? I planted most of mine last autumn on the north side of a 3 foot wall, and was sorry afterwards when I found that for the first week or two of their blossoming the sun never reached them. It seemed such a pity to miss the rich golden glow in the early spring mornings. But they are illuminated now for some hours a day, and my neighbours have asked me how it is that my Crocuses have escaped the sparrows which devour theirs. If it is really the result of their partly-shaded position, the secret is worth knowing. But it seems strange, and I should much value your opinion as to the soundness of this theory. I may say that I took no other precaution against the sparrows, and have scarcely lost a single flower.—C. E. S.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

257—**Painting Vines** (*J. J. Green*).—A little clay to make the Gishurst thick may be rubbed into the Gishurst to make it adhere. As to quantities these depend upon the strength required. See directions on box.

258—**Lemon-tree** (*Cherry Pie*).—Your Lemon-tree needs more heat in winter, and should be brought under cover before the autumn nights get cold. Turn it out of the tub, drain afresh, and then repot in a compost of turfy loam (not broken up too fine), a little leaf-soil, and sand. Pot firmly, and keep it well syringed overhead. When the tub is full of roots once more give weak liquid-manure while in full growth.

259—**Keeping quantities of seeds** (*Constant Reader*).—Most kinds of vegetable and flower seeds remain good for more than a year if kept in a proper temperature and a dry store. Space does not allow of naming the many things which may be kept.

260—**Seaweed for Asparagus** (*Co. Dublin*)—Yes, your gardener is quite correct in dressing with seaweed; but, of course, there has not been a heavy dressing this spring, if only planted this season. Asparagus plants move best when on the point of new growth.

261—**Seedling Potato** (*W. Hunt*).—We fear you are too late to send to the Royal Horticultural Society. They would give your Potato a trial. Twenty tubers are required. Write at once to Superintendent, Royal Horticultural Society's Gardens, Chiswick, London.

262—**Planting Montbretias** (*D. C. B.*).—Throughout May, June, and July. July is rather late if you want a show of flower outside from potted bulbs. But you can turn them out after blooming, and as they are perfectly hardy, you will get good blossom outside next year.

263—**Vine-buds damaged** (*Youth*).—Mice have eaten your Vine-buds. You would do well to poison them at once. The insect enclosed is harmless to the Vines, and does no injury unless present in great numbers. We are sorry your Vines are so much injured. Doubtless if you keep your house moister than usual after starting back buds will break.

264—**Camellia buds falling** (*Sidney Gold*).—Your Camellias have been allowed to become dry at the roots. This has caused the buds to drop. The plants were allowed to get dry just before the buds were bursting into flower, judging by the buds sent. Camellias should not be allowed to become dry at the roots any time, as it affects the flower-buds very quickly.

265—**Unsatisfactory lawn** (*Chiswick*).—It would have been better had you mowed the weeds off earlier than late in the autumn. Constant mowing and rolling improve the Grass and check weeds. We would sow a little more Grass and Clover seed at once. You must dig out the Plantains and Daisies. See a short note upon renovating lawns that is about to appear.

266—**Size of tennis-court** (*W. H. P.*)—The court should be 78 feet long by 27 feet wide. Fix the net in the centre, and 21 feet from this work the service line. Lengthwise through the centre of the court another line should be marked out. This is the size of a lawn-tennis-court, but the size of your lawn depends entirely upon how many sets or courts you wish to provide for.

267—**Is a creosoted fence injurious?** (*J. Francis*).—After your fence has been exposed to the atmosphere for a time it will have little effect upon vegetation. The chief harm will be from the posts in the soil, if these are creosoted as well. This kills the roots near it, and we have often thought many failures in Hop sets might be traced to the freer use than usual of poles whose points were saturated with creosote and tar.

268—**Growing Tomatoes in lard tubs** (*J. A. Woodhead*).—One plant in a 12-inch tub would be best if well-grown. You may prefer two, but in that case, you see, you only give two plants 6 inches, and you fear 8½ inches is insufficient for one. The pots 8½ inches will grow good plants, but need more attention in the way of moisture and feeding as well. Being full of roots they soon dry. It is well to plunge the pots if small or size named, but not the tubs.

269—**Pereskia-stock** (*Willie*).—The Pereskia-stock is one of the Barbadoes Gooseberries. P. aculeata is generally used but P. Bleo is a taller and stronger grower. They are of very little value, except as stocks for the showy Epiphyllums and other Cacti. The species of Cacti vary very much, and several of them it would be impossible to graft. All that can be grafted would doubtless thrive upon the Pereskia, but it is generally used for the Epiphyllums only.

270—**Campanula flagging** (*Novice*).—Repot your plant carefully, removing as much as possible of the old soil without sacrificing too many roots. Use a compost of leaf-soil, loam, and a little well decayed dung. Around the crown of your plant place a light sandy compost, when several of the young growths will root and be fit to take off in a few weeks. Young plants obtained thus flower very freely the same autumn. We think you are keeping it too wet.

271—**Tennis lawn infested with worms** (*Oxonian*).—Kainit will not injure your Grass if used in proper proportions. It is beneficial for all kinds of crops and it will check worms. It should be used in the autumn. Spread it over the Grass at the rate of 5 cwt. per acre. or 1½ oz to the square yard. It is unnecessary to apply it in a solution, but use in a dry state. We advise you to roll the lawn occasionally—once a week, at the least. This will help to destroy the worms.

272—**Lilium auratum failing** (*C. H.*).—We cannot say what is the cause of your Liliums going rotten in the way of the sample sent. There is no insect enemy, and we do not know of any disease affecting them in this way. If you have fumigated a little too strongly, and so checked the point of young growth, it might account for it. Have they all gone so, or only a few? If the latter it may be from drip falling direct into the crown. We would like to see another specimen or two.

273—**Azalea and Camellia soil sticky** (*W. L.*).—If the soil is in the condition you describe shake it from the roots entirely, and wash the latter in clear water before repotting. When you have potted the plants stand them in a shaded position, and keep well syringed two and three times a day, but give very little water at the roots for a time, so as not to allow them to become waterlogged again. It is not injurious to Camellias or Azaleas to treat them as advised, especially if in the state yours are.

274—**Treatment of Eucharis** (*F. G. W.*).—When all of the leaves are matured give less water and a lower temperature for about six weeks, afterwards bringing them into a moist heat of 75 degs. to 80 degs., rising to 85 degs. with sun. The temperature you are affording is not quite high enough to do them well. Directly the flower scapes appear water freely with weak liquid-manure. When the scapes are opening their first flower you can remove to an intermediate temperature, and so secure their beauty over a longer period. Well grown and not over-potted bulbs will bloom twice and sometimes thrice during the twelve months.

275—**Climber for tree** (*Perplexed*).—The Musk or Ayrshire Roses will be very suitable for you to train to the tree, as also will Clematis Jackmani. Hardy Ferns will do well under the shelter of a tree. Of Rock plants that will succeed choose the Mossy Rockfoil (Saxifraga hypnoides), London Pride, Sedums, Primroses, Auriculas, and Creeping Jenny. Ivy will be a suitable climber for the fence. We advise you to allow a liberal supply of water during the summer months, as the Elder draws the moisture from the other plants.

276—**Use of blood as manure** (*Meno*).—Blood is good applied at any time if mixed with soil some time previous and used as a surface dressing or addition to the borders. It certainly is not good used in a crude state at any time. The best results are obtained by surface dressings in spring, just after setting of the fruit at that season, as the Vines are in better condition to assimilate food given. You may give a dressing three times during growth in summer. Do not mix with water, but soil, and do not use in a fresh state.

277—**Removing boards from Vine border** (*Verwood*).—We think you would do well to remove boards early in April, as the sun will warm the border, and though the nights are cold your border will get more warmth than if covered. We do not advise watering border so early in season. Wait until the roots make a demand for more moisture, say as soon as the berries are set. Also dilute sewage water if strong. It is excellent when so treated; or you may with advantage use liquid-manure at season named.

278—**Dahlias in pots** (*A. Duke*).—We presume you are alluding to the single Dahlias only. These are almost always raised from seed each year, and will do well in the border. You cannot get a really satisfactory result from the taller varieties when grown in pots, but the Tom Thumb section may be cultivated in this way, and will need a 6-inch to 10-inch pot of rich soil, well fed with liquid-manure as the plants progress. It is not too late to sow these now. We cannot advise the others for pots; they are not worth the trouble.

279—**Marguerites infested with black grubs** (*R. J. M.*).—Your Marguerites or Paris Daisies are affected by a small grub which eats between the upper and lower cuticles of the leaves. It is somewhat after the Celery-maggot or grub. You cannot kill, simply because it is impossible to reach it without killing the foliage as well. The sole remedy is to pick off the leaves as soon as it is noticed, and continue to do so. Be sure to burn these at once. If very bad, cut the plant down and strip off all the leaves, making a fresh start entirely. It is a very good time for this. If you persistently destroy the grubs, so that none can develop, you will soon get rid of the fly, and have clean foliage once more. Plant the Niphetos Rose as soon as possible. One from a pot will be best.

280—**Plant fertiliser** (*E. J. Fleming*).—The only difference between kitchen and agricultural salt is its coarse and dirty condition; it is the refuse, in fact. The mixture you mention would be valuable for light soils, but we would prefer guano water, at the rate of one ounce to the gallon for pot subjects. Your mixture would have too much salt for most plants, and we would leave that ingredient out entirely if dressing a pot plant. Give a tablespoonful to a growing plant in a 6-inch or 8-inch pot, spreading this over the surface, lightly stirring it in, and then just covering it with a little fresh compost. As you water the plant this very soluble food will be carried to the roots. But there is no better artificial manure for general use among pot plants than genuine Peruvian guano.

281—**Loam and peat.**—What is loam and what is peat? How are they distinguished, and where obtained?—G. J. M.

*** *Loam is the first spit of a pasture, and peat is cut from moorlands; it consists of tree-root fibres. Cannot you get any near you?*

282—**Sulphate of ammonia for Cabbages, etc.**—I beg to say that the soil is fairly light, not sandy, but poor.—W. HOLLIS.

*** *If the soil is light it will take the food in larger quantities, and prove a good fertiliser.*

283—**Sowing seeds.**—Kindly say the best time to sow the following seeds to make good plants to stand the winter outdoors on rather a heavy soil—viz, Wallflowers, Canterbury Bells, Stocks Emperor and Brompton?—S. CAMERON.

*** *Sow seed of the Canterbury Bells now, of Wallflowers April or May, and the Stocks sow in June and July.*

284—**Growing Watercress.**—Will you through GARDENING give me some information as to the growing of Watercress, having a good spring of water to work upon? The surrounding soil is rather marshy, and the situation is in a small valley.—WATERCRESS.

*** *To grow Watercress you require shallow water, a clear base, and plant in gravel or shingle. Procure long pieces with roots attached and plant in bed, weighting down the plants with stone or gravel. See note on this subject from one of our readers in present issue.*

285—**Training fruit trees on wall.**—I have been planting some young fruit-trees—Apricot, Peach, Plum, and Pears, trained for wall. Kindly tell me should the long shoots be cut back this spring, or should they remain as they are through the summer?—E. A. S.

*** *The long main shoots should be shortened, if strong, to about half their length, weaker ones cut a little more. You see if you do not prune your trees will not make shoots. At lower part trees will be naked in after years.*

286—**Planting Ranunculus roots.**—I planted some Ranunculus about a month ago with the claw upwards. I find that this was wrong, and that it ought to have been downwards. Will you kindly tell me what I must do? Must they be lifted and turned now, or will it injure them, as some I looked at have rooted?—M. D. S.

*** *Lift the roots carefully and replant the right way upwards. If you use care they will not be injured, as they cannot have advanced to any extent. Plant firmly, and use a light but rich soil, raising the bed a couple of inches above the surrounding soil, and scattering a little sand over the crowns before adding the 2-inch layer of finely sifted compost.*

287—**Mealy-bug in vinery.**—I have got some mealy-bug in my vinery, and Stockholm tar has been highly recommended round here as a sure cure for it. They tell me to paint the rods all over with the tar. I am afraid if I paint them over it will kill the Vines. What do you think about it? I shall be very pleased with any information about the above.—Stockholm.

*** *If you paint with pure tar you will certainly injure your Vines. A very small quantity mixed with clay, say ½ pint to a gallon of mixture, will suffice.*

288—**Cutting down Rhododendrons.**—Kindly inform me if an old bush of Rhododendron ponticum would grow again if cut down? If so when should it be done, and should it be cut quite down to the ground?—Rex.

*** *You can cut back the Rhododendron at any time during autumn or early spring. It will look very bare for a time if cut hard, but will break out even more freely than the common Laurel. It does not much matter how low you cut it. We have often cut back to the ground, and also branches 6 inches in diameter, in each case securing a successful break of new growth.*

289—**Clematis Miss Bateman.**—I have a young plant of this Clematis in cool greenhouse, little more than 1 foot high, but showing two buds. Would it be better for plant to remove them? Much obliged if an answer could be given in next week's Gardening.—Kerry.

*** *There is no reason whatever for removing the two flower buds. You may enjoy their beauty without the least harm to your plant. Miss Bateman Clematis belongs to the patens group, which are spring bloomers, flowering upon the ripened wood of the previous season.*

290—**Leafy Daffodils.**—"Co. Dublin" has a number of Daffodils in her garden, but this year there are scarcely any flowers, only leaves. What can be done with them? Why have they stopped flowering?

*** *In all probability because the bulbs were not properly ripened last year. Leave them undisturbed, and do not cut back the tops prematurely. Daffodils and other hardy bulbs should be allowed to grow naturally.*

291—**Value of Jadoo-fibre.**—Will you kindly tell me if Jadoo-fibre is suitable to fill a stone vase in which to grow Ivy-leaf "Geraniums," Marguerites, Ferns, etc.?—A Lover of Flowers.

*** *Excellent; but pot firmly, and afford plenty of water in summer. Ferns do especially well in it. The fibre will require no additions but the help of the liquid especially made for it; or a little guano or nitrate of soda dissolved is a great improvement when the plants have grown freely.*

292—**Cytisuses not blooming well.**—My Cytisus plants in pots are not blooming well this year. The gardener seems not to have cut or trimmed them at all in the last year. Is this right?—Co. Dublin.

*** *There is no difficulty in flowering the Cytisus fragrans. Perhaps they were dry at some time; this causes loss of bloom. Whether cut back or not young growth should flower. We prefer to cut them back into more shapely plants, but this is entirely a matter of taste.*

293—**Arum Lilies not flowering.**—Plants potted last autumn are not flowering, although they are large plants in 10-inch pots in greenhouse, and full of roots. Would it spoil future flowering to divide and repot now?—Kerry.

*** *You must not disturb while in full growth. Water freely with liquid-manure, and you will get a grand show of bloom. A 10-inch pot is a fair size, and so long as you supply plenty of liquid food will be ample to develop the whole of your blossoms. Divide when almost dormant, and repot late next autumn.*

294—**Pruning last autumn-planted Roses.**—Ought Roses (dwarf, standards, and climbers) which were planted in the autumn be pruned this spring? They have survived the winter, and are showing the green leaves, but there has been no time for growth so far.—Ignoramus.

*** *Yes; prune rather hard the first spring, and do this as soon as possible now.*

295—**Making liquid-manure.**—"C. S. H." would like to know how to make liquid-manure for plants, and what is the best kind?

*** *What kind of plants do you need it for? Some prefer one manure and some another. To answer you as to the best we should need some little guide as to your subjects. As a rule, the drainings of a stable, carefully diluted, are excellent. You cannot go far wrong if you dissolve ¾ oz. of Peruvian Guano in a gallon of soft water, and use three times a fortnight.*

296—**Herbaceous Pæonies not flowering.**—Can any of your readers tell me why my herbaceous Pæonies do not blossom? They have been planted in a sandy soil for four years and have made large plants, but have never bloomed.—K. Williams.

*** *We hardly think the Pæonies a good subject for your locality; but at anyrate you are not feeding them enough. They need a very rich soil. Either lift and replant after adding a heavy dressing of thoroughly decayed manure, or mulch with same at once. Do not place the manure direct on top of the crowns, but give at least 3 inches depth around them, and just cover this with fresh soil to take away the unsightliness.*

297—**Arum Lily running to leaf.**—We have large pots of Arum Lilies, but this year they yield only leaves with one Lily, or at most two in each pot. Why is this?—Co. Dublin.

*** *Most likely your plants were overpotted. Keep them in the same, and try again next year. Feed well while in full growth, and never let them feel the want of water until they are drying off in late summer.*

298—**Snowdrops and Crocuses after flowering.**—Is this the proper time to root out Snowdrops and Crocuses which are growing right in among the roots of double Primroses? I want to save the bulbs to transplant.—Co. Dublin.

*** *Wait a few weeks longer, until the foliage has matured more; then you can lift the bulbs safely, and either replant at once or keep them in a shed until next November. We prefer the latter plan.*

299—**Blackberries against fence.**—I have received six Blackberry roots (Wilson Junr.), also six of another sort with red stems (no name). Will they grow against fence facing west and south, slightly shaded with trees? Also if they may be pruned like Raspberries, or must they be allowed to ramble? Fence 6 feet, wire above that 3 feet.—B. Berry.

*** *You could scarcely choose a better subject than the Blackberry you name, and the Wineberry. Leave the long rods to fruit, and simply thin out the weaker laterals each spring if too much crowded.*

300—**Treatment of Cannas.**—I got four growing plants last year, they did not flower, and now the foliage has died down. Would you please tell me what to do with the roots? Should I keep them dry for a short time, or repot at once and give water? A reply in Gardening will oblige.—Isa Balmain.

*** *The Canna is a herbaceous perennial, so that the behaviour of your plant was only natural. Turn them out of their present pots and soil, and repot in the following compost: Thoroughly decayed dung and leafsoil in equal parts, and the remaining third made up of loam, peat, and a little coarse sand. They enjoy a rich compost, and start best if afforded a bottom-heat of 60 degs. to 65 degs. Pot on as they need, and treat liberally in the way of liquid-manure, when you will be certain to have a grand show of blossom. After new growth has commenced the Canna needs an abundance of water, but must be carefully and efficiently drained. It is quite probable you did not treat them liberally enough last season.*

301—**Trapping woodlice.**—How can woodlice and slugs be destroyed in an old greenhouse, and what is the simplest way to destroy green-fly on some new pot Roses in greenhouse?—Co. Dublin.

*** *You must trap the woodlice by placing a little gas-lime between a couple of boards, or tiles, putting these about a ¼ of an inch apart; or by placing pieces of fruit in dark corners and crevices, examining them and killing the insects. If very troublesome stand your plants upon an inverted pot standing in a saucer of water. Green-fly may be checked by syringing or fumigation, but you had better use very mild measures more often than to overdo it once.*

302—**Daffodils not flowering.**—Some years ago I planted a large number of common yellow Daffodils in various situations. The first year they flowered well, since then they have not flowered at all, although they have greatly increased in size and are very fine, healthy-looking plants. What is the reason of their not flowering? And can anything be done to make them?—W. B. A.

*** *Common Daffodils should flower well if left undisturbed, whether in the border or planted in Grass as a wild garden feature. As your bulbs flowered the first year all right, it may be better to lift them as soon as the foliage dies. Store in a cool and dry place, and then replant early next autumn. We never experienced the least difficulty in flowering these, and have had them improve in this respect year by year.*

303—**Plants in tubs.**—I wish to have two tubs in a sunny position facing almost due south. Would Aloes or Yuccas flourish in them? If so, would you kindly tell me the best sort to get, what to plant them in and when? Or would you advise any other ornamental plant in preference?—Gwynant.

*** *We should prefer the beautiful Funkia grandiflora; or cannot you have such things as the Agapanthus, which would only require a little shelter during the winter.*

304—**Clematis graveolens.**—What colour and habit? Is it hardy and similar in growth to Clematis Flammula?—S. Cameron.

*** *The flowers of this Clematis are of decided yellow colour, which is not common in this family. This Clematis was introduced from the Himalayas in 1771, and is of free growth. The large downy seed-heads are conspicuous. In the style of C. Flammula.*

305—**Use of seasand.**—Please say if seasand will answer for mixing with soil for bulbs, Azaleas, Heaths, etc.?—G. J. M.

*** *This is not good for pot plants. It is too salt. Use only best silver sand for plants named.*

306—**Repairing a lawn.**—Would you tell me how I can repair a lawn sufficiently well to make it fit in time to play tennis on. It has until now been used for chicken pens, and the ground is full of enormous holes, and the Grass quite lumpy and coarse.—Chelbury.

*** *A note upon the renovation of lawns, which we publish shortly, may be of service to you. Do not manure yours after chicken; their droppings are really too strong for Grass. But what an idea to turn chicken-pens upon a lawn wanted for tennis! You must fill up the holes, and sow Grass-seed and Clover at the rate of 1 pint to 100 square feet. Otherwise you must fill up and lay some of the best growing turf you can procure. Be sure and ram this firmly; also to press each piece close to its neighbour. Then sow one fourth of the quantity of Grass-seed recommended, and roll frequently when this has sprung up. Frequent mowing and rolling is all you can do unless the whole be lifted and relaid. But as we do not know the exact circumstances, we would recommend you to get local advice in this case.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Chalbury.*—1, Pteris cretica cristata; 2, Cyperus alternifolius; 3, Pteris serrulata; 4, P. e. cristata.——*Fifteen Years' Reader.*—1, Clivia miniata; 2, Habrothamnus elegans; 3, Justicia species, but cannot tell definitely without flowers; 4, Send fertile frond, please; 5, Latania borbonica; 6, Francoa ramosa; 7, Crinum capense probably, but please send flowers.——*J. Graham.*—1, Thujopsis dolabrata; 2, Mahonia Aquifolium; 3, Berberis stenophylla; 4, Thuja Lobbi; 5, Berberis aristata; 6, Veronica Traversi.——*Novice.*—The name of your plant is the Oleander. It is a greenhouse subject, a good room plant, but difficult to flower unless afforded a warm and moist temperature when the flower buds show. You have kept the foliage remarkably clean, but do not use too strong a wash now that it is so free from insects. The Nerium, or Oleander as it is generally called, needs plenty of water, and will enjoy a little liquid-manure when growth commences.——*T. T.*—The specimen leaves of the two Chrysanthemums sent us are correctly named, so far as we can judge. The finely cut leaf numbered two is M. Georges Biron, and that numbered one is Arona.——*J. Cooper.*—Corydalis solida (C. bulbosa).

LAW.

Lopping overhanging branches of trees.—Can my neighbouring proprietor compel me to lop off all branches of growing trees in my wood adjoining his property and overhanging it? If I refuse can he cut them off? The trees have been there 100 years, and both properties 30 years ago belonged to the same proprietor.—I. N.

*** Your neighbour cannot compel you to cut the overhanging branches, but if you do not cut them he may cut them himself, and it is no matter how long the trees have been planted. Further, it is not even necessary that he should give you notice to cut back the branches—he may cut them himself without giving you any notice whatever. This was so decided by the House of Lords in the case of Lennon *v.* Webb in 1894.

Servant looking for situation—deduction of wages.—On October 11th last I had held for five years the situation of groom and gardener to a gentleman, who then gave me a fortnight's notice, merely because he preferred a change. I obtained another situation before the notice expired, but from my last week's wages there was deducted one and half days' pay for the time lost by me in obtaining a situation. Was this legal, seeing two days are allowed for such a purpose by law? I am aware that I could have demanded a month's notice.—A. S.

*** You are mistaken; there is no provision of law entitling a servant to two days in which to seek another situation. If you went without your employer's permission you were liable to dismissal and to forfeiture of wages. The deduction was perfectly legal. You might have demanded a month's notice if you had chosen, providing there was no bargain to the contrary.

Hours to be worked by apprentice (*Amateur*).—No hours for work having been named in the indenture, the apprentice to the florist must work during the hours customary in the trade. If six to six are the customary hours he must observe them. If he habitually comes late a deduction may be made from his wages, but it would be illegal to stop a day's wage whenever the boy was late.

BEES.

SEASONABLE WORK IN THE APIARY.

Preparations should now be made for the coming season by examining the interior of hives to ascertain the condition of Bees and the amount of stores in hand. This is easily accomplished where bar-frame hives are used, but more difficult in the case of straw skeps. After having gently removed the quilts from the tops of frames, each comb can be examined as it is removed. The division board having first been moved a little on one side to give room for removing the frames laterally, they should be carefully lifted out of the hive, one by one, raised to the level of the face, and the combs examined on both sides. If the hive is in good prosperous condition there should be brood in quantity, and sufficient sealed stores to last the Bees at least a month. The hive must not be kept open a moment longer than is necessary to arrive at the particulars, and a little smoke must be injected into the hive just before and during this operation to keep the Bees under subjection. Should many Bees be seen on the upper parts of the combs, on the removal of the quilts, it may be concluded that the hive is very short of stores, as the Bees use the honey stored in the lower cells first, and gradually work upwards. In a case of this kind it is best to sprinkle the Bees with thin, warm syrup before commencing the examination of the hive to render them good-tempered by having something wherewith to fill their honey-sacs.

Feeding.—Colonies that are found to have exhausted the stores, must, of course, be at once fed, and that liberally for a time, and afterwards the feeder must be regulated in such a way that only a small amount of syrup can be taken at a time by the Bees; this will encourage brood-rearing, as a constant income of food, although small, stimulates the queen to the production of eggs, but if large supplies of food be continued by means of the feeder, the cells become filled with syrup, and none remain in which the queen can deposit eggs, and so the increase of population ceases. If honey is plentiful in the hive, rapid development can be encouraged by uncapping, by means of a thin, sharp knife, some of the honey-cells. The Bees will remove the honey from these cells as it is required in the rearing of brood. The object in view is to have a large population in the hive by the time of the honey harvest, be it from fruit-blossoms, White Clover, or Heather, and it takes about six weeks to build up a stock of sufficient strength to take full advantage of the honey flow when it comes. Of course, the particular source of honey most abundant in the neighbourhood of the apiary will affect the system of management to be adopted at this season, and when fruit-blossom honey is worked for, all stocks must be stimulated as rapidly as possible without delay. If the source of honey supply be white Clover flowers there will be less need for early stimulation, while by the time the Heather is in flower the population of stocks will have sufficiently increased without any artificial aid. Should a hive be found so bare of stores that starvation is imminent (and it is no uncommon thing for colonies that have not been sufficiently cared for to die out in early spring), it is a good plan to fill a frame of empty comb with warm syrup, and place it in the needy hive. With a little care the cells on both sides of the comb can be filled with the syrup, and if introduced into the hive towards evening it will not be so likely to attract robbers, and the inmates partaking of the warm syrup will revive to activity by the next morning, and be early abroad, should the weather be mild, searching diligently for natural supplies.

Feeding-syrup, artificial pollen, etc.—The feeding-syrup should be made in the proportion of 10 lb. of white lump cane sugar to 7 pints of water, boiled for a few minutes, and 1 oz. each of vinegar and salt added. This can be supplied by means of a feeder, which can be so regulated that the Bees have access to the syrup through one or more holes at a time, according to their requirements. For rapid feeding a wide-mouth pickle-bottle, with fine muslin tied over, answers very well. In cold seasons there is often a difficulty in getting the Bees to take the syrup; in this case flour-candy should be used, placing it on top of the frames, or over the feed-holes in straw skeps. Winter packings should not yet be removed, but the hives kept warm to assist in the rearing of brood. When young Bees are being reared much water is carried into the hive by the workers, and to save them having to travel far in search of it, small troughs filled with water may be placed in sheltered, sunny corners about the apiary. Small pieces of Cork, Moss, or small sticks may float on the water to enable the Bees to drink in safety. Pollen is also needed in rearing brood, and when it cannot be obtained abundantly the Bees should be furnished with Pea-flour, Lentil-flour, or Oatmeal. If placed in a shallow receptacle near the apiary, quantities of it will be gathered and taken into the hive, but as soon as natural pollen is abundant the Bees disregard it. S. S. G.

307—**Plants for Bees** (*M. M.*).—Mr. Cowan, one of our greatest authorities on Bees, recommends fruit-trees (especially Apple, Pear, Cherry, and Raspberry), Whitethorn, Snowy Mespilus, and White Clover; also nearly all single flowers, Sainfoin, Lime-trees, Alsike Clover, Buckwheat, Mustard, Catmint, Fig-wort, Phacelia, Borage, Crocus, Limnanthes Douglasi, Arabis, Wallflowers. Other lists will be given if desired. Lime-blossom is of doubtful utility, as it intoxicates Bees to an alarming extent. As a general rule all single flowers are good, and, of course, the larger the stamens the greater the amount of pollen, which is just as necessary to Bee life as honey.—E. A. H.

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POULTRY.

Hens dying (*J. Wood*).—I think it extremely likely your hens were either crop-bound or died from apoplexy. In the former case the Indian Corn and Cauliflower would probably form a compact mass and stop the passage to the stomach; the bird would, therefore, be always feeding and yet never be able to satisfy its hunger. Under the circumstances a goodly quantity of water is partaken of, but this again must be retained in the crop, and would soon become discoloured through coming in contact with the other contents. In apoplexy, the cause is undoubtedly due to overfeeding, the fat birds either dropping from the perch, as yours did, or dying on the nest after the exertion of laying. Indian Corn is a very fattening food, and is altogether unsuitable for hens kept in so small a run as yours appears to be.—Doulting.

Is a full moon beneficial to the hatching of chickens? (*J. B. D., Bilbao*).—We have never heard "that chickens hatched when the moon is at its full are stronger than those which leave the shell at or about new moon." We should consider such an assertion merely an old woman's fable, on a par with many others connected with the hatching of chickens. Strong chickens depend principally upon being the produce of vigorous stock, the male bird not being overdone with hens; the eggs being entrusted to the care of a steady sitter, and set as soon as possible after being laid. Given these conditions, we would guarantee to hatch as good chickens when the moon is new as at any other time.

Death of hens (*Chalbury*).—Your hens appear to me to be suffering from diphtheritic roup. Unless the stock be extremely valuable I consider the best remedy is to kill the ailing specimens as soon as discovered, bury them in quicklime, and limewash the houses and runs immediately, also using disinfectants at the same time. A bird which recovers from this disorder is liable to drop off suddenly, and is practically useless for stock or eggs. If you are determined to treat, put the bird in a warm, moist place, where steam can be diffused by the evaporation of boiling water. Carefully remove all detached particles from the mouth with a piece of sponge or camel-hair brush, wet with carbolised water —1-40. After cleansing mouth and throat, paint the latter gently with a weak solution of liquor chlorinated soda, 1-10 of water. The inhalation of acid vapour does good, 1 oz. of acetic acid to a pint of boiling water. The bird's head should be held with the mouth open over the steam for five or ten minutes at a time several times a day, the throat being previously mopped as before. When shreds or specks appear the parts should be painted with tannic acid (5 grains) and glycerine (1 oz.). Give food in small quantities. Milk thickened with Arrowroot, finely-minced raw beef, and in severe cases a few spots of brandy may be mixed with the emulsion, as also cod-liver-oil. For some time after recovery care must be taken not to expose the bird to damp or cold.—Doulting.

BIRDS.

Canary with skin irritation (*E. Roberts*).—The irritable condition of the skin from which your bird is suffering would arise from various causes, being often associated with either indigestion or the presence of parasites in the cage. The feet may have become diseased through your omitting to supply water for bathing frequently. Irritability of the skin may also arise from the bird having been kept in an over-heated atmosphere, or from its having been allowed to partake too freely of sweet cake, sugar, or egg food, which produce a gross condition of the system. It would be well to diet the bird for a short time with Rape-seed (the smallest kind of Rape of a purple or reddish hue is the best, being of a cooling quality), and Lettuce-seed, which acts as a slight purgative, and assists in carrying off any ill humour it may have contracted. Slightly anoint the claws with scalded lard or vaseline, and place between the wires of the cage a piece of cuttle-fish-bone to afford the bird a healthy occupation in nibbling at—there is nothing better for keeping Canaries in health. Cages are often infested with parasites which prove very troublesome to the inmates; the presence of these pests may be known if white or greyish spots be observed about the points of the woodwork, or, if a white cloth or handkerchief be thrown over the cage at night, some of the vermin will be found adhering to it in the morning. In this case scald the cage in boiling water, and when dry, paint all cracks and crevices with Fir-tree-oil.

Chaffinch ailing (*E. A. Newcombe*).—In its wild state the Chaffinch lives upon a mixed diet of seeds, berries, and insects, and cannot be kept in perfect health in a state of captivity upon seed alone. Your bird is suffering from what is known as French moult, which sometimes proceeds from debility, or it may be caused through lack of some of the elements necessary to the elaboration of new feathers. A piece of iron or a rusty nail put into the drinking water will communicate to it a tonic property which will benefit your bird. The staple food for a Chaffinch should be Rape-seed; to this you should add, now and then, a little fruit, a mealworm or two, or other insects, and a regular supply of fresh green food. Caged Chaffinches are rather subject to loss of sight, which also appears to arise from debility, brought on through improper feeding, but is sometimes caused from exposure to cold. Should your bird lose the sight of the other eye (which is quite probable), you should put it into a small cage where it can readily find its food and water, when it will adapt itself to circumstances, and, should its health improve, continue as bright and gay as ever, notwithstanding its total loss of sight. A return to their natural diet has been known to restore the failing sight of caged Chaffinches.

Parrakeets (*B. R. Denis de Vike*).—We presume your birds are the species known as the All-Green Parrakeet, natives of South America. They are fairly hardy, and will occasionally breed in a state of captivity. You would, however, have to provide your Parakeets with a more suitable breeding-cage than an ordinary wire oval-top Parrot-cage in order to succeed with them; they would do best in an aviary. A large Cocoa-nut husk, having a hole at one end, forms the best nest, and should be hung up with the aperture turned towards the light. Your birds appear to be male and female.

Birds for outdoor aviary (*Constant Subscriber*).—You can keep ten or twelve pairs of birds in the aviary you are about to construct. Canaries would do well in it, also Goldfinches, Linnets, Bullfinches, Siskins, Greenfinches, and Redpoles among British birds, and a few foreign birds would also succeed, such as Budgerigars, Cockatiels, Grey-headed Love Birds, and Java Sparrows. Some of the British birds would pair with hen Canaries, and the foreign birds would breed freely among themselves. You would have to provide nest boxes and small Box or Fir-trees for the birds to build in. Keep the floor thickly strewn with sharp grit sand (not dust), and if you can provide a few square feet of turf, to be renewed from time to time, it will assist in keeping the birds in good health. The south side of the aviary should be open, if possible, and fitted with wire-netting of small mesh. There are bird dealers to be found in most towns who would be pleased to supply you, or you could obtain what you require through the *Bazaar*, which is published at 170, Strand, London.

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CLEMATIS, &c.—All colours, with graveolens, crimson, new yellow, 10 var., 3s.; 5 var., 1s. 6d.; 3 var., 1s. Grand Roses, 100 var., 35s.; 50 var., 16s.; 12 var., 3s.; 3 var., 1s. Extra strong, free. List.—BROUNT, Crowboro', Sussex.

GARDENING ILLUSTRATED.

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HOW TO IMPROVE THE LAWN.

None can help but admire a well-kept lawn—one with a velvety and even surface of emerald green, so pleasant to the eye and elastic to the tread. There are lawns and lawns, Grasses and Grasses—and weeds. If I am to judge by the many queries recently appearing in the pages of Gardening, there is greater difficulty found in maintaining a satisfactory lawn than any other one adjunct to the garden.

Moss seems the greatest trouble; but this need not be the case if one gives a little consideration to the matter. Moss will not grow upon a rich soil, but thrives in poor and damp composts; nor will our beautiful forms of lawn Grasses thrive upon a poor and unduly wet soil. It must be drained and improved by the addition of manures of some kind. Rake over the mossy places with an iron toothed rake and press this well into the Moss. Then sow wood-ashes, soot, or a good mixture of thoroughly decayed manure from a spent hot-bed, and decayed vegetable refuse, giving a dressing of a peck of compost to the square yard, but a quart of soot or ashes is ample. When rain has fallen upon this and partly dried off again, give a good sweeping with coarse Birch-brooms or rough boughs. If very wet, you will, of course, remedy by sinking a few drains. These are not very expensive, and need not be more than a foot or so below the surface. Small 2½-inch pipes are better when used liberally than larger sizes at greater distances apart and deeper in the soil. Secure a fairly rapid fall, set your pipes with care, and be sure to place a few stones or coarse ashes over them before replacing the soil. Wait a short time before relaying the turf, so that the soil may settle somewhat. Then give a thoroughly good dressing, and afterwards sow some of the best lawn Grass seed at the rate of a quart to 300 square feet. To my mind, few of these mixtures contain sufficient White Dutch Clover, and I would add another 2 oz. of this to each quart. This seed is so much heavier than the Grasses that one finds it almost impossible to sow evenly. Indeed, for that matter, I prefer a well-riddled compost of leaf-soil and loam, thoroughly mixing the seeds with this, and then sowing the whole broadcast. It secures greater uniformity, and also insures most of the seed being just covered with soil.

A very dry soil is also bad for a lawn unless we take the precaution to manure with a little judgment. For instance, it would be unwise to dress with soot, or with nitrate of soda in the condition as sold. These would have a tendency to increase the dried, brown, and parched appearance of many lawns upon naturally dry soils. Rather add decayed stable-manures, agricultural salt, bone-meal, and superphosphate. Most dry soils can be rendered very suitable by care in feeding, and it is fortunate that none of our best Grasses for the lawn will thrive in wet soils, however rich they may be.

There is no better time than the present for applying manures and killing Moss. Do not use natural manures too freely; they are all offensive to the eye and nostrils compared with artificial mixtures applied during or just preceding a shower. A bare spot may have a little soil and seed scattered over it, and a few pieces of coloured thread that have been passed around some small strips of rag stretched across such places as were newly sown. Otherwise birds will take up the best Grass and almost all of the Clover-seeds.

Poverty of soil is a great source of poor lawns. The finer and more delicate Grasses are overrun by stronger varieties—by such noxious weeds as Dandelion, Docks, Plantains, etc., and when once this is the case you cannot get the lawn into perfect condition without much labour. The various concoctions sold for eradicating such strong and vital weeds as Dandelion, Docks, and Plantains do not meet with my approval, I having found them injurious to the most valuable Grass as well. I fear we cannot kill such by merely sowing a mixture broadcast without always harming the very plant we wish to encourage. They must be dug out with patient labour and never allowed to seed. The clipping or beheading of these by the lawn-mower only induces a more spreading growth, and often increases the number of crowns, especially to Daisies and Plantains.

Many queries have reached me asking a remedy for bare patches beneath trees. This will be found a somewhat difficult matter. The trees absorb all nourishment, and either take the whole of the moisture or impart an excessive drip from their branches at the very time such is least required. You can only feed the Grass carefully and afford liberal waterings upon the evenings of hot and dry days if the season be especially dry. Mow frequently and roll soon after a shower has fallen. Worms will not be so troublesome then, and the whole appearance be a vast improvement upon lawns less frequently rolled and swept.

P. U.

SOWING SEEDS.

As a rule it is a mistake to buy very cheap seeds, because although they may germinate freely and produce plenty of plants, yet from want of care in the selection of the stock, the crop will be of little value, and sometimes even quite worthless. This is often lost sight of by amateurs and others who purchase so-called cheap seeds. Generally speaking, the seeds should be sown in drills, for then not only is there a saving in the quantity used, but less labour will be required in cleaning and thinning the crops. In the case of early-sown outdoor crops the seeds should not be covered so deeply as those sown later in the spring, when the sun's warmth has penetrated the soil and raised the temperature. Large seeds, like Peas, may be covered about 2 inches in depth; smaller seeds from ½ inch to 1 inch, making some allowance for the condition of the soil when sown and the period of the year. For instance, when sowing Peas in December or January, unless the site chosen is very warm or dry, it is better to sow very near the surface than to bury them more deeply in a wet and cold medium, where the plants, when they do struggle through, will be weak and spindly in their growth, and unable to withstand cold; whilst successional sowings, when hot weather may be shortly expected, will thrive better if sown in deep drills or shallow trenches, and by such a course they are enabled to obtain a greater amount of moisture for a longer period. Rain-showers in summer always water the hollow places most, therefore when artificial waterings are necessary the moisture will be more easily retained around the plants. When dates are given for the planting or sowing of certain crops, it should be understood that they are always to be subject to the weather and the natural condition of the soil. During an experience of many years I have found that by watching and waiting, and then seizing a favourable opportunity when it offered, a good seed-time could generally be secured. In dealing with heavy land in a difficult season I have derived great advantage from having a heap of light rich compost, in which the charred remains of the rubbish-heap formed a considerable portion, to cover all small seeds. This is a point that calls rather for forethought than extra labour, and the benefits derivable therefrom will be found to be great. When one has to deal with a heavy, tenacious soil in an uncongenial season, it is also a great consolation to the cultivator to feel that reliance may be placed upon every good seed growing, even supposing that extra trouble had been incurred. I have heard complaints of flower-seeds not growing when sown in the open border in spring, and the seedsman is sometimes then blamed for supplying bad seed, when really the fault has been in the way the ground has been prepared and the seed has been sown. It would be far better to sow hardy annuals in August, for then the land is warm and nearly every seed will grow; but in March and April the soil is often wet and cold, and small seeds, if carelessly sown when the surface is dry, and lightly covered with warm, sifted earth, there will be no difficulty in obtaining a good crop of plants. Sow only when the land is in good condition to receive the seeds, even if you have to wait a week or ten days for a favourable opportunity. Sow thinly, for if reliable seeds are bought there is a waste both of seeds and time in thick sowing. Commence thinning the young plants early, and examine them two or three times before that operation is finally completed. During cold springs the young plants derive a good deal of shelter from near association with their neighbours; all that is necessary to guard against being overcrowding from thinning being too long delayed. A crop neglected in this particular rarely or never turns out well.

B. H.

The culture of the Lilium auratum.—In a recent issue I notice the above alluded to by one interested in growing these lovely bulbs. I was for some years subject to continual disappointment, but not so now. My plan of success has been, when planting newly purchased bulbs or the old ones repotted in November, to use pots suitable to the size of bulb, and, with good drainage, plant them half-way down the pot, covering the bulb with a small mound of the soil. This leaves a gutter, so to say, vacant all round the pot to water them as required all the winter. I never water on the

bulb during rest, but always keep it moist below. The pots are placed in the cellar, free from frost all the winter, with no covering of any sort except a board on top to keep the mice away. Mine have all thrown up strong spikes, and bid fair to be very fine. Of course the pots are brought to light when the growth appears, and are then filled up with soil to grow on.—J. Gardner.

ROSES.

IN THE ROSE GARDEN DURING APRIL.

We must not imagine that the labour and hand-smarting inseparable with pruning ends our present work among Roses. There is still much to be done before realising the crop of flowers. This is one of the very best seasons to apply mulchings of well-rotted manures. Pig-dung is about the most valuable of these, closely followed by night-soil, well mixed with dry earth, and the best corn-fed manure from the stable or fattening-stall. Mulch liberally; most of its offensive nature will be gone by the time floral beauties are with us.

There is one case in which I would hesitate to use these manures, and that is around plants upon the lawn and adjacent to the dwelling-house. It is true that the Rose enjoys a rich soil, but it is by no means a necessity that it have crude and unsightly manures, unless one wants a few of those grand examples found in the exhibition box, in preference to a quantity of useful and decorative blossom. In the Rose-beds, or Rose garden proper, we can use them, and very lightly fork over the soil later on, when foliage and blossom have become attractive, but near the house I prefer a heavy mulching of a rich compost, such as manure and decayed vegetable refuse.

There is one point I note was not treated upon in my article upon pruning Roses. I should have reminded my readers that no time is to be lost before cutting back all stocks upon which Roses were budded last season. The side branches of our standard Briers may be cut back to within three parts of an inch of the Rose-bud, and all breaks from the Brier kept rubbed off as soon as they appear.

Dwarf stocks are budded close to the roots, and may also be cut back to within an inch or so. At the same time look out for any suckers, and remove as completely as possible. When young growths of the Rose are a couple of inches high, dress them carefully with a mixture of decayed manure and leaf-soil in equal proportions; this helps them greatly. It buries the junction of Rose and stock, keeps the whole moist, and assists in a better union. When a little more advanced, draw up the surrounding soil, much after the manner of Potato culture. If you want an early bloom, do not head the plants. But we prefer heading them when about 9 inches or 12 inches high, thus getting more blooms the first season and also a much better plant for future service. Be sure to carefully stake and tie all growth upon maiden plants. They can withstand but very little wind, especially if accompanied by rain.

Insects will soon be troublesome, and must be battled with at once. It is the same here as under glass: delay means havoc to future prospects; and, outside, we are far more subject to the Rose-maggots, Rose-chafers, and saw-flies than under glass. Handpicking, persistently indulged in for a short time early in the season, is the only safe remedy against these most destructive foes. Syringe freely where green-fly appears. In warm and sheltered corners these are already in evidence, but a smart use of the syringe and soft water will check them very much. P. U.

Treatment of Gloire de Dijon Rose.—I have a climbing Gloire de Dijon Rose (new last season), trained up lattice-work against short wall. It started growing well, and has thrown many shoots 3 inches long, but now I find the tops of the two long branches are apparently dying downwards. The principal shoots lower down do not at present seem affected, but I am afraid will die as soon as the disease (?) reaches them. I think the damage or cause must be at the root. Can you tell me the cause? The soil may be too heavy or my garden too confined. Shall I cut the dying part away—say, low down—reserving only two or three of the most prominent shoots? The dying parts (the tops) are above the dwarf wall; but I do not think this can be the cause. Aspect south-east.—E. J. Clarke.

*** The reason of your wood dying down is the recent removal. A Rose scarcely ever carries the whole of its wood through the first spring after transplanting. We have frequently recommended hard pruning the first spring, and you must cut away the dead and dying wood. Cut down to a healthy growing eye, or else to within a foot or so of the base. Wood made upon established roots will not fail in this way.

Pruning Roses (*Venus*).—In answer to your query respecting your Rose-trees, we would advise you to leave the shoots as they are for the present, so that they may become well matured by plenty of air and sunshine. Previous to the plants starting to grow either in the autumn or winter is the proper time to prune them. These Tea-Roses do not require such heavy pruning as those out-of-doors, merely cutting out all thin and superfluous growths.

GARDEN PESTS.

THE BEAN AND CURRANT-APHIS AND OTHER SPECIES.

In Gardening, March 20, I gave what information I could about the Peach-aphis, but I had not space to mention several other kinds which should be alluded to, but which do not each require a separate paper. The habits of all aphides are very similar. They all feed in the same manner, and most of them breed in the summer by giving birth to living young ones, which in their turn, in the course of a few days, give birth to living progeny, so that under favourable circumstances they increase most rapidly in numbers; in fact, at times so fast do they multiply that it seems almost impossible to keep them in check by any means. There are comparatively few plants which are entirely free from their attacks, though some are much more frequently infested than others. The Bean-aphis (Aphis fabæ) is a very common and well-known insect, which at times injures Bean crops very severely. It almost always attacks the tops of the shoots, clustering together on them till they are quite black. This, of course, hinders the growth of the plants, and they become stunted and worthless. When these pests make their appearance the top of the plants should be at once cut off, put into a basket or pail, and carried away and burnt; if they are merely thrown on the ground, as is frequently done, the insects will very probably be able to crawl up the plant again or a neighbouring one. In gardens the plants may be washed or sprayed with ¾ lb. of soft-soap, the extract from ¾ lb. of Quassia-chips, and 10 gallons of water; or 1 lb. of soft-soap, ½ pint of paraffin-oil, very thoroughly mixed and stirred into 10 gallons of water. The perfect insects are of a shiny black colour; the young are at first paler, but they soon become black. This species also infests Docks and Thistles, so that every care should be taken to keep the land free from these weeds. The Currant-aphis (Rhopalosiphum ribis) is often very common on the leaves of Currants, causing them to curl, turn red, and fall prematurely. They attack the undersides of the leaves, and by constantly sucking out the juices the leaves begin to curl and look on the upper side as if they had been blistered. This is a difficult pest to dispose of. Its presence would probably be overlooked until the fruit was well formed and ripening, when it would be too late to use either of the washes recommended above, but the leaves which have been attacked should be picked off carefully and burnt. In the autumn cut the shoots back very hard, and paint what is left with the soft-soap and paraffin wash mentioned above, only use it much thicker. The Apple-aphis and Plum-aphis may be destroyed by syringing or spraying with the soft-soap and Quassia, or paraffin washes; in fact, these washes are most fatal to all aphides. There are a few different kinds of aphis which live at the roots of various plants. Lettuces are often attacked by them, and I have several times found them at the roots of Marguerite Daisies in pots. These aphides injure the plants by sucking the juices from the roots just as others do from the leaves. They can, of course, be killed by the same means as the others, the only difficulty is to make the insecticide reach them effectively, as in passing through the ground it becomes so much weaker, for the earth acts as a filter, and it is very questionable if it be worth trying. Probably the best thing to do is to pull up the affected plants and burn them, and to stir into the holes made by their removal, soot, sand soaked in paraffin-oil, strong brine, lime or gas-lime, so as to kill any of the insects which may be left in the ground. These aphides cluster round the roots, and cover themselves with a kind of white mealy powder. They are in shape and size much like the wingless American-blight, but they are generally of a pale yellowish-green colour. G. S. S.

Grub in soil (*Mina*).—The creature you found on the soil of the pot is the grub of a fly—the drone-fly (Eristalis tenax). These grubs are generally found in stagnant water, and how it came to be in the position in which you found it we cannot explain. It might have been dropped by a bird, or possibly might have come out of a water-can if a little water had been left in one for some time.

Worms (*H. W. W. Musgrove*).—The so-called worms that you sent are specimens of the London snake millipede (Julus Londinensis). Millipedes are most destructive pests, and often very difficult to exterminate. They may often be caught by burying pieces of Turnips, Mangolds, or Carrots about an inch below the surface. They should be examined every morning. If a small skewer is stuck into each they will be easier to find and handle. Watering the ground with a strong solution of salt or nitrate of soda, or giving a heavy dressing of gas-lime, are good remedies.

Grub-infested ground (*L. Fraser*).—Your ground is infested with the spotted snake millipede (Blanjulus guttatus), a most destructive pest and a very difficult one to get rid of. There were also some specimens of the luminous centipede (Geophilus longicornis), which is generally considered to be a carnivorous creature, and for its size is furnished with a powerful pair of poison-fangs, which would, of course, be of no use to a vegetable feeder, except as a means of defence. Watering the ground with a strong solution of salt or nitrate of soda is one of the best ways of destroying them, but if the ground was fallowed and clean a good dressing of gas-lime ought to kill the snake millipedes.

Grubs and insects (*W. Ibbotson*).—The creatures you sent are centipedes, the larger ones the common centipede (Lithobius forficatus), the long narrow one the luminous centipede (Geophilus longicornis). Both feed on animal matter, small insects, grubs, worms, etc. The former are most useful in gardens, and do no harm; the latter I do not believe are injurious in any way, but I must admit that they have been found under circumstances which were very suspicious. I cannot imagine that either had injured your Carnations.—G. S. S.

Night-scented flowers.—Your correspondent who writes in Gardening, March 27th, would be much pleased with the Night-scented Stock, a hardy annual. It would do well as an edging. Flowers shade of lavender and heliotrope. Also White Pinks; the double sort Mrs. Sinkins is well worth growing. Wallflowers, too, give out their fragrance at night. Also Lemon Verbena when brushed against.—A. A. Cobb.

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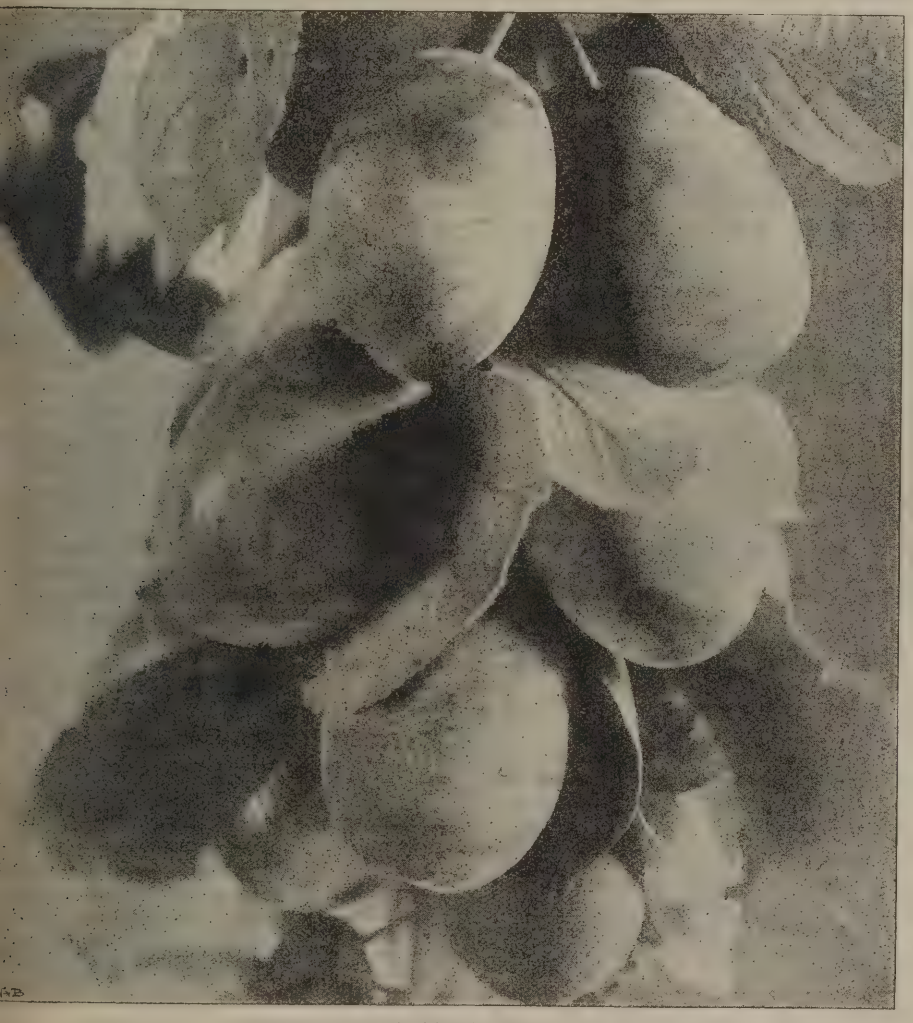
FRUIT.

THE MOST POPULAR PLUM.

If the truth could be arrived at as to which is the most popular Plum in cultivation, the verdict would be given in favour of Victoria. No other variety possesses so many good qualities as this fine old Sussex Plum, and it is very certain that it has been by far the most extensively planted during the past few years. It is a veritable rent-payer. While the other varieties are growing into large and serviceable trees the Victoria is producing enough fruit to help, if not to wholly meet current expenses. In common with other early and heavily productive fruits, trees of Victoria rarely attain a large size, nor are they ever likely to do if allowed to bear as much fruit as may set on them. In the orchards it forms a medium-sized, somewhat spreading standard, and for this reason, and also from the fact of its precocious habit of bearing, it is just the sort to plant in rows midway between varieties and kinds that attain a much larger size and are slower in coming into full bearing. It is as low or medium height standards that this variety should be grown, the habit of growth not readily lending itself to bush or pyramidal training. The Victoria is also well worthy of a place against walls of any moderately warm to comparative cool aspect, a long succession lasting, say, from the middle of August till the middle of September, being had by varying the sites of the trees. As a poor man's Plum it has no equal, and a trained tree of Victoria for the cottage walls and a standard for the open should be among the first selection. Hereabouts the trees seem to thrive fairly well everywhere, a moderately strong loamy soil evidently suiting the variety. It is not particular, however, as to soil, only the trees ought not to be impoverished at the roots, or an early failure is inevitable. Overcropping is the mistake most often committed with this variety. If there is any fruit at all, and it is not often it fails, this is almost certain to set in great clusters. The fruit ought to be early thinned out, this operation being rather severe if the crop is heavy and should not be delayed till the natural process or premature dropping commences. One thinning is not enough. When the Plums are changing for ripening some ought to be used in pies, and when colouring, a heavy thinning should take place, the fruit then being quite saleable and fit for making into preserves. Not being overladen, the trees will swell the reserved fruit to an extra large size, the quality also being far superior to that of fruit gathered from heavily-cropped trees. Fully-developed, well-ripened Victoria Plums are really quite good enough for dessert, and will always sell readily. I.



The Victoria Plum.

Pear Beurre de Jonghe.—This may be termed a December Pear, although in exceptional seasons it will keep well until January is far advanced, but as a rule it generally ripens about the third week in the last month of the year. When well grown it is a fine Pear in every respect, and it richly deserves the protection of a south or south-west wall. Grown out in the open as a bush it is a failure, but as a cordon on the Quince and trained against a wall it is then a success, and produces good crops of its medium-sized fruits. When better known this Pear will no doubt be more largely planted. The flavour is first-rate, and it also possesses the good quality of keeping in a sound condition for some time after arriving at maturity. The flesh is white, juicy, and melting, and deliciously flavoured.—A.

Plum Dymond.—This does capitally as an ordinary standard in the open, but fruit from trees on a south wall is nearly as large as Pond's Seedling, and carries a splendid blue bloom. Dymond is not only one of the best Plums for pies, but it also makes an excellent jam. So far as I know, the tree is not at all liable to canker. —C.

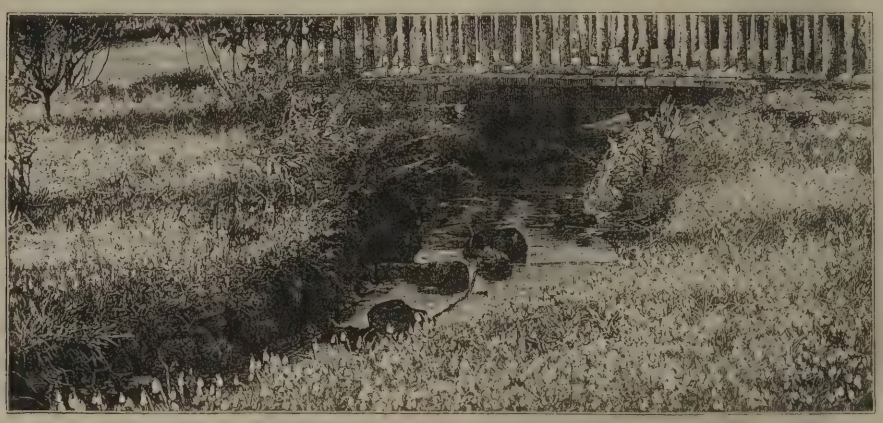
POT-VINES IN SMALL GARDENS.

Generally speaking, in the case of small gardens there is only one little glass-house, frequently attached to the dwelling, and yet holders of these very often desire to have a few Grapes of their own cultivation. Now, where this is the case the best, easiest, and most profitable way is to grow the Vines in pots. In miscellaneous plant-houses it is difficult to rear the young Vines into a fruit-bearing state; therefore, it is generally advisable to procure neatly-grown fruiting-canes from some nurseryman who grows them well, the outlay in this way being a small consideration if future returns be taken into account. The principal thing to bear in mind in choosing the Vines is to select varieties that are easily managed. The Black Hamburgh is the safest to deal with amongst the dark-fruited kinds. The white-fruited kinds may consist of or be selected from Royal Muscadine, Foster's Seedling, Buckland Sweetwater, the Duke and the Duchess of Buccleuch. The latter is small in berry compared with the Duke of Buccleuch, but for producing quantities of bunches there is no Grape that can excel the Duchess of Buccleuch, an important advantage to those who have inadequate space for the cultivation of Grapes. Before placing the pot-Vines in their selected positions carefully wash every inch of the canes with warm, soft water and soft-soap, and in doing this be very careful not to damage the buds or eyes in any way. When the roots are close to the surface of the soil in pots do not disturb them, but carefully remove any loose soil and replace it with a layer of moderately fresh, but rather dry cow-manure. Give a good soaking of tepid water to the roots, and they are then ready for starting into growth, and should be arranged where they can receive as much sunlight and heat as possible, which are mostly to be obtained at the extreme end of the house and sometimes against the wall of the dwelling, and, as Vines do not spoil the growth or appearance of other climbers, a cane may often be trained with advantage into any spare corner. About the beginning of April is quite early enough to start the Vines into growth, because little or no fire-heat is then necessary, and they have, moreover, the whole summer before them in which to develop and ripen their fruit. Plenty of sun-heat and light are of great assistance to the inexperienced Grape-grower. To do justice to the other inmates of the greenhouse the Vines cannot be started quickly at first, and this is a decided advantage, as when growth takes place slowly it is not so likely to become weak, straggling, and unfruitful. In fine weather the temperature should be about 55 degs. at night, and in colder weather it may be 10 degs. lower at night without affecting the Vines, but there is one course which must be avoided as far as possible, and that is to keep them very close and warm for a week or two, and then expose them suddenly to a much colder atmosphere. The side shoots of the Vines must have some support to wires or strings attached to the rafters, but do not tie them too tightly. Pinch or stop each shoot one or two leaves beyond the bunch, and there should not be allowed to remain on each Vine more than six bunches of Grapes. Do not cut off any of the bunches until it can be distinctly seen which are the best formed, and then the berries as soon as they are well-formed. Too many berries should not, however, be cut out at first, but at the same time see that one berry does not interfere with swelling of the others. In most cases, at least, one half the berries is not too many to take out. After the thinning of the berries is completed, give some warm manure-water to the roots three times a week, until the fruit begins to ripen, when nothing but clean water should be used. Guano in a liquid state is the best kind of manure that can be used, and it has no offensive smell. At no time must pot-Vines be allowed to want for water at the roots, and when the fruit is colouring, a free circulation of air should pass around them. During the summer-time, however, Grapes swell their fruit and ripen it well in pots with the same general treatment in the way of air and heat as conservatory flowering plants generally receive, and in this way summer Grapes might easily be grown in every small conservatory with a sunny aspect. When the Vines have once cropped it is seldom they are worth fruiting again in the same pots.—H. B.

OUTDOOR PLANTS.

SNOWDROPS IN THE GRASS.

In soils that suit its growth there are but few bulbs that naturalise themselves so freely as do the double and single forms of Galanthus nivalis. I have seen them free and happy on hedge banks, in orchards, woods, and plantations, and seeding freely on grassy lawns nearly all over England. In most cases I notice that Snowdrops thrive best on moist, rich, holding soils. In Scotland, Dunrobin, from whence the accompanying illustration was taken, is and has long been famous for its Snowdrops, but they thrive in many other gardens over the border, and they are also very pretty on the banks at Durham, and in many of our north-country gardens as well. All through the Midlands in the deep, stiff Wheat and Bean soils they seem quite at home, and in Lincolnshire these tiny bulbs form quite a respectable industry, as most of our trade is thence supplied with these flowers. According to Hooker ("Student's Flora," p. 365), the Snowdrop is a doubtful native, "possibly wild in Hertford and Denbigh." It is, however, pretty generally "naturalised in England and Scotland, but hardly in Ireland." The distribution of wild Snowdrops trends from N. Europe (Holland) southwards and eastwards into Western Asia. It is curious to observe that, although a native of Holland, this bulb does not take at all kindly to extensive cultivation on Dutch soil, being happier in England and Scotland than elsewhere. In Wales and also in Ireland the Snowdrops attain to fully twice their usual size and vigour on rich, moist soils. At Straffan the lawn on which they grow and seed so freely under Lime-trees is frequently submerged by the overflowing of the River Liffey, just as Crocus vernus in the Nottingham meadows is frequently submerged by the rising of the Trent. The point seems to be that bulbs are often bog plants or half aquatic when growing—a fact borne out by the old plan of water culture in glasses as employed in the case of Hyacinths, Iris alata and I. persica, the Chinese Narcissus, etc. The real reason why some plants have formed bulbs seems due to their having had to adapt themselves to the widest extremes of wet or cold, or of heat and drought, at varying periods of the year. The old plan of planting Narcissi in warm and dry sandy soils has now given place to their being planted in moist and half-shady places with much better results. "Beside the lake, beneath the trees," was a true note for cultivators, and not a mere poet's dream, as some may have imagined it to be. The illustration shows the Snowdrop happy and luxuriant in one of its best phases. B.



Snowdrops naturalised in a Scottish garden.

Carnations diseased (*Yorkshire*).—The small white grubs are doubtless the larvæ of the Hydemia nigrescens, a small black-fly, resembling the common house-fly. It is very destructive to the Carnation, eats its way into the centre of the stems, and ultimately kills the plants. The only way to get rid of them is by observing the point of attack and trace its line of progress. A needle or pin is the best appliance to pick them out with. The leather-coloured grubs, ½-inch long and of the thickness of knitting-needles, are probably wireworms. These work under the surface of the ground, and find their way into the stems of the plants, working upwards or downwards, but they never fail to kill the plant. They may be found by removing the surface soil close to the stems. Or baits of Carrots, Potatoes, or Linseed-cake may be buried underground. They will get into these, and if they are examined once in two days the pests may be destroyed. The wireworms are quite as injurious to Pansies as they are to the Carnations. Gas-lime, if dug into the ground, will kill many of the wireworms, but if it is used in sufficient quantity to destroy the wireworms, Pansies and Carnations would not grow in it. The best plan would be to dig in the gas-lime about six months before planting. After that time its deleterious properties would have become absorbed in the soil. A wall 5 feet 6 inches high is not high enough to grow fruit-trees well. Plums, Apricots, and Cherries would be the best to plant.—J. D. E.

Keeping lawns in order.—I should be very much obliged if you will advise me in your journal (Gardening) the best way to keep in good order a large lawn I have here? The soil is sandy, and it has never been rolled and mown regularly, as the natives say there being no depth if it were cut short, it would dry up in summer, but I think letting it always grow to long Grass and making hay of it has done it harm. Will you tell me the best fertiliser to use? How often, and when, and the best roller and mowing-machine to get, and how often each should be used, and if worked by a donkey would not be better than hand machines, and can the two uses be combined in one machine? As there is a lake at the bottom of this lawn I never found it so dry last summer, and though a very dry one, the Grass all round here was very green. You have always so kindly and readily helped me, I am sure I can rely on you for a way out of this difficulty. Do you think a machine cuts too short and a scythe would be better?—C. Holland.

*** To allow a lawn to grow into hay will certainly have a far more exhausting effect than constant cutting and rolling. Please read the article upon the renovation of lawns on the first page of this number. Nitrate of soda and a little agricultural salt would be a good manure for your light soil; also peat-moss-litter after doing service in the stable or cowstall. Use now, and again late in the autumn. How often to cut the lawn depends entirely upon the season and rapidity of growth. There is no golden rule. Cut and roll when 3 inches high, and do not set the mower's knife too closely to the soil. Our advertising columns contain the names of several good mowers, and some are suitable for a strong man or a donkey. As to cutting too short with a machine, that is simply a matter of setting the knives. Cutting and rolling, with the help of a fertiliser applied at the rate of two ounces to the square yard, and, if possible, during showery weather, will secure you a lawn equal to the majority in this country.

Plants on walls.—"Mrs. Lewis" will be glad to have advice as to what plants could be grown on an old grey-stone wall, 15 feet high, facing east, in her garden? The creeper "Pedlar's Basket," and Rue Fern grow, but it wants brighter colouring.

*** The fixing of alpine flowers on old walls, ruins, etc., is one of the most interesting modes of cultivating these plants. They root themselves wherever they get a chance; but when man assists them, then the old wall becomes the most beautiful of gardens. On ruins and old walls near the Alps, particularly in Italy, various alpine flowers and mountain bushes may be seen sown at first by winds or birds. The Colosseum, as everybody knows, was once so rich in flowers that Dr. Deakin wrote a flora of it. On the colossal walls of Caracalla's Baths and many other ruins the Arbutus and the Rock Rose, the Laburnum and the Tree Heath, the Fig and the Honeysuckle, the Olive and the Bird Cherry, the Laurustinus and the Ivy, found a home. The Acanthus, model of the column-rearer, carved its own fine leaves far above his capital; the Maiden-hair Fern came and graced the shady nooks; the Giant Fennel was there in spring with its graceful plume; the Clematis and the Convolvulus, the Cyclamen, the Pink, the Everlasting Pea, the Poet's Narcissus, the Crocus, the Mignonette, the Rosemary, the Violet the Bee Orchis, and a host of others all grow there, too, just as freely as the Pyrenean Erinus grows on old walls, where it has escaped from cultivation, in Britain. With this fact in mind, it is easy to imagine that the number of plants that could be grown in similar positions is very great. It is not without a useful lesson, apart from that of suggesting how old walls may be embellished. The plants grow on these ruins much better than on the rock gardens so commonly made for their accommodation, and the reason is that the rock garden, as generally made, is so loose and open in texture that, though the soil may be very suitable, the plants perish from drought. On the ruin such moisture as occurs between the stones is prevented from rapidly escaping by the stones of the surface and the firm texture of the whole. Thus, on the ruin we find a garden, and on the so-called rock garden we too often nothing but clinkered bricks or bare stones and dust. The best way of establishing plants on walls is by sowing seeds in the chinks and earthy places, the fittest time being early autumn or spring. Small seedling plants may also be inserted carefully in autumn or winter. In parts of the country where Ferns and other plants grow freely on stone walls, good conditions exist for the growth of alpine plants in like places.

Plants for rather dry border, etc. (*H. D. Stratton*).—We do not advise you to allow the Cannas to become root-bound. Pot on into 5-inch pots as soon as possible, or when the plants are large enough to receive the shift. Scabiosa ochroleuca is better known as Cephalaria montana. It is a vigorous-growing plant, and useful for planting among shrubberies or in the wild garden. The following is a list of perennials suitable for your soil, and the position required: Carnations in variety, Cheiranthus Marshalli, Sweet Williams, Erigeron speciosus superbus (one of the best of hardy flowers, purplish-lilac), Gentiana acaulis, Geum montana, Hepatica triloba, Megasea (Saxifraga) cordifolia, Tiarella cordifolia (Foam-flower), Alstrœmeria aurea, Œnothera Fraseri, Pinks, Thrift (edging), and Perennial Sunflower.

Saxifraga oppositifolia.—Perhaps of all the very earliest of the Saxifrages to flower, the varieties of this little group are the least popular at the present time. Frequently we hear of the scarlet buds and satiny white flowers of S. Burseriana, less frequently it may be of the more modern Boydi alba or of the easily grown apiculata, with its blossoms of pale yellow, and certainly still more rarely of the several forms of S. oppositifolia. But to my mind it is this latter group that furnishes the much more freely-flowered groups, and they may be grown by all quite easily. Yet they are seldom seen in good health or vigour, rather the reverse; and the reason of this I am inclined to believe is that often they are planted in spots too hot or too dry. Planted in shade and moisture they frequently assume a luxuriance which, if more generally known, should render them popular with all. In these positions I have grown the several varieties with perfect success, where the plants have developed into patches 18 inches across and carpeted with their prettily-coloured flowers. They also enjoy a deeper and

richer soil than is usually given them, for when planted in good soil on the level they root deeply and spread freely. But in the rock garden these things become dry and starved, and then a patchy, rusty growth is the result. I would, therefore, advise those who grow them to remember this, for these varieties of oppositifolia stand quite alone in the perfect sheets of blossoms they produce at this early season. Impatient of frequent disturbance, they welcome a free sprinkling of good soil among the growths each year and will root into it freely. This, of course, is of the greatest benefit to them, and materially assists a greater luxuriance and freedom of flowering. In the coloured forms, such as major, pyrenaica, and splendens, we have flowers of large size, but a vastly improved white form in this group is much wanted, and may possibly be secured by raising seedlings from the existing kind known as alba. In flowering, the last-named is very free, but the blooms are small and rather more erect than those of the coloured varieties, which expand to quite a large size when at their best.—E.

TREES AND SHRUBS.

Myrobella Plum.—Your article in last week's issue on Prunus Myrobalana has alarmed me. My garden is a narrow strip running north and south, say 130 feet long by 40 feet to 60 feet wide, sheltered from the west by a good wall, but open to the east. On this side, which is 3 feet above adjoining ground, I planted the Myrobella last November, and inside it I am planting a row of Rhododendrons (in peat), Hollies, Lilacs, Roses, etc. Eight feet further in I planted the more robust Apples on Crab stock, and within these a line of Apples on Paradise, and vegetables from that to the wall, on which I have placed Pears and Plums. The soil is fairly good and deep—sandy loam on a limestone bottom. Kindly say am I to understand that the roots of the Myrobella will so overrun the garden, and at such a depth, as to rob the fruit-trees, etc., of their proper share of nourishment, in which case I must throw out the Myrobella at once? Or will the annual digging around the fruit and the summer and winter mulching keep these in proper condition? Also please state whether Prunus triloba is a fruiting or flowering Plum only? If the latter, what is its blooming period?—R. H. Croker.

*** We should certainly hesitate to use the Prunus Myrobalana as a hedge plant in the garden. Its great fault is coarse growth and the tendency to form suckers for some yards round. This last can be checked by deep digging and cutting back of suckers each year. You have arranged your garden very well, but why not have let the more robust Apples occupy the outside edge towards the east? There is scarcely a hardier tree or fruit. We have known the Myrobella Plum kept within bounds by maintaining a ditch upon each side. Seeing that it does best upon stiff and wet soils, the ditch was almost a necessity so far as other subjects were concerned. P. triloba is a semi-double pink Chinese Plum, precious, we believe, for its flowers only; these are like double rosettes, and crowd thickly on the shoots in spring. It is always most beautiful against a sunny wall, but may be grown as a bush on the lawn.

Best dwarf-growing evergreens (*H. C. W.*).—Half-a-dozen good evergreens of dwarf habit, suitable for training against a low wall facing south, would be Ceanothus azureus, a capital free-flowering shrub, bearing small blue flowers. Choisya ternata is one of the sweetest of white fragrant flowers; it is very attractive even when out of flower. Spiræa prunifolia fl.-pl. is the earliest of all the Spiræas to flower in the open air; it is a very pretty sight when its long slender twigs are wreathed with small double white flowers. Eurya japonica latifolia variegata is a very handsome and ornamental shrub, succeeding well in a south aspect. Raphiolepis ovata is of rather slow growth, but by reason of its dwarf habit and pretty Strawberry-like flowers is a very useful subject. The undermentioned half-dozen shrubs will be found to thrive well on a north wall: Berberis Darwini would be very happy, so also would Cydonia japonica, a very early and beautiful spring-blooming shrub. Cotoneaster microphylla would carry a wealth of bright red berries yearly. Elæagnus japonica aurea media is a beautiful Japanese shrub of somewhat slow growth. Olearia Haasti is a grand shrub for exposed positions. The same may also be said of Escallonia Philippiana.

THE DAISY-TREES.

The Olearias are a numerous family from the Southern Hemisphere, and those that we know to be hardy are most ornamental, growing into neat bushes, and producing flowers so much like those of a Daisy that they have been aptly called Daisy-bushes or trees. At present the actual hardiness of several species is not known, and experimental planting with a view to testing is desirable, as we want all we can get of such lovely things as these. Concerning O. Haasti no doubt exists. It is a delightful shrub, always pretty as an evergreen bush, and during the latter part of summer as white with blossom as it often is when wreathed with snow in winter. Though dense and dwarf, it soon makes a good bush or group if planted where it has nothing to contend against. O. stellulata is better known under its original name of Eurybia, which clings to it, and is likely to be used, although botanists now classify all under Olearia. But whatever it is called, it is a shrub that many should try in a sunny spot upon the rock-garden or border. It has small, crimpled leaves and flowers considerably larger than those of O. Haasti, in size as well as shape resembling those of a Daisy. The flowers are pure white, and they appear quite early in summer, each one lasting for some time. A little trouble would be well repaid if it resulted in a flourishing group, and such shrubs as these merit attention and encouragement.

One of the Daisy-trees (Olearia stellulata). From a photograph.

Propagating Daphne indica (*H. W.*).—Daphne indica is readily increased by cuttings taken off either in the early autumn, when the wood is about half ripened, or in spring. The cuttings should be from 2 inches to 3 inches long, the lower leaves being removed with a sharp knife. The soil should be composed of peat and loam in equal proportions, with sufficient silver-sand to keep the whole porous. The cuttings may be either placed round the inside of 4-inch pots or inserted singly in the centre of small thumb-pots. Where room is available the single-pot system is to be preferred, because when potted into larger pots the roots are not so liable to get damaged in the process. The cuttings should be placed in a close case with a temperature of about 65 degs., and watered overhead occasionally and shaded from the sun's rays. It is frequently increased by grafting on to the roots and stems of D. Laureola and D. pontica, but this method is not to be recommended, as cuttings root easily and form good sturdy plants on their own roots.

Raising Rhododendrons (*R. O. C.*).—Two popular methods of propagating Rhododendrons are by seeds and layers. Seed ripens in abundance in this country. A bed of peaty soil about 4 feet wide and slightly raised in a sheltered quarter is a very suitable position for sowing the seeds. The surface soil should be made quite firm, and as the seed is small a very slight covering of fine soil of the same texture should be used. The whole bed should then be watered with a fine-rosed can. When the seedlings are large enough they should be planted out into rows. This time use a little coarser soil, more loam, and less peat. A word about layering. This is a very sure method, but when a large quantity of plants are required propagation by seed is resorted to. There is no great art required to layer Rhododendrons. The method is identical with that practised with Roses. The Rhododendron can be—and is—propagated very largely by grafting. This is done in winter and spring in heat, but it is not necessary, as plants do equally well on their own roots.

A curious Primrose.—Mrs. Knight sends a flower from a plant of Primrose in her garden which has produced this curious sport. All the flowers on the plant are alike, but she has not noticed them on any other plant. [*A curious flower, but we have seen a similar sport. It reminds one of the quaint hose-in-hose and similar forms.*]

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately, three-halfpence, post free, and can be obtained from this office.*

THE KITCHEN GARDEN.

TURNIP-ROOTED BEETROOT.

Of late years the Turnip-rooted Beets have found more favour with many cultivators on account of their quick growth and usefulness for salad. A great demand for salads in the summer has brought these roots into favour, and some of the Turnip-rooted section are more suitable than others. A medium grower of good colour is the one illustrated—the Turnip-rooted Egyptian—a variety which comes quickly to maturity, is of excellent quality and rich colour. There are several other good kinds, and these I will briefly refer to. They are valuable for shallow soils, as many who have poor or stony land can grow the shallow-rooting varieties. I class this section as one of the best for the amateur on account of its being fit for use much earlier than the long-rooting kinds. Another point well worth notice is that these roots may be grown in a small space, and if two sowings are made—one early in April and another in two months' time—there will be no lack of roots from June to December. I am aware a few of the Turnip-rooted kinds lack colour, and in selection of varieties it is well to avoid those which grow to a large size. Last summer, which was not an ideal one for roots, owing to protracted drought, the one illustrated was the best coloured of the small kinds, showing how well it stood heat and drought, and in a poor soil these varieties do best, as they make a quick growth and are shallow rooters.

As regards variety, the amateur can enjoy a good selection. A fine variety for exhibition is the Crimson Ball, a splendid type, with a very small top. It is sweeter than the Egyptian, with a dark red flesh, and being very firm, is an excellent keeper; indeed, it is one of the most shapely roots grown. Another very fine type is the Globe, a variety even superior to the Egyptian, and with the good qualities of the Crimson Ball; indeed, I class these two Beets as a great advance on the older kinds. The Globe is a splendid keeping root, and if given cool storage it may be kept till spring. Amateurs who grow vegetables for exhibition cannot make a better selection, and as these are noted for their handsome shape, combined with quality, they are well worth room in any garden. There are others, but some are larger, the Eclipse being one, also the Bassano. Both these are coarser and not so shapely. I think, too, they lack the good colour of the first named. The

Culture of Beets is so simple that it may be thought out of place to refer to this, but I note many amateurs make mistakes. They are too good to their Beet, with the result they grow coarse and are of poor colour and lack quality. A poor root is not worth cooking. Another point is storage of winter roots. Unless care is taken the best culture earlier in the season is destroyed, as the roots so soon lose their good qualities.

It is quite wrong to sow Beetroot of any kind on recently manured land, as the rich food robs the roots of colour and makes them coarse, with the result the quality is impaired. The common notion that all vegetable crops need rich food at planting is wrong. In the case of root crops, such as Carrots, Parsnips, and even Potatoes, excess of rich foods results in long or bulbous roots to divide or fork badly. They make a mass of thong-like roots which are useless, and the crop is spoilt. Potatoes planted in direct contact with manures are often affected with scab, and the quality is much poorer. Land which was well manured for a previous crop is the best, and by this I mean ground that has been growing Celery or Onions; in fact, any land which was well manured for the crop previous, or had been lightly manured and turned up rough in the winter. It may be asked how can poor soil produce exhibition roots, and, of course, my remarks apply to land well cultivated.

The Beet is very hardy, and also forces well. Those who like early roots may sow a pinch of seed in March (weather permitting), and I have obtained nice roots by the end of May. For general use the middle of April is a good time to sow, and if drills are drawn at 12 inches or 15 inches in good land, and the seedlings thinned to half that distance, there will be nice roots. The plant delights in ample moisture during growth, and well repays good waterings with liquid-manure. In showery weather a little fish-manure, guano, or nitrate of soda sprinkled between the rows will greatly assist growth; in fact, such aids are preferable to large masses of animal manure. Storage for winter should be as cool as possible, and I am never in a hurry to lift my Beet. I have never known a few degrees of frost do harm, and in storing it is best to place in sandy soil or fine ashes to prevent the roots shrivelling. If kept firm the quality is retained, and in lifting it is well to prevent the roots bleeding by bruising. Merely twist off the tops, not cutting. G. W.

The Egyptian Turnip-rooted Beet. From a photograph by Mr. E. W. Billington, Park Hill, Ampthill.

Asparagus.—Those who depend throughout the forcing season on lifted crowns will keep up relays of these according to demand, and will find that from now onward only very little heat is required, as the plants are at this time of the year ready to respond to the slightest forcing. Established beds formed with the intention of forcing the plants where grown and which have been reserved to supply the demand for the last three weeks or so before the ordinary outdoor crop comes in must now be protected with sashes or any kind of suitable covering usually employed for the purpose, and the linings made up between the beds. The linings may have a greater proportion of fresh litter mixed with the leaves, or colder litter than would be advisable in making an ordinary hot-bed, as there will be little danger of overheating the beds. I do not advise that these beds should be cut from for any long period, as this tends to weaken the stools for another year. If blanched Asparagus is desired the beds may have a good covering of light litter, and in this case covering with glass will not be so necessary, though advantageous.—G.

Quick-growing trees for protection (*Thuja*).—The following are admirable subjects to form a break-wind: Perhaps the finest of all are the Austrian and Corsican Pines. Thuja Lobbi is of quick growth, very handsome, and admirably adapted for the above purpose. Taxus baccata (English Yew) and Picea excelsa have been employed with excellent results. Abies Douglasi grows to a great height. The merits of Cupressus Lawsoniana are well known. The Silver Fir (Abies pectinata) and Pinus Cembra are very useful. A local nurseryman will be able to supply all of the above-named trees, which should be planted immediately, otherwise you had better wait until next season.

TREATMENT OF BULBS AFTER FLOWERING.

(In reply to "A. B.," Sevenoaks.)

Out of the enormous number of bulbs annually forced it is strange more are not utilised for a second season. There are two reasons why forced bulbs are of comparatively little use for future service. First, they are generally grown with the express intention of producing an extra good truss, and consequently exhaust themselves in so doing; Hyacinths, Tulips, and Lilies of the Valley are the best examples of this class. Second, very few take sufficient care of bulbs—or other flowers—after their present beauty is past. They are cast on one side, instead of being treated in a rational and natural manner. I have so often been asked as to the best way of treating bulbs that a few words at this season will, I hope, be the means of preventing some of the disappointment so frequently experienced.

There are a few bulbs that I would cast away immediately they have flowered, partly because of their comparative uselessness for the future, and their cheapness, in good quality, at the season best suited for potting up once more. The Chinese Lily and Tuberoses are the chief of these. Then we have a large number of little use for forcing again, but which will be showy in the garden the second and third seasons following. Hyacinths, Tulips, Crocuses, Snowdrops, Scillas, Fritillarias, Lily of the Valley, and Narcissus in variety come under this head. These should be stood on one side, either in a pit or frame, or beneath the greenhouse bench, and gradually dried off. Plant out early in May in the position they are to permanently occupy. If planted direct from the house during frosty weather they will either succumb or be terribly crippled, whereas a little delay avoids this. Those I have named are so cheap to purchase in ripened and well-grown condition, such as will produce a grand show of blossom, that one cannot repay themselves for the trouble of getting their old bulbs into the same state. Then, as I have previously remarked, we cannot have a second truss of either Tulip or Hyacinth in such grand form the ensuing year. These bulbs have been grown in soil specially prepared, and have stored up their flowers with the object of getting an extra good truss when allowed to blossom.

We now come to what are generally recognised under the heading of Cape bulbs. Freesias, Ixias, Alliums, Babianas, Lachenalias, and Sparaxis are representatives of this class. These are very prolific, and may be used year after year if properly treated. That pretty Gladiolus, The Bride, and the Montbretias may receive similar treatment. When this class has flowered, dry them off steadily, and as the foliage dies down place them in the driest place you have. When quite dormant turn them out of pots and store in boxes in a dry shed or cupboard. When the potting-time arrives once more, generally from August to September, according to the species, sort over the bulbs and use only the largest of each for forcing, meanwhile also potting on the smaller ones, but putting these in pans or shallow boxes, and much closer together. These will afford the best bulbs for the following season, especially if you treat both lots alike and do not allow the last to flower the first year.

Anemones I would treat in much the same way. Even those growing outdoors are much best if lifted when the foliage has died down and allowed to rest in a dry place until the following October or early November. Irises and Alstrœmerias are best if undisturbed; but all Gladioli should be lifted and treated much the same as the Anemones. P. U.

Planting Clematises (*C. W. W.*).—The three Clematises we should recommend you to plant would be C. Jackmani, C. Viticella rubra grandiflora, and C. lilacina floribunda. These are all possessed of vigorous constitutions, and thrive where others often fail. A moist, rich,

well-drained soil forms a suitable compost for planting them in. They must be well supplied with water while growing, and a few doses of liquid-manure will also be beneficial. Being gross feeders, a mulching of half-rotted dung during winter, which should be forked in about February, will prove effective in throwing greater strength into the plants, besides increasing the size and quality of the flowers.

THE MECONOPSIS.

The most familiar of this family is our Welsh species, M. cambrica, a true perennial, while the others, natives of Northern India, two of which only are found in general cultivation, are only of biennial duration. They are all, we believe, quite hardy, but require considerable attention on account of their biennial duration, as they have to be raised annually from seed, the seedlings requiring great care in handling while in a young state. They are also difficult to please as regards position, and strong, vigorous plants are almost impossible unless in rich, deep, light soil and a partially shaded situation, where they can have abundance of moisture without its becoming stagnant. The better way in handling seedlings is to grow them in pots during the first winter, planting out early in spring, when the stronger plants may be expected to show flower in July. The smaller ones will go on growing, forming large rosettes which will make robust specimens the following summer. Unless under the most favourable conditions, a slight protection will be required in wet autumns and winters, this being best effected by squares of glass raised a few inches above the crowns. All the species usually flower the second year, and the grower's aim should be to get as much vigour into them in that time as possible.

A Welsh Poppy border. From a photograph by Mr. S. Wyndham-Fitzherbert, Lanscombe House, Torquay.

M. aculeata is usually a small plant in gardens, but capable under proper and liberal treatment of forming bold, massive pyramids of purple flowers. It is a singularly beautiful plant. The leaves are cut up as in M. Wallichi, and the flowers are produced much in the same way. It is a biennial also, and a native of the Himalayas.

M. cambrica.—For the truly wild portion of the garden, for the rock garden, or for the flower border the Welsh Poppy is one of the most charming and useful. On old crumbling walls whenever it can get hold its ample Fern-like foliage and abundance of orange-yellow blossoms are striking and attractive. It will grow almost anywhere. It requires no attention, unless that of thinning out occasionally, as it is a free grower and will overrun almost anything. On the other hand, where it can be allowed space in out-of-the-way corners, stony ground, or even the edges of gravel paths, it flowers freely.

M. nepalensis, the commonest Indian species found in gardens, is altogether smaller than M. Wallichi, but withal a pretty fine-foliaged plant, and on this account alone should be much oftener seen in collections of hardy plants. The soft yellow-green leaves form dense rosettes, which are said in a young state to close up or fold over as a protection to the tender crowns. The flower-stems vary from 3 feet to 5 feet, producing numerous nodding blossoms 2 inches to 3 inches in diameter, and of a soft golden-yellow. It is also biennial, requiring a rich deep soil and partial shade. A native of Nepaul.

Wallich's Giant Blue Poppy (M. Wallichi) is, perhaps, the finest of the Poppy-worts in cultivation. It is a truly handsome herbaceous biennial, remarkable inasmuch as it is one of the few, if not the only truly blue-flowered Poppy in cultivation at the present time. It grows from 4 feet to 7 feet in height, forming a perfect pyramid, extremely beautiful in full flower the drooping Poppy blooms, of a fine pale blue colour and perfect in shape, being always interesting. The flowers first open at the top or ends of the branches, continuing until those nearest the main stem have opened. Although as a rule not more than about twenty flowers are fully open at one time, there is something fascinating about M. Wallichi in full bloom that attracts those not even specially interested in plants. Its curious, deeply-cut leaves, the conspicuous long red bristle-like hairs, its general habit, etc., all tend to mark it out among its fellows for special attention. It was first discovered in Sikkim by Sir J. D. Hooker, and seeds sent home produced plants that bloomed in the Royal Gardens, Kew, in June, 1852. It forms a rosette of large leaves, 12 inches to 18 inches long, deeply cut, and so brittle that, although well able to stand our winters, they are apt to be damaged by snowfalls, heavy coverings, etc. The plants naturally like a moist situation in a rich deep peaty soil, and partially shaded from the midday sun. It is biennial, and to keep up a stock, seed should be sown annually, and this as soon as gathered. In strong plants and from the first flowers the seed is invariably good and sound. An interesting and conspicuous rock plant. The varieties fusco-purpurea and purpurea are not so desirable as the type, and when allowed to grow together, spoil the fine blue of the old form.

D.

Lilium auratum (*H. Stewart*). — Uncover the Lilium auratum bulbs at once, and stand them in a cold frame, and water. Keep shaded for a few days during warm sunshine, as the growths will be weak and unable to stand the light. Gradually harden off, and allow plenty of air during the daytime. Plant outdoors the beginning of May.

FINE-LEAVED PLANTS IN WINTER.

The effective winter grouping of hardy fine-foliaged plants is, perhaps, a phase of gardening to which far too little attention is paid at the present time. This fact is in all probability due to a scarcity of suitable material on the one hand, or possibly it may not be regarded as of sufficient moment, or, again, as interfering with existing arrangements. Perhaps one of the most valuable groups of hardy things for winter foliage effect may be found in the hardy and vigorous Megaseas, particularly such as M. cordifolia purpurea, ligulata, and others. Few hardy evergreen perennials are more effective in winter than are large beds filled with these plants. Frequently in winter their large characteristic leaves assume a reddish-purple or bronze-crimson hue that is very striking, the more so when seen in large groups. And then quite early follow their flowering-spikes. If it were desired to leave these Megaseas permanently, it would be quite easy to plant Narcissi, Galtonia candicans, Gladioli, Tigridias, or other such things among them for later display, the first-named being the least desirable, as flowering about the same time as the Megaseas themselves. For the margin, some Tufted Pansies, Hepaticas, or Erica carnea would be suitable. Then the Lenten Roses, if planted in sheltered places, would be very pleasing. For such things the present winter has been most favourable, the plants retaining their full vigour and freshness of leaf. In more severe weather and in exposed gardens the foliage of the Lenten Rose becomes disfigured by wind and frost, and for this reason it should be planted in warm sheltered places. Another plant, the foliage of which at times assumes a most vivid tone, is Shortia galacifolia, and it is, I believe, assisted if planted in rather poor soil or beside a stone, making the soil quite firm. This is a beautiful plant when its leaves are well coloured in autumn and winter, and though by no means common it is well worth special attention for its foliage alone. A very charming group, even if on a small scale, may be secured by planting large corms of Cyclamen neapolitanum, which produces quite a carpet of beautifully marbled leaves. By planting a few large corms on the rockwork where a good depth of fairly moist soil is assured, these things are very pleasing. For the same purpose the Epimediums are very useful, also some of the Heucheras and Gaultheria procumbens—a neat little shrub that is often exceedingly bright in winter-time, and very charming if seen in good condition. The plant prefers a peaty soil and moisture at the root, with full exposure.

Another excellent plant for the effective colouring of its leaves is Tellima grandiflora. Its great value for such work in winter-time seems but little known. In the character and general appearance of its leaves it is akin to some of the Heucheras or Tiarella cordifolia, the coloured foliage being of a fine purple-bronze. The great value of such a plant is always apparent at this season of the year.

E.

THE TIGER-FLOWERS.

For beautifying our flower beds and borders, few plants can compare with them. Like the Day Lily, the flowers that expand with the rising sun have, ere nightfall arrives, withered, a fact alone which would render them almost valueless were it not for the continued supplies of buds that are expanding day by day in bright, sunny weather. In the case of the Day Lily we have some external proof afforded us by the numerous flower-buds which are apparent on the spike, but with the Tigridias the thing is quite different, as the majority of the buds are concealed in the flower-sheath, and only emerge from it in rotation. In this respect they surprise not a few who have taken up their culture for the first time, and have beheld with amazement and wonder the gorgeous display of to-day, but with a look of dismay found it had all departed at eventide. But another fresh burst of flowers a couple of days hence for a similarly brief stay made their owners inquire into the cause, and thus quickly their peculiarities became known. The majority of the varieties are so easily grown that almost anyone may succeed with them, and, being so remarkably cheap, they may be planted in many spots in the garden and in the freest possible manner. In the shrubbery border, for instance, an excellent effect would result from the planting of some bold groups in the front of shrubs of sombre hue, such as many Laurels and the like. Such things would lose half their gloominess with the sumptuous flowers of the Tigridia in front of them, and become an attractive feature in the garden. Another capital place for them is in front of a bank of Rhododendrons, where they would prove equally ornamental. Beyond this, their use in the mixed border and the herbaceous beds might be extended, while in association with such things as Galtonia candicans or yellow or white Marguerites in the summer beds they would constitute a most striking, if not unique, arrangement, and with a little consideration there are numerous ways in which such things could be employed with advantage, imparting a vividness of colouring such as but few flowers can produce.

The soil they prefer is a deep and well enriched loam with a free drainage, and to ensure a good season of flowering they should be planted out at once. The most valuable species, on account of the rich display of its flowers, is T. Pavonia; this and the several varieties which have emanated from it give us year by year the bulk of the grandeur that this genus contains.

All the varieties of T. Pavonia attain a height of 2 feet or 2½ feet. The predominant colours are yellow, orange, and scarlet, while the most worthy are the type which has golden-orange and scarlet flowers—albiflora = grandiflora alba, in which the ground colour of the perianth is pure white, freely and conspicuously spotted with crimson. Conchiflora has bright yellow shell-like flowers, spotted with scarlet, and speciosa is also a yellow kind, spotted with red. Grandiflora is also a very handsome form; the predominant colour in this is rich scarlet, the cup spotted crimson on a yellow ground. Any or all of these can hardly fail to produce a magnificent display, such, indeed, as cannot be equalled by any other group. As pot plants they do not receive much attention, though I grew them myself as such fully sixteen years ago, and these when in flower in the conservatory always called forth bursts of admiration. Three or four large bulbs or roots are sufficient for an 8-inch pot, and when in flower interspersed with the usual occupants of the conservatory, they create quite a sensation by their unique blossoms. These plants increase quite easily by seeds and also from offsets; the former are freely produced in hot summers, and should not be sown till spring unless frame protection can be given them. The plants are best lifted in the autumn of each year, though in some districts they may be left in the soil all the winter; nothing, however, is gained thereby. Lifted when the foliage shows signs of ripening and stored away in a dry airy place till spring, Tigridias always give better results when replanted.

The kind illustrated is a pure white sport from the ordinary white-flowered form. The flowers are entirely devoid of the conspicuous spots so characteristic of the other varieties of T. Pavonia. This is the fourth new variety which has been added of quite recent years to this charming race, the beautiful T. Pavonia lilacea, aurea, and rosea being the others. E.

A pure-white Tiger-flower (Tigridia Pavonia alba immaculata).

INDOOR PLANTS.

THE REPOTTING OF HARD-WOODED PLANTS.

In reply to numerous querists respecting the time to repot and soil needed by our hard-wooded greenhouse plants, and which would necessitate far too long a reply for our correspondence columns, we herewith give a brief note upon this most important subject. No hard-and-fast rule can be laid down. The subjects are so numerous, vary to such a great extent, both as regards the most suitable time to repot, and soil wanted. First of all let us take the

Acacias, Indian Azaleas, Ericas, Epacrises, Boronias, and a few similar subjects. These all need a peaty compost. Select good fibrous peat, and break this into pieces by hand-picking, casting out the coarse fibre only. Pass the whole through a riddle or sieve with a ½-inch mesh. Do the same with a third of the best leaf-soil obtainable, and add a little very coarse sand; about a tenth part of the whole bulk will be a fair proportion. Drain the pots very carefully, and place the best of the coarse fibre in the bottom. Remove as much as possible of the old soil, both above and below, and pick out the old drainage. Do not afford a large shift, one half to an inch extra space being ample. A most important point is to see that the old ball of soil is moist throughout. Stand it in a pail of water for a few minutes, then drain for an hour or so before potting. Always add the new soil in small quantities at a time, and be very sure to make this firm with a label or other piece of wood. Unless firm, water will percolate so freely that the hard and old ball of roots will receive no moisture. Moreover, this section needs extra firm potting compared to others. Pot as soon as they are out of flower, and cut back Epacris, Ericas, and Boronias; the others may be shortened into shape if you choose, but if allowed to grow at will you will get larger plants with a corresponding increase of blossom.

Camellias, Ceanothuses, Aralias, Araucarias, Crotons, Daphnes, Euphorbias, Gardenias, Nerium (Oleander), Myrtle, Orange-trees, Plumbago, Solanum, and others of the same class need repotting at once. Use a compost of fibrous peat and fibrous loam with leaf-soil in equal proportions. Do not break this up too fine. If it will pass through an inch mesh it is quite fine enough, and much better than if riddled through one-half to three-quarters of an inch. Good drainage and firm potting are necessary here also, but not so firm as in the case of the Ericas, Indian Azaleas, and others included in our first group. The Mollis Azaleas, greenhouse Rhododendrons, and other hardwooded greenhouse shrubs enjoy the same treatment, and may be potted now.

Abutilons, Sparmannia africana, Bouvardias, Fuchsias, Genista fragrans, Habrothamnus, Libonias, and show and fancy Pelargoniums may have a similar compost, with the exception of halving the peat and replacing with thoroughly decayed stable-manure—that from a spent hot-bed of last season is very suitable. These plants may be pruned much or little at your own convenience, and according to the size you wish the future plant to attain.

How often to pot is a very difficult question to answer. So much depends upon the condition of your plant, and what you wish it to accomplish. If you do not want an Abutilon to grow very large, only repot every other spring, and prune back very hard. It is the same with the Genista, Orange-tree, Acacias, Myrtles, and others. As a rule, the amateur errs by going to extremes; one will think scarcely any repotting is necessary, while another makes a practice of repotting the whole of his greenhouse plants at least once and oftentimes twice a year. If a plant is in a small pot for its size, or seems failing for want of food, by all means turn it out and afford a little fresh soil, made up according to one of the three classes we have endeavoured to define. We must not lose sight of the fact that our pot-plants are confined and cannot obtain more than the food found in a very small portion of soil. Still, by giving the right compost, and assisting with liquid-manures when this is becoming partly exhausted, much labour of repotting can be dispensed with.

Improving Cinerarias.—In last week's Gardening I see that Mr. Hobday says of Cinerarias: "All we have to do when we find a plant with a good shaped flower, etc., is to set it on one side, and so go on selecting till a strain is worked up." I should be obliged if a little could be added to this information—namely, whether it means for (*a*) growing on the plant for next winter's flowering; (*b*) seed-gathering; or (*c*) taking off-sets? I have raised for the first time some Cinerarias from "Superb Single" seed, and have had some really splendid colours and good heads of bloom (though the stems are rather lanky). I have made a start for next year by taking one or two rooted off-shoots, but should like to know if this plan is of any use, and if it is what Mr. Hobday means? My greenhouse (a lean-to, 16 feet by 11 feet) ranges in temperature from 40 degs. to 55 degs. in the winter; south aspect. Temperature rose to 80 degs. a day or two ago from the sun. I should also like to know whether there is any way of insuring the blooms keeping fresh for a few days when cut, for I find that they droop within forty-eight, and sometimes twenty-four, hours—whether put into warm water with a little salt, or simply into plain, cold water, with the end of the stem burnt or not? Moreover, the whole plant droops in a couple of days when brought into a room with fire and gas, though the last one I brought into the same room three days ago looks better than even in the greenhouse, owing to the mild weather having temporarily caused me to stop fires in that room; the gas (incandescent), therefore, does not seem to be the harmful influence. Hardly any of the leaves of my Cinerarias are free from a brown edging, though the Cinerarias and Arums were the only plants to suffer in this way during last winter (with a Loughborough stove). Some of the Cinerarias curled up, quite irretrievably spoiling their appearance, but without any harm to the bloom. Ought one to leave the covering off the water-receiver or not? I have an idea that, the water in the pipes being necessarily rusty, it

may be hurtful to plant life. Is this so?—W. A. E., *Dulwich.*

*** There are two ways of working up a stock of Cinerarias from really good seedlings. The plants which possess superior flowers and habit of growth should be set on one side where it is light and airy, and the seeds permitted to ripen, gathering them before they fall; and in addition the off-sets can be taken off and grown on like young plants, treated just the same as seedlings. Cinerarias are not much use for cutting; the flowers are not lasting enough. But I am growing a variety of Cineraria which has small flowers, though they have plenty of substance, and they keep better than the usual varieties. The plants grow a yard high, and have a semi-shrubby habit. They are, I think, of Continental origin. A friend sent me a few plants in the autumn, and they are now in flower. They will do in a lower temperature than the common form, but are not so handsome. Possibly something may be done by hybridising. Gas and a dry atmosphere are bad for Cinerarias, but where the incandescent burners are used the damage is not so great. Probably the atmosphere of your house is too dry; at least, I think this is the cause of the leaves curling up and losing colour. It would be a good thing to run the water out of the boiler and refill once a year at least, using soft water. You had better cover up the water-receiver, though the evaporation is not likely to do much harm so long as ventilation can be given.—E. Hobday.

Odontoglossum crispum (*Venus*).—Your plant of Odontoglossum crispum may be repotted as soon as growth recommences. Avoid overpotting; the pots should be well drained, using as a compost peat and Sphagnum Moss mixed together in equal proportions. A cool, shady part of your greenhouse would suit it admirably. Keep the immediate surroundings of the plant moist at all times, ventilate freely when the weather is mild, and thoroughly water the plant at the root each time the compost becomes dry. Cœlogyne cristata, Sander's variety, may if necessary be repotted soon after the flowers fade. Fill the pot to about one-half of its depth with drainage, and use peat and Sphagnum Moss, and a few lumps of turfy loam for the roots to ramble into. After repotting very careful watering is necessary, and to prevent undue shrivelling of the pseudo-bulbs it is advisable to syringe the plant over occasionally whenever the weather is bright and sunny. Your warm greenhouse would be the most suitable place for it.

ANNUAL SUNFLOWERS.

The annual Sunflowers are far more useful than many suppose, but it is a mistake to grow very big, coarse, double kinds, which have none of the charm of the smaller forms. The Sunflowers are invaluable in sheltered places and for planting amongst tall shrubs, but the soil must be rich to support vigorous growth, as the Sunflower enjoys good food. The pale primrose

Annual Sunflowers.

variety with dark centre is very pleasing, so, too, are some of the quite small kinds. An annual of much interest is H. cucumerifolius; the flowers are not much larger than those of the Marguerite, yellow, and produced freely; the leaves are shining and apple green in colour.

Dendrobium Pierardi latifolium.—This fine variety is remarkable for the length and vigour of the stem-like pseudo-bulbs, the large flowers and broad foliage being in all these respects distinct from those of the typical D. Pierardi. It is not unusual to see growths from 4 feet to 5 feet in length wreathed in blossoms from end to end, and truly magnificent objects are such plants. It likes a long season of growth in the hottest house, where it must be afforded a light position, and after this a distinct season of rest.

Keeping insects away from greenhouse (*S. G. Curd*).—We do not think the material would injure your plants in any way, but it is not likely to have effect upon the worst plant pests—viz., mealy-bug and scale. You must use proper washing measures to kill these.

FLOWER GARDEN NOTES.

It is necessary to no longer delay making provision for getting in those annuals which do not require early sowing in a considerable amount of warmth, but which either want a little artificial heat to bring them up well, or being hardy enough to sow out-of-doors, are more acceptable if their season is a little anticipated by the indoor sowing, especially if an early display in the flower garden is important. The fact is also worth noting that several species are so susceptible to the attacks of slugs that a little protection in their earlier stages is worth consideration. Where sufficient house or pit accommodation exists they can be sown in boxes, otherwise a hot-bed may be prepared something after the style used for the early crops of Carrots and large enough to carry a two, three, or four-light box, as circumstances may require. The bed may be made of Oak, Beech, or Spanish Chestnut-leaves, with a little sprinkling of manure, and instructions given that in the building the materials should be made as solid and even as possible. About 4 inches of soil will be enough. Old potting-compost answers the purpose very well, with perhaps a little sandy loam or leaf-soil added to give additional firmness or lightness as may be required. The bottom inch may be rough, the centre medium, but the top inch is best passed through a fine sieve, as some of the seeds with which one has to deal are very small. The soil should be made sufficiently firm to get a nice even surface and the drills formed by gentle pressure with a round, smooth stick; more rapid germination will be ensured by damping the drills with a fine rose a couple of hours before sowing.

In the case of the majority of seeds ordinary covering-in will suffice, but very fine seed like that of Petunia, Lobelia, or Nicotiana is all the better for a little fine sand both in the drills before sowing and sprinkled over the seed. The frame should be kept close and slightly shaded when necessary until the seeds have germinated. It is not advisable to let them remain too long in the seed frame; sufficient of each variety may be pricked off into boxes or into another frame so soon as they can be handled and a fairly accurate idea of the numbers required may be formed if the plans for the summer planting of the flower garden have already been made. The articles on the best annuals that have already appeared render a recapitulation of varieties unnecessary; it may be taken for granted that a judicious selection of these beautiful flowers will go a long way towards keeping any ordinary sized flower garden bright and gay all through the summer and early autumn months. It may be noted that these things should be well looked after from seed-sowing to planting-time; it does not follow that because they are so-called common things a happy-go-lucky style may be adopted with them. Careful attention is necessary to secure good plants, and these are essential to obtain an early and a long-sustained display. When estimating as to the number of different varieties it is well to remember any clumps of early-flowering bulbous plants that may exist on borders. If the ground has to be clothed after the foliage of these has died away, such things as Phlox Drummondi and Nemesia will be found very acceptable. The bulbs will not be injured if they were planted deeply, and if the ground is poor a little artificial manure may be shaken on and lightly pricked in before the summer things are planted. R. E.

Dendrobium Leechianum.—Amongst the now numerous hybrid Dendrobiums there are none more charming than the group whose parentage is shared by D. nobile and D. aureum. Of this group there are three now becoming fairly well known—D. Ainsworthi, D. splendidissimum, and the one whose name heads this note. The three, having the same origin, have naturally a close resemblance to each other, and their beauty is so striking that one at least of them should be in every collection of tropical Orchids. D. Leechianum, being of latest origin, is the least common. The lip has a blotch of purple filling the centre, outside which comes a belt of pale yellow. It is fairly intermediate between the two parent species in general style, but in the vigour of its constitution it fortunately follows D. nobile, and has none of the delicacy of D. aureum.—B.

FERNS.

PROPAGATION OF FERNS.

Many lovers of Ferns are often anxious to increase their stock of favourite kinds, but do not quite know the best way of doing this. Now most of these plants may be easily increased by division or by spores (seeds). The best time of the year for dividing the plants is in March or April. Some of the species have creeping root-stems (caudex), and are increased by cutting them into pieces, each piece having a part of the root attached and some of the fronds. Other species are not so easy to propagate; their caudex is not creeping, forming single or compound crowns. These must be cut apart with a sharp knife, and some of the roots with a portion of the fronds should be attached to each piece. After this, pull them to pieces with the hand, and put these in small pots in light sandy peat-soil. When potted, place them in a cold-frame till they are rooted. Give but little water, just enough to settle the mould, and keep the frame shaded from the sun till they begin to root, when they may be moved in to some cool, shady place. Ferns, as before stated, may also be raised from spores collected from the underside of the fronds, and these should be gathered when they are ripe. The best plan is to secure the frond just as the spore (seed) cases are about to burst, and, placing it in a piece of paper, put it under slight pressure into some dry, warm place for a few days, by which time most of the spore-cases will have burst, and the spores will be ready for sowing. The spores of some species take a long time to germinate. Some of the arborescent kinds may be as long as twelve or eighteen months before any sign of vitality appears; others, such as the Gymnogrammas, some Adiantums and Aspleniums, etc., will come up freely in a week or two. In raising Ferns from spores under glass, great care must be taken as to the supply of water whilst they are in a very young state, for if more is given than can be taken up by the soil and little plants, it causes them to rot and produce fungoid growth, which soon smothers them all, whilst, on the other hand, if kept too dry, the young plants soon shrivel completely up. In sowing the spores, first fill the pots or pans three parts full of drainage, then place on this a thin layer of Moss, and fill up with fine light earth (sandy peat and loam), pressing it down a little with the hand. Give a gentle watering with a fine-rosed can, and then sow the spores on the top. After sowing place a bell-glass over the pots (a flat piece of glass will answer equally well), and keep them close until they begin to vegetate. A little air may then be given by tilting up the glass. As they begin to root they will require more air, and they must always be kept tolerably damp. It is desirable that the soil be baked in an oven before the spores are sown, as this destroys small worms, which are troublesome when the spores begin to vegetate. The process of baking will also destroy such seeds as may be in the earth, for if weeds come up they would speedily smother the young Ferns; this can be avoided, therefore, by baking the soil beforehand. As soon as the little plants are large enough to handle prick them out thinly into pots or pans of light soil, as they are very apt to damp off if allowed to crowd and overgrow each other in the seed-pots. When they begin to make strong fronds pot them off separately, always bearing in mind, on account of their tenderness, to keep them in rather a close atmosphere and well shaded until they are established. Ferns are also propagated readily from the little bulbils which many species form on the upper side of the fronds. I allude to such kinds as Woodwardia radicans and orientalis, Asplenium viviparum, and bulbiferum, Adiantum caudatum and lunulatum, Hemionitis palmata, Stenosemia aurita, etc. To cause these to root, the kinds which produce young ones from their points must have them pegged into the soil, and not removed from the parent plants until the young ones have made a few fresh fronds and roots. Those Ferns which form the young ones on the fronds require the pinnæ on which they are placed to be removed from the old plants, and to be pegged down on some suitable soil, when the bulbils will quickly root and speedily made good plants. When Ferns are grown in a warm, clean house the spores will vegetate naturally in different parts of it (walls, etc.), and will soon make good plants. After they are rooted, take them up and pot them if required. I have seen the walls of a vinery covered with seedling Ferns; the fronds which hang down look very beautiful, especially those of Adiantum Capillus-veneris (the true Maiden-hair Fern) and the Hart's-tongue (Scolopendrium vulgare). B.

BOUVARDIAS.

The first batch of cuttings should now be ready, but before taking them off they should be examined, and if there are any signs of green-fly the house should be fumigated. This must be done carefully, as few subjects are so easily damaged by smoke as Bouvardias when they are making young growth, and it is even more difficult to fumigate the cuttings, as the moisture in the propagating-pit is against it. In making Bouvardia-cuttings it is not necessary to cut them off close below a joint, as they will root from any part of the stem. Provided good, healthy cuttings can be had, there is little difficulty in rooting them. They require a good bottom-heat and a higher surface temperature than many subjects, especially for the early cuttings. It is essential to keep them from getting withered either during the process of making or after they are put in. If once they do get withered they are a long time making a start, and never seem to make such free-growing plants if they do start. It is easy to tell when they have made a start, and they should then be gradually exposed. I like to top the cuttings once before they are potted off, but they should stand in the cutting-pots until they have started again. I believe Bouvardias are often spoiled through not being treated liberally enough where they are required for cut bloom only. For early autumn flowering they may be planted out on a spent hot-bed, and when they get well rooted down they make strong growth and large trusses of bloom. Humboldti corymbiflora may be grown in pots, but should have plenty of root room and a good rich compost. All the Bouvardias should be grown fully exposed to the sun. They are naturally summer-flowering plants, but the flowering period may be regulated by stopping frequently. Although the same plants will keep up a succession of bloom for a considerable time, those required for late flowering should be stopped from time to time up to the end of September, and then if treated well they will go on flowering well through the winter. The best varieties have been enumerated frequently, and no recent additions have been made. Some time ago I saw a photograph of a white variety from Australia, said to be a sport or seedling from Priory Beauty, but I have not yet heard of plants having been introduced into this country. A. H.

Small culture (*Profit*). — Yes; under certain conditions, I believe poultry-keeping on a large scale, Bee-keeping, and Watercress-growing can be made the source of a good living. The conditions are that the manager shall have a real liking for his work, that he shall not be afraid of work nor shirk it in any way, that he shall have plenty of patience and powers of organisation, that he shall be within easy reach of good markets, and have the foresight to produce an article which will be appreciated by those who are called upon to buy it. A business of this kind cannot be worked up in a day; therefore it is absolutely essential that the owner shall be able to fall back upon some capital to live upon during the preparatory stage or obtain temporary employment until his own concern is sufficiently large to require all his time.—Doulting.

Drooping Star of Bethlehem from Drayton.—I send you a few blooms of Ornithogalum nutans; I think rather rare.—Mrs. Candwell, *Manor House, Drayton, Berks.* [*This charming flower is not very rare, but yet none too common. It is most at home in a rough, grassy place, as amongst other bulbs it increases too fast.*]

The National Amateur Gardeners' Association will visit Messrs. Barr and Sons' Daffodil Nursery, Surbiton, on Saturday, 10th April, leaving Waterloo (South Station) at 2 33 p.m. Return fare to members, 1s. 3d., on application to the hon. secretary, Leonard Brown, The Cottage, Seven Arches, Brentwood.

TRADE NOTES.

Mr. G. H. Richards requests us to announce that he has removed his offices from Old Shot Tower Wharf to 124, Southwark-street, London, S.E. (and that is now the address for all letters and orders in future), where he has taken a large warehouse for the manufacture and storage of the light goods connected with his Horticultural Sundries business, the warehouses at the Old Shot Tower Wharf (five minutes distant) being retained for the storage of peat, manures, and heavy goods generally.

GARDEN WORK.*

Conservatory.

Zonal Pelargoniums for winter flowering should be selected now from either autumn-struck cuttings or the earliest spring-struck. If intended to bloom in 5-inch pots, good early spring-struck stuff will succeed. F. V. Raspail is still a favourite for winter blooming. Turtle's Surprise is also very free. Among the singles, Henry Jacoby flowers very freely in winter, and it is a colour which is attractive. The advantage of having plants in 5-inch pots is they can be placed on shelves near the glass in a warm-house, and the plants flower much better in such a position if they get heat enough. To do Zonals well in winter they want a night temperature of not less than 55 degs. They do well in the same house with Tree Carnations; the Carnations on the stages in the body of the house, and the Zonals on the shelves, wherever a shelf can be fixed temporary or otherwise. Of course, such plants are not so useful in the conservatory if the house is large, though a group in a light position will last some time. I always think that to make a show of Zonals in the conservatory the plants should be set out in a good border. I was in a house a short time ago where the back wall was a mass of scarlet from top to bottom, planted with F. V. Raspail. Heliotropes do very well planted out in a light position and trained up a pillar or over an arch or on a wall. Plant a light and dark variety to obtain plenty of flowers in winter. Prune back early in August to get a new growth. Abutilons should be treated in the same way to have plenty of flower in winter from plants in good condition. The White Brugmansia is a very handsome thing in summer, either in pots, boxes, or planted in the border. A plant or two in tubs will be useful for planting or plunging in a sheltered place on the lawn in summer. Must have abundance of water during growth, but will be better kept rather dry in winter. Lilies of the longiflorum type will be attacked with flies now, and they creep down in the heart of the plants among the flower-buds, and if not destroyed will spoil many of the blossoms. We have had a very easy time with these and other things of similar attractiveness for flies since we adopted the vaporiser. We cannot do without fires just yet if we plant plenty of flowers, but less fire will do now. It will be better to let the fire go out every morning, and light again in the afternoon after thoroughly clearing out the furnace. Flues ought to be brushed out once a week if all the heat is to be taken out of the fuel. Let the plants be watered freely now, especially those in flower, and those planted out must be seen to often.

Stove.

Young shoots of Poinsettias 2 inches or so long with a heel of old wood at the base will strike now, or when the cuttings can be got in a brisk bottom-heat, kept close. These are brilliant things in winter, and no one has too many of them, as by striking at different times through the spring a succession will be obtained. After they are rooted grow them in a light position to keep the plants dwarf and robust. Plants raised in this way and ripened out in a pit in summer will retain all their foliage and produce large heads of scarlet bracts. A few plants of the white variety ought to be grown for the sake of contrast. The Sonerilas are charming things for the small stove. They really ought to be grown in a glass case. The foliage is beautifully netted and variegated, and they are charming miniature ornamental plants for those whose taste runs in that direction. When I first grew these there were only two or three varieties; now there are more than a dozen, and a continual increase is going on. The great drawback is they want rather a high temperature, freely charged with moisture, to do them well, and for this reason they are frequently grown in a case which can be easily shaded.

Ferns under Glass.

A very useful assortment of Adiantums might include besides A. cuneatum, which everybody grows, A. c elegans, A. concinnum latum, A. Farleyense, A. gracillimum, A. Williamsi (Golden Maiden-hair), A. Sancta Catherina, A. decora. Young plants may be purchased now, and if potted on during summer will make good decorative stuff by the autumn. The Gold and Silver Ferns (Gymnogrammas) are also very beautiful, but must have a temperature of not less than 60 degs. at night. G. Calomelanos, G. chrysophylla Laucheana, G. tartarea, G. sulphurea, and G. Wettenhalliana are good. The last-named is a crested Silver Fern, very pretty, but requires good culture. The Gold Ferns require rather a lighter compost and more sand than the Maiden-hair, which may have at least half loam if the loam is of the best quality.

Vineries.

Do not let the Grapes get too large before thinning, and be careful not to rub or handle the berries. A sweaty hand will be very likely to bring on rust. The bunches may be manipulated very easily with a bit of smooth stick in the left hand, whilst the right uses the scissors. Better err on the side of doing too little than too much, as an error of omission can be rectified later; but for summer cutting Grapes should be full in the bunch. Look after sub-laterals, and allow no progress beyond one leaf. See that the inside borders are moist enough for healthy root-action; if this is not done the root will wander away and get into bad stuff.

Early Melons.

Keep the growth thin and properly trained out. Do not overcrop and endeavour to get all the crop set at the same time. If one or two fruits get much of a lead the others will not swell. Do not shade, but ventilate to keep down temperature on bright days. This will insure robust foliage that the red-spider will not care for. Top-dress with sound, adhesive loam, and press firm. Give liquid-manure after the crop is set, but do not pour much water on the main stem. The feeding-roots are not there, and it may produce canker.

Window Gardening.

The window should be bright now with Genistas, Azaleas, Deutzias, Lily of the Valley, Spiræas (the last-named should stand in water), Cactuses, and Pelargoniums. Shabby plants should either be thrown away or placed out in frame. Repot Palms, Ferns, and Aspidistras.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Outdoor Garden.

The time is rapidly approaching when the beds will require to be filled with the summer bedders, and provision should be made for doing the work well. A number of beds poorly furnished is always disappointing, but one bed well done is pleasant to look upon if rightly placed. The geometric garden is not finding much favour among people of taste in laying out new places, but a bed or two of bright flowers is effective. Among the plants which we should mix are Heliotropes (the dark blue variety is charming), White Stocks of a good strain, White Asters, Chinese Pinks, and a good strain of Phlox Drummondi are always useful, and have the merit of being cheap. Blue flowers are not plentiful. The old Salvia patens is well known, but no one seems to have enough of it to make a really good show. The best dwarf blue-flowered annual is Phacelia campanularia, and it is fairly lasting if sown thin and thinned to 6 inches, and mulched as soon as the thinning is done with a little very old manure rubbed through a ½-inch sieve. This is an excellent plan on dry soils. Tufted Pansies appreciate it. More is being done with bulbs on Grass. The other day I saw a small lawn gay with different coloured Crocuses; they had been dibbled into the Grass to form a sort of plan, fitting together, and were, in fact, a miniature flower garden in different coloured groups, and looked rather pretty, and would not last long enough to become wearisome.

Fruit Garden.

Give attention to recently-grafted fruit-trees to stop any cracks in the clay. I notice of late years more is being done with lime-wash, especially in old orchards. This may not make the fruits any larger, but it will aid in cleansing the Moss from the large branches and get rid of the insects. There is going to be a lot of blossom here in the eastern counties, and provision should be made for nourishing the trees with top-dressings. Peaches on wall are often very dry through the spring and early summer, and whenever the tree is very dry the check will cause the green and black-fly to increase more rapidly. How these wretched insects discover the weakly tree is simply marvellous; instinct, I suppose, teaches them where to seek their food; but insecticides are now so plentiful that no courageous person not a procrastinator need be alarmed at seeing a few insects on the trees if he is prepared to deal promptly with them. I have already said Tobacco-powder is the best remedy for green and black-flies. Tie down young wood in early Peach-house. Very often the trees in the early house are planted too thickly, and they crowd each other, and debility sets in from the constant pinching and cutting back. No trees can be long healthy when it is always necessary to be cutting back to keep within bounds. The best late Grape for a gentleman's table is Lady Downe's. Alicante and Gros Colman when well grown are handsome Grapes, but they lack flavour, and no one who knows what a good Grape is would eat them so long as a Hamburgh or Muscat remained. This is a good time to plant young Vines in a new or old house. The border can be made gradually with advantage. The drainage must be right to insure the water passing away freely. With a free drainage the feeding may be liberal in the way of rich top-dressings and liquid-manure.

Vegetable Garden.

Fetch up all arrears of sowing and planting, but the land has worked so well lately the work ought to be in a forward state. Sow Basil and Knotted or Sweet Marjoram in a warm-house. These are always in demand, and it is good policy to sow a few pots in January for picking green through the spring. The sowing made now will be planted out in a warm border in May after being well hardened. New Zealand Spinach may be sown now in small pots, about three seeds in a pot. The seeds are rather slow of germination unless started in heat. Cardoons may be started in the same way for the first crop; another sowing for succession may be made in the trenches in about a month's time. Cardoons are only grown in large gardens where first-class cookery is understood. Sow Vegetable Marrows; they will be in time enough without much heat, and should be thoroughly hardened off before being planted, and should be sheltered for a time at night with hand-lights or inverted flower-pots. Plant Tomatoes under glass. The plants ought to be safe now in cold house. In the early house the plants will now be setting the first trusses, or the first trusses may be set and swelling. Aim at keeping a buoyant atmosphere by judicious firing and ventilation. We never use the syringe overhead. If the plants are kept strong and sturdy by ventilation they are better without syringing. Remove side-shoots. Do not overwater, nor yet starve for want of it, or the blossoms will drop. E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from April 10th to April 17th.

Asparagus ought to be plentiful now. We like to let the grass get well above the soil before cutting, and then it is all eatable; but I suppose the epicure likes the bleached grass, though there may be less of it. All should be cut, both large and small, till cutting ceases; that is our system, and the why or wherefore of this I need not discuss now. Planted a plot of ground with Asparagus in rows 3 feet apart and 15 inches between the roots in the rows. It would pay to give more space, looking to the future, but the present is pressing, and we want quantity speedily. Each row has been mulched with the manure from old Mushroom-beds broken up fine. We like old Mushroom-beds for mulching; it lies close and effectually checks evaporation. Divided and planted several masses of Viola cornuta along the front of a wide border. We like this old Viola used in this way. Later on a few tricolor Pelargoniums will be dropped in the open places. With us Violas of the cornuta type go on flowering. All the beds are dressed with cow-manure, the latter being well dug in. In a new shrubbery border just planted we have worked along the front groups of Lavender, Berberis stenophylla, B. Aquifolium, Tamarix, Rosemary, Skimmia ovata, Pernettya mucronata speciosa, Hypericum calycinum, and Golden Hollies, and a bank in another part of the grounds has been furnished with a bold group of the double-blossomed Gorse. Another feature will be the Dwarf Broom (Andreana). Of course, everything now has been rather heavily mulched with short manure, and water will be given freely if it comes dry through the spring or till growth has been fairly started. Made a second sowing of the most useful kinds of winter Greens, such as Broccoli, Brussels Sprouts, Kale, Savoys, etc. Pricked out more Celery. For the main crop we place a layer of manure on a hard bottom; on the manure 3 inches of good soil. Press down with a board, and dibble in the plants 5 inches or so apart. Keep well supplied with water. They will cut out with the trowel with abundance of roots, and hardly feel the moving. Moved bedding plants to frames to harden and made room in houses for other things. Shall plant out Pentstemons in masses shortly; they are pretty in groups in the borders. It is best to strike cuttings every year. Old plants frequently die during severe winters. A further sowing of hardy annuals, including more Sweet Peas and Mignonette, has been made. Planted out a lot of Narcissus and other bulbs which had been forced. We are filling up holes and corners in this way.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

308—**Treatment of Arum crinitum and Calla alba maculata.**—Please say what treatment the above require from time of potting dry tubers onwards? —A. E. Ball.

309—**Daffodils not flowering.**—I shall be glad to know why my bulbs—Narcissus and Daffodils, etc.—do not bloom? Some of the bulbs have been undisturbed for years, some fresh planted, with no results. The garden is fairly sunny and well manured.—A. F. B.

310—**Drying wild flowers.**—Will any readers of Gardening kindly tell me how to dry and preserve wild flowers, as I am anxious to make a collection of them? Could I arrange them (gummed) in a scrap-book? Full particulars will be most gratefully received.—Archie Ley.

311—**Daffodils Tenby and pallidus præcox not flourishing.**—I have been growing these for several years, but find that the stock diminishes instead of increasing. They have been left in the ground from year to year, with occasional lifting. Can any of your readers who have grown these varieties advise me as to any particular treatment which they require? The double yellow and the poeticus both flourish. Soil is rather heavy, and during the winter months very damp. Perhaps the writer of an article in this week's issue (April 3rd) who signs himself "E." can assist me.—C., *East Yorks.*

312—**Succession of bloom in border.**—Could some of your correspondents kindly help me to arrange a succession of bloom for a warm sloping south border, which is near to the road, and which requires to be of a formal and trim character? At present it is edged with Golden Feather Pyrethrum; above that clumps of Blue, White, and Yellow Crocus are just over; above again are clumps of Red, White, and Blue Hyacinths in full bloom; and at the back, against the wall, a row of double Van Thol Tulips. All these will be over end of April. What can I plant (or ought previously to have had planted) in order to give a further succession of bloom until the time for Asters, Zinnias, etc.? One year I tried Forget-me-not, but it came on too quick in so sheltered a position, and was over with the bulbs.—L. G. G.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

313—**Sowing Grass-seed** *(Amateur).*—You will require 2 lb. of seed to sow the ground with, and this will be quite sufficient.

314—**Purchasing sand** *(Miss E. Fagge).*—You should be able to get good sand from your local florist at 2s. to 2s. 6d. per bushel.

315—**Cannas** *(Miss E. Fagge).*—Your partially shaded house would suit the Cannas. Be sure to give good soil and plenty of water while in growth.

316—**Air-plant** *(A. Sanders).*—If you would kindly send us a specimen of your so-called Air-plant, we, no doubt, could then give you full directions as to its cultural requirements.

317—**Peculiar Cyclamen flower** *(C. G.)*—This is not very unusual. The flower has apparently tried to be double, but has not succeeded. It is a curiosity, but will not be permanent.

318—**Gardeners' hours** *(J. M.).*—Six a.m. to 5 30 or 6 p.m. are the usual hours, but the custom in many places now is to give one half-day a week off. We do not know what the custom is in Kent.

319—**Vine-shoots diseased** *(G. R.).*—The Vine-shoots sent are a mass of mildew. Well dust over the affected parts with dry sulphur, and keep house warmer and drier, and avoid cold draughts.

320—**Garden labels** *(An Old Subscriber).*—The labels are excellent. We have them also very reasonably made by Mr. J. Smith, Label Factory, Stratford-on-Avon. They are made for all kinds of plants and trees.

321—**Clematis graveolens** *(S. Helens).*—A very hardy and free-growing kind, suitable for the position mentioned if you enrich the soil and give water in dry summers. The flowers are yellow in colour.

322—**Use of charcoal-dust** *(A. Smith).*—Charcoal is not a food, but a purifier. You can use it freely with Cucumber soil, say 1 peck to 2 bushels of soil. It is also excellent for pot-plants, as it lightens and purifies.

323—**Stopping Orange-tree** *(Miss E. Fagge)*—No seedling Orange-tree will produce such good fruit and blossom as a grafted plant. You will certainly get a more bushy plant by removing the top of the leading shoot.

324—**Blighted Potatoes** *(East Kent).*—Both lime and soot would do good; also such aids as fresh soil or other additions. Your land is sick of Potatoes. Can you not grow a green crop and thus give soil rest for a time?

325—**Growing Tomatoes against wall** *(Mr. Denny).*—Tomatoes in pots would do well, and best grown as single plants or cordons close to wall. Duke of York, Ham Green, or Sutton's Perfection are all good varieties.

326—**Stephanotis unsatisfactory** *(A. E. Cottrell).*—A too moist soil, also one underfed, would cause brown leaves. Please send us a few leaves, and say what temperature you keep up, and whether you have used a strong wash at any time.

327—**Caterpillar-infested ground** *(Harricus).*—You must carefully clear away all decayed matter as the crops are consumed. Dress your land freely with soot or lime, and a solution of ammonia will clear off the caterpillars, also the earwigs.

328—**Plants for back wall of vinery** *(Mrs. L.).*—We fear you will not succeed in growing anything in such a position. Even if it thrived at first, the dense shade of Vines and other Creepers would prevent suitable growth being made for the next season's display.

329—**Plants too tall in greenhouse** *(Mungo, Lewisham).*—There are no easier plants to grow than Zonal Pelargoniums, and if you fail with these we fear you will not succeed with other subjects. Pinch out the tips a few times, and grow as close to the glass as possible.

330—**Unsatisfactory Daffodils** *(Narcissus, Chepstow).*—The buds look as if the frosts had caught them, or their brown withered-up look may be due to the bulbs having got thoroughly "sick" of the soil, or the latter is too poor and dry. Any of these conditions would mean failure.

331—**Treatment of Eucalyptus** *(Miss E. Fagge).*—You would not succeed in rooting the Eucalyptus, but it can be so readily and quickly raised by seed that this is no drawback to their increase. Heading it will cause lateral growths to grow stronger, but the shape of the plant will be spoilt.

332—**Hedges for garden** *(Airdrie).*—The Common Holly, mixed with Quick, makes a splendid hedge, but does not grow so fast as the Privet, which, however, we dislike; it is a hungry rooter, and has a depressing look. The English Yew forms a very beautiful hedge; so also does the common Box.

333—**Stable-manure for top-dressing Vine** *(Young Gardener).*—Stable-manure applied from April to September should be well decayed, but less so when employed as a mulch or protector from November to April. For summer we prefer other fertilisers less heavy, such as bone-meal, nitrate of soda, or other fertilisers.

334—**Are Azalea mollis var. hardy?** *(G. Loverock).*—They are all hardy, but will flower well under cool greenhouse treatment. The Azalea and Rhododendron should bloom during May, and the Hydrangea in June next. Continental firms are splendid packers, and consignments seldom come to harm during transit.

335—**Age of Apple Cellini** *(Harricus).*—So much depends what the culture has been in determining the age of young fruit-trees. A healthy tree of the size named should be young. It may only last year have been grafted on a stem of the size named. You give no idea as spread of branches, so we are unable to help you.

336—**Manure for plants** *(S. G. Curd).*—Stagnant soot-water will not injure the Zonal Pelargoniums, but it sometimes gives a most offensive smell. Freshly-made soot-water, also guano dissolved at the rate of 1 oz. to the gallon of water, and used twice a week, is one of the least offensive and the most reliable manures for your purpose.

337—**Ashes for heavy soil** *(H. C. W.)*—Ashes from gas-works will not improve your soil. Gas-lime, if finely broken, is a capital thing to use on ground badly infested with grubs. It should be sown broadcast, and later on dug into the soil. The Variegated Hop is of quick growth, and would soon cover a large space. It is also very handsome.

338—**Tomatoes unsatisfactory** *(Gardner, Birkdale).*—Your Tomato-plants have had a check in some way. You give us no data as to culture, temperature, and we fancy the plants are mildewed, that is, brought on by cold draughts, also excess of moisture, and the plants are very weak. You may water with ammonia when fruits are set, not before.

339—**Best Ivy-leaved Geraniums** *(Archie).*—A strong turfy loam with a little thoroughly decayed manure, or else a tablespoonful of bone-meal to each gallon of soil, will grow the Ivy-leaved Pelargoniums. Three good singles are Victoria, Mrs. Cannell, and Masterpiece. Three doubles can be found in Candeur, Souvenir de Charles Turner, and Beauty of Castle Hill. Capitatum, rose scented; Tomentosum, peppermint scented; Prince of Orange, orange-scented; Crispum, citron-scented; Denticulatum majus, and Rollison's Unique are good scented varieties.

340—**Magnolia, etc.** *(Magnolia)*—The plant you mean is Gesnera. It is a very charming flower and well worth growing. It requires a stove treatment, and requires rest the same as Gloxinias. It is procurable from any leading nursery, but we do not make mention individually. Magnolia grandiflora will succeed on a south wall in your locality.

341—**Getting rid of worms in pots** *(Eureka)*.—We recommend soot-water for destroying worms in pots. But for Arum Lilies or hard-wooded plants give weak slack-lime water. Before using mix ½ lb. of lime in a gallon of water, and allow the sediment to settle. Afterwards draw the liquid carefully off, and use a wineglassful in a gallon of clear water.

342—**Soot as a manure** *(H. C. W.)*.—Soot can be used in any form. It is generally applied in a liquid form—that is, a bag of soot is placed in a tub of water, and in a day or two the soot-water is given to the roots of the plants. It is used chiefly for adding colour to the foliage. It can also be spread over the ground in a dry state in much the same way as dry manure.

343—**Treatment of hedge** *(Claremont)*.—Trim off the straggling growths and cut back the leaders to the level of the other plants, by which means it will be encouraged to break out lower down, and thus make a better bottom than would be the case if allowed to grow at will. In summer the whole hedge may be cut in the usual way. It would be foolish to do so now.

344—**Currant-buds unhealthy** *(J. S.)*.—Your Currant-trees are attacked by the fly or mite; it is not the soil that is too rich. Your only remedy is to cut the bushes down to the soil and get new growth; but even then they may get a second attack. The best remedy is to burn the trees and get others from a clean source. Plant away from old trees as far as possible.

345—**Propagating Azalea mollis** *(H. W.)*.—This can be propagated by seeds sown in beds and covered with cold-frames or handlights. Germination is greatly assisted if the seeds are sown in a gentle heat. It is not at all particular as regards soil, so long as the drainage is good; in fact, wherever the Rhododendron thrives, Azalea mollis will do well. It can also be increased by layering.

346—**Heating failing in greenhouse** *(J. N.)*.—You have not sufficient piping compared with the size of the boiler. Six feet of piping is not sufficient, and it does not allow the boiler a chance for you to be able to drive it without overheating. We advise you to add more piping, and carry it round the house if possible. You will be able to regulate the temperature, and will not have to drive the fire so much.

347—**Destroying wireworms** *(An Amateur)*.—To destroy wireworms you must dress your land freely when not cropped—say, in the autumn. Gas-lime is best, but with pot plants you cannot use this; so water with a strong solution of lime-water made from fresh lime. For vegetables, dress land with gas-lime a little before cropping, but freely in autumn. This will help your land. Soot alone is useless.

348—**Treatment of Ficus elastica** *(Haricus)*.—An India-rubber-plant (Ficus elastica) 30 inches in height will require a 7-inch pot. When first potted, very little water is necessary, but when well rooted a large amount of water is required. After fresh potting, place in a warm greenhouse and syringe twice a day to prevent the leaves from turning yellow and dropping off. Also select a shaded position.

349—**Blinds in plant-house** *(Inquirer)*.—You are placed in difficult circumstances as regards the ventilator. We advise you to have one blind instead of two, and cut a width out to the size of the ventilator. When the blind is required to be down, let the ventilator down first to enable the roller to run down without breaking the glass. A piece of tiffany could be tacked on to the ventilator, or if the blind material is not very thick it could be used as well.

350—**Treatment of Vines in pots showing bunches** *(Subscriber)*.—You should only allow one growth from each joint—not all the buds. Do not feed until fruit is set. You may top-dress more, as advised, with loam and artificial manure. If you dressed at start wait till berries are set before doing so; but if you give food in way of liquids, another dressing will not be needed. Give liquid-manure freely when fruits are set—not earlier. Your temperatures are good.

351—**Tomato-flowers dropping off** *(A Reader of Gardening)*.—We expect you keep your plants too close, do not give enough air, and probably the house is too moist. Try more air, and open ventilators freely in bright weather; also leave a little air on at night from June to September. Do you feed before the bloom sets? If so, that would cause dropping. Secure ample fruits before you give food, and do not omit to air freely; in fact, if you get a sturdy growth you will obtain fruits in quantity.

352—**Daffodils failing** *(W. Snowden)*.—Your Daffodil bulbs have become exhausted. When the bulbs have dried off, we advise you to lift them and sort them over. Select all the best and largest bulbs and lay by until October, when you can plant them again. To secure a good display of Daffodils every year it is advisable to lift them every second season, as the bulbs become exhausted and run to leaf. Daffodils make a number of offsets each year which take the strength and vigour from the parent bulb.

353—**The Persimmon** *(Subscriber)*.—This is the Diospyros Kaki, and has much the appearance of a Tomato, more especially a round, smooth variety like Acme. The flesh resembles that of an Apricot, the colour also being similar. The fruit when quite ripe is delicious, and we wonder it is not more often grown for dessert in October, a time when good fruit is limited in quantity. The flower is richest when the fruit is just becoming overripe; after that it has the taste of a Medlar. We believe the Japanese have a way of drying the fruits so that they retain their flavour in that state, being similar to dried Figs, but with a tougher flesh. Mr. Wilson used to grow this well in pots in his orchard-house at Heatherbank, Weybridge, and the trees every year produced fine crops of fruit. Concerning the fruit, Mr. Wilson writes as follows: "The plants are grown in an orchard-house and treated like the ordinary inmates. The fruit should be gathered when it has become rich red, but not eaten then, as it is astringent. Keep it in the fruit-room for some time, when it will become soft and transparent and have a sweet, though not very marked taste. The fruit is very handsome and an ornament to the dinner-table." Those who have an orchard-house would do well to grow a plant or two, as the fruit would be welcome during winter.

354—**Planting Ferns** *(F. D.)*.—You need not fear because you have not used peat. This is by no means so necessary as is generally imagined. We hope you have not manured heavily. Ferns do not need this when a free root-run is provided. Rather coarse pieces of turfy loam would have been the best addition. If you have a few varieties needing a lighter or a wetter soil, lift them and plant again after making some half a bushel or so of the surrounding compost more suitable. A dressing of peat would do little if any good.

355—**Packing Strawberries** *(W. A. S.)*.—You would do well to pack Peaches in shallow boxes, one layer in each. Place tissue paper round each fruit; then use dry Moss or wood shavings. Pack very firmly. Pack Plums in shallow boxes if dessert kinds; place fruit quite close, and fill in between with paper. Strawberries are more difficult to deal with. These are packed in ½ lb. or 1 lb. punnets, then placed in trays or boxes. Forced fruits are packed in leaves—a small leaf to each fruit. Try any large glass warehouse or big grocer for jars.

356—**Best Single Zonal Pelargoniums** *(J. Murphy)*.—Chelsea Gem, Mary Anderson, Lady Rosebery, Miss Ellen Terry, Improved Raspail, Golden Rain, Ville de Poitiers, Colossus, H. M. Stanley, Snowdrop, and Lady Emily Peel are good doubles. Twelve good singles are Kitty, Mr. Owen Thomas, Wintie, W. P. Wright, Shirley Hibberd, Cannell's Favourite, Winkfield Gem, Sunbeam, Richard Dean, Mrs. R. Cannell, Lady R. Churchill, and Lady Carlisle. The Czar is a grand winter Violet, but you would only flower it in October and again in February to April.

357—**Rose-shoots dying, etc.** *(J. E. B.)*.—1, Your piece of Rose-growth was quite dried up when it reached us. Why pack such in dry cotton-wool? It absorbs the whole of the moisture. We think you are affected by the larvæ of the stem-boring saw-fly. Please send us another piece or two, and pack in damp paper this time. 2, The carbolic deodoriser will not improve the manure. It throws off the valuable ammonias too much to leave much manurial value behind. 3, Send us a piece of the Heliotrope, and say if you have fumigated or not; also if allowed to get very cold, or some strong insecticide has been used to check insects.

358—**Shrubs and flowers for sunless garden** *(Ignoramus)*.—Your garden, in addition to being small, is badly situated, but with a judicious selection of plants and shrubs it ought to afford you a great deal of pleasure. Amongst hardy shrubs for winter and early spring flowering Jasminum nudiflorum, Lonicera Standishi, and the deciduous Daphnes should find a place. These would be followed by Ribes (Flowering Currants), Cydonia japonica, Kerria japonica fl.-pl., Spiræas, Lilacs, Philadelphus (Mock Orange), Roses, etc. Of hardy herbaceous plants Aubrietias, Campanulas, Phloxes, Pentstemons, Irises, Polyanthuses, Saponarias, Snowdrops, and Narcissus.

359—**Sowing Anemones, Aconites, etc.** *(Flora)*.—Make up a slightly raised bed of rich and light loam for your Anemones. Rub the seed briskly between some coarse sand to separate it, and then sow very shallow and thin, but choose a time when the soil works well, and do not sow until May. They are one of the easiest plants to raise, and would flower this autumn. See reply to 176, page 40 of present volume. We would sow the Delphinium nudicaule in a shallow box or pan under cover, transplanting them in July. Sow the Tufted Pansies outside. Our issues for March 6 and 13 contain full instructions respecting these popular flowers.

360—**Pruning Nut-bushes** *(Flora)*.—Now is a good time to prune Nuts. If done too early you sacrifice a large number of male catkins, and these are more forward than the female blossoms. Cut away what you can of the wood which bore fruit last season, and shorten back the coarser growth. It is the medium sized laterals which bear fruit. Most of the top growth of last year can be cut away as soon as the female blossoms are set; this is the usual practice in Kent, after the catkins have served their allotted purpose. In some seasons they are so far in advance of the female blossom that pruning before the middle of April means the entire absence of pollen at the critical time.

361—**Treatment of lawn** *(Green Lawn)*.—We are afraid you have driven matters a little too far, as in your part of the country time is getting on. Your best plan is to get some finely-powdered soil, lay it on the bare patches, pat it with a spade to make it firm. Then upon this sow thickly some good lawn seeds, to be obtained from some first-class seedsman. Let him know the circumstances of the case, and ask him for some varieties which will grow rapidly. After the seeds are sown, roll daily whenever the soil does not adhere to the roller. This operation exerts a wonderful effect upon newly-sown seeds. With regard to a top-dressing, all that you can do is to apply a little nitrate of soda or guano, mixed with fine soil to ensure a more equal distribution. One cwt. of nitrate of soda, or 3 cwt. of guano, would be sufficient for an imperial acre.

362—**Flowering "Geraniums" in winter** *(Miss Tomlinson)*.—To obtain Pelargoniums and Zonal Pelargoniums in flower during the winter months cuttings should be taken in March. Insert singly in small 60 pots in equal proportions of sandy loam and leaf-soil, and stand in a warm greenhouse in a shady position. When the cuttings are well rooted and commence to make a little growth, pot on into a 5-inch pot, and stand in a cool frame for their summer quarters. Keep all long shoots pinched back to form a plant of good habit, and pinch the flower-buds out as they appear. The end of July another shift may be afforded, a 6-inch or 7-inch pot being a useful size, or judge according to the size of the plants. Place back into the frame, and continue pinching for a month or six weeks. For the final potting loam and leaf-soil in equal proportions, with the addition of a little well-rotted stable manure, are essential, and a small portion of sharp sand. At the beginning of September discontinue pinching, and allow a little stimulant twice a week. We recommend cow-manure. As soon as the plants begin to show flower, stand in a greenhouse for their winter quarters. Care should be taken during the winter months with the watering, as dampness and rot are often caused by over-moisture. Unfortunately you do not state what are the contents of your greenhouse. The temperature depends entirely on the plants which are grown. The temperatures vary from 45 degs. to 50 degs., or 50 degs. to 55 degs. The correct time to water is in the early morning all the year through. Maiden-hair Ferns do not require to be syringed at all.

363—**Propagating Kalmia latifolia** *(H. W.)*.—Kalmia latifolia is propagated principally in three ways—viz., cuttings, layers, and seeds. We will first of all consider propagation by cuttings. When suitable wood is obtained, roots are emitted freely. The best wood for the purpose is that of the current year's growth, and the best time for the operation being about August, when the wood is fairly firm. A bed of well-drained sandy soil covered with a handlight and protected from the sun answers well. Another method which we have found to answer well is to place the cuttings in a close case, the temperature ranging from 60 degs. to 70 degs. To meet with anything like respectable success with layering, wood of not more than three or four years' growth should be layered, as the difficulty in inducing the very old wood to throw out roots is very great. Treat in exactly the same way as though Carnations were being layered. Seeds germinate freely. The best soil for the germination of Kalmia seed is composed of three parts peat, one part loam, to which is added a fair quantity of sharp silver-sand. The seeds being small, care must be taken not to cover too deeply. Flat pans or boxes may be used, but it is very important that they be well drained. The pans should be filled with soil up to an inch or so of the top, the seed then sown, after which a little soil should be passed through a very fine sieve. They should then be stood in a temperature of about 60 degs.

364—**Treatment of seedling Peaches.**—I have some Peach-trees raised from stones. They are 4 feet high and very healthy. Would they be likely to fruit without grafting? When is the proper time for grafting, and how is it done?—Amateur.

*** *A very few Peaches come true from stones. You had better bud the trees in July or August. We recently gave an article on budding, and cannot now spare space. You would do well to get the budding done by someone with a knowledge of the subject.*

365—**Horse-hoof-parings as manure.**—Can you tell me whether the parings of horses' hoofs from a blacksmith's shop are available as manure for Roses or vegetables?—A. W.

*** *The parings are good for pot plants with soil, but are not specially good for Roses; they are better for Vines or fruit-trees.*

366—**Mulching Vine-border.**—I have removed the loose litter off my Vine-border. Would you advise me to give a good mulch of pig and horse-manure taken out of a stye? The Vines have broken very strongly.—Basil.

*** *No, we should not advise mulching with the manure. Wait until the fruits have set, then only give a light mulch of the manure, but not in a fresh state. Place in a heap now for the mulch later on.*

367—**Vines bleeding.**—I shall be glad to learn if you know of any easy and effective method of stopping the bleeding of Vines.—R. Wheelock.

*** *If the Vines are much advanced in growth, sear the tops or part which bleeds with a red-hot iron, then place styptic or painter's knotting immediately over the portion burnt.*

368—**Treatment of Narcissi.**—I have some fine clumps of Narcissus in a small bed. They have finished flowering, and I wish to take them up, divide them, and replant in the same bed. How must I keep them, and when must they be replanted? I should be greatly obliged by a detailed answer, as I know nothing at all about the treatment of bulbs. Flower enclosed.—Cornwall.

*** *Let the Narcissi die down a little before lifting; then raise them carefully and store in dry sand until the end of next August. Plant five or six in a clump, and take this opportunity to move your soil deeply, also to add a little manure if poor. An autumn mulching of stable-manure is excellent. Your bulbs are one of the Polyanthus Narcissus.*

369—**Chinese Sacred Lily.**—A few weeks ago I placed in a bowl amongst marble chippings and water a Chinese Sacred Lily bulb. Would you, please, in your next issue let me know the proper treatment of the bulb up to and after flowering?—Banbury.

*** *The bulb is useless after flowering. Its treatment until flowering-time should consist in keeping the bowl filled up with water, and placing it in a cool temperature, not a very warm room. It just wants to be kept safe from frost. A pinch of guano in the bowl when the flower-spikes appear is useful.*

370—**Destroying Elms.**—I have two Elm-tree growing on one side of my garden. Some of the rootlets are running through the garden. I am going to cut the trees down, and can I, by boring in the trees after cut down, put something in to kill the parent roots? Could you tell me what to put in? I must tell you the trees are growing on the top of a bank.—An Old Subscriber.

*** *We really cannot recommend any use of so powerful a matter as would be necessary to kill the roots of your trees. If sufficiently strong to kill all the roots, does it not strike you as impossible to grow other subjects for a long time hence? The roots will die in time if you keep suckers cut off. We would grub them if other subjects are wanted on the same site.*

371—**Gas-lime for fungi.**—Gas-lime has been recommended for fungi, but as it is not easily obtained where I live, can you say if there is another remedy?—G. J. M.

*** *Fresh lime, grey or white, will do. You can get this at any builder's, or from kilns.*

372—**Growing Japanese "Artichokes."**—I should be greatly obliged for any information about growing Japanese Artichokes? Is it the time to plant now?—K. E. H.

*** *Plant now. We presume you mean Chinese Artichokes (Stachys tuberifera)? Plant in good land in rows 2 feet apart, 1 feet between sets, and cover with 3 inches of soil. Plant in the open and feed in dry weather.*

373—**Creosote as a manure.**—Would you kindly tell me if creosote from tar is a good manure for Grape-Vines, as I know it is sent abroad for that purpose? If you advise it, when and how should it be used?—S. G. Curd.

*** *No; the tar, or creosote, is not good for Vines in any shape or form; absolutely poisonous.*

374—**Ipomæa Leari.**—I shall be much obliged if you will say what is the proper soil for Ipomæa Leari, and whether young seedlings now coming up will flower this year, and in an ordinary small greenhouse unheated?—J. D. C.

*** *Ipomœa Leari is a stove species, and needs more heat than an ordinary greenhouse would afford. Give a rich and rather light compost; leaf-soil and turfy loam are very suitable. If grown freely the seedlings should flower this autumn.*

375—**Plumbago not flowering.**—Will you kindly tell me why my Plumbago (blue) does not flower? I have it planted out under the stagings of my greenhouse, and it climbs up the glass on wires. Looks quite healthy, but has never flowered in two years. Heat, 50 degs. at night.—Mr. D.

*** *You should keep the Plumbago dry during winter, and when it has flowered cut back a little more than half way. Your temperature is suitable.*

376—**Soil for Coleus.**—What is the best soil for Coleus? Also when is the best time to propagate?—Nottingham.

*** *Root them at any time now, and give a light and rather rich compost.*

377—**Planting Lilies.**—I want very much to plant a bed of Lilies, different hardy kinds that will give a succession of bloom from May to November. Could you tell me which sorts would grow together in one bed, and how I should prepare it for planting, and where I should plant the bulbs? The soil is rather light and sandy, but could be improved. The situation is rather exposed, but gets plenty of sun. If the Lilies will not last until November, perhaps I could put some other herbaceous plant or bulb in that would succeed them. Should I put the Lilies in clumps, or dot them about in the bed, and how close can I put them? Also can they be left alone when once planted? I should be so grateful if you could inform me.—A. B.

*** *This is a very wide question. Lilies are so numerous and varied. Your soil seems suitable if you add a good dressing of cow or pig-manure. Your idea of placing a variety of species in one bed will not be found very successful. Much the best species are Lilium candidum and L. tigrinum and its varieties. These are very hardy, and improve year by year without any special culture. L. chalcedonicum, L. croceum, and L. Martagon are also very good and hardy. There are very few which flower very early or very late. Plant in the autumn; early in October is a good time. Cover with a dressing of leaves or light stable-manure. Your best plan would be to state your wants to a good firm, and say how much space you wish to plant.*

378—**Bed in centre of lawn.**—Will you advise me how to lay out a round bed in the centre of lawn? It is 8 feet in diameter and faces south. I want it to look well in summer. Would a Ricinus do for centre? I have Geraniums, Nasturtiums, Stocks, Asters, Pansies, White Candytuft, Mignonette, Yellow Sultan, and several other annuals, also a few Cannas.—Nottingham.

*** *Put the Ricinus in the centre and Cannas next to this. Geraniums can follow, and the bed be finished off with Pansies and Candytuft.*

379—**Crown Imperials not flowering.**—Will you kindly inform Mrs. Knight why her Crown Imperials do not flower? They are strong healthy plants in sunny situations. The soil is strong red marl. They do extremely well in the cottage gardens in the neighbourhood, but hers only flowered the year after they were planted.—Q.

*** *Lift and replant your Crown Imperials. Your soil and situation are suitable, and you should get flowers each season.*

380—**Pinching Vines.**—Is it when the bunches are set, or before, that the Vine-shoots should be pinched at the first or second leaf beyond the bunch? Also if it is safe to open the ventilators on both sides of a span-roofed vinery at once? The house is about 2 feet below the ground level, and there are no side ventilators along top.—A Young Beginner.

*** *You should stop before the bunches set if the growth is well developed, and this stopping will assist bunches to set. You must be careful how you give air; it is certainly not required on both sides at once; only a little on the warmest side in cold weather. But so much depends upon the position of house.*

331—**Failure with Vines.**—I have four Vines of Black Hamburgh in my greenhouse. Two of them are five years old, and these had good fruit on two years ago. Last year one of them died right back, and later in the season sent up a strong cane from the base, and this year they are breaking very weak. When about an inch long they die away. Two young Vines are doing the same. I grow plants in same house, and keep heat from about 50 degs. to 60 degs. all the winter. Border outside, and rather wet and clayey. Would that be the cause?—South Wales.

*** *Your Vines never get any rest. Unless you give a lower temperature you will not succeed. Your culture is at fault, not border.*

382—**Planting Vines.**—Would you kindly inform me when I should plant my Vines in outside border to lead them in through the wall to the hot-house? They are in pots, and are about 5 inches long. Any information about them would much oblige.—Malcolm McArthur.

*** *Plant this month, and well shake out roots at planting. Plant firmly, using a little fine soil near the roots. Do not force hard, or you will get top growth too much in advance of roots.*

Catalogue received.—*Treasures for Garden and Conservatory.*—Messrs. Clibran and Son, Altrincham and Manchester.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Drumreaske.*—Clematis cirrhosa.——*M. C. Boughton, Leigh.*—Scilla bifolia.——*Narcissus, Chepstow.*—1, Codlins and Cream; 2, Eggs and Bacon; 3, Leedsi.——*H. J. Metcalf.*—One of the Mulleins (Verbascum vernale, or V. Chaixi, as it is also called).——*N. T. Davey.*—Ribes sanguineum.——*Mrs. Minchin.*—Nothing more than the old Double Daffodil (Narcissus Telamonius plenus).——*Roc.*—Narcissus incomparabilis Stella; the other is Ornithogalum nutans (the Drooping Star of Bethlehem).——*G. T. Miles.*—Celsia cretica, belonging to the order Scrophulariaceæ.——*Plants from Rotherham—No Name.* 1, Cyrtomium falcatum; 4, Pandanus Veitchi; 5, Adiantum cuneatum; 8, Selaginella Kraussiana; 9, Cyperus alternifolius; 10, Euonymus japonicus aureus. The numbers, unfortunately, had become detached from the other plants, so we could not name them.——*A. E. D.*—1, Deutzia crenatum fl.-pl. (hardy); 2, Kindly send a better specimen.——*T. R. S. T.*—Staphylea colchica.——*M. M.*—1 is Narcissus Emperor, probably, but it is very difficult to tell from single flowers, as soil has much influence on the character of the blue; 2, Our wild Daffodil; a little more robust than usual.——*S. S.*—Andromeda polifolia.——*Miss T., Isle of Man.*—Arabis albida variegata. Any moderately dry, well-drained position will suit. Do not remove the old Grass until early May, when frosts and cold winds have ceased.

Name of fruit.—*A. R. R.*—Apple Winter Codlin.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

G. L. Nunn.—We know of no work treating upon this subject alone. "Johnson's Gardener's Dictionary," published by G. Bell and Sons, York-street, Covent Garden, contains admirably illustrated articles upon grafting and budding.

LAW.

Sale of land occupied as market garden.—Some five years ago a man took half an acre of land without any written agreement of tenancy; he took possession on January 1st, and paid rent half-yearly. The land was stocked with vegetables, bulbs, and Rose-trees for the purposes of sale, and two greenhouses and a number of frames were erected. The land has now been sold for building purposes. In what position does the tenant stand with the landlord, to what notice is he entitled, and what compensation may he claim?—Gardener, *York.*

*** Although there was no written agreement, the case comes within the Market Gardeners' Compensation Act, 1895, as it seems certain that on or before January 1st, 1896, the landlord had knowledge that the holding was occupied and cultivated as a market garden. The tenant will, therefore, be entitled to a year's notice to quit, and the notice must expire with a year of tenancy—that is, at the same time of the year as the tenancy began. That notice may be given by the purchaser, who becomes the landlord on the completion of the contract for purchase of the land. The tenant will be entitled to compensation for the greenhouses and frames he has erected, or he may remove them; as the frames will probably be simply placed on the ground, his best plan will be to remove them and put them up elsewhere or sell them. He will be entitled to compensation for any fruit-trees or fruit-bushes planted by him and permanently set out, for the planting of Strawberry-plants and of Asparagus and other vegetable crops, and for the unexhausted value of purchased manures used on the holding. Any claim must be made by written notice, given two calendar months before the determination of the tenancy, and the notice must state, so far as is reasonably possible, the amount and the particulars of the intended claim. If a claim is made for unexhausted manures, a deduction will be made for the manurial value of all green produce (vegetables, roots, etc.) sold off during the last two years. No compensation can be claimed under the Act for the Rose-trees.—K. C. T.

Notice to quit allotment gardens.—About a dozen of us hold gardens under a farmer, paying for the gardens a yearly rental in November. These gardens have been so let for some thirty or forty years, previous to which the land was waste and uncultivated and of no value. The owner of the land has now requested the farmer to clear us out, as he wants to place on the site of the garden some top-soil from the neighbouring land, where he has commenced to get sand. The farmer tells us that the owner can take the gardens from him without giving him any notice, but he has given us notice on March 25th last to quit on March 25th, 1898. Is the notice good? We consider we should have a year's notice, and as we pay rent in November we think the notice not a year's notice. We all grow produce for sale, and most of us have planted fruit-trees and erected greenhouses. Can we claim compensation, and if so, of whom, the owner of the land or of the farmer?—Upset.

*** From the description given these gardens are evidently cultivated as market gardens, and so you are all in the position of "Gardener, York," whose question is answered on this page. You may claim compensation for the fruit-trees and fruit-bushes, and for vegetable crops, as there advised, and you may also claim compensation for the greenhouses, or you may remove them. Remember that written notice of the claim (with all possible particulars) must be given to the landlord at least two calendar months before the expiration of the tenancy. Your landlord is the person to whom your rents are payable—that is, the farmer. You are entitled to a year's notice to quit, expiring at the same time of the year as the tenancy began; but you do not say when the tenancy did begin. The fact that rent is paid yearly in November does not make the tenancies commence in November. The question is when did your tenancies begin—that is, when does one tenant give up possession and his successor enter? If the tenancies began on March 25th the notice is good; if the tenancies began in November the notice is bad.

POULTRY.

Gapes in chickens (*Gapes*).—The best cure for gapes, if "best" means thoroughness, is to make the chicks inhale the fumes of carbolic acid. The chickens are confined in a small box, in which (protected by netting) stands a saucer containing a hot cinder. Over the cinder a few drops of the acid are poured, and the box is closed for a few (very few) minutes. The chicks must be watched, for immediately they begin to totter they must be removed, or they will be killed as well as the gape-worms. This remedy is, therefore, exceedingly risky, and should only be attempted by steady hands. Another method is to strip an ordinary feather of its webbing, all but a small piece at the top; dip this in turpentine, then pass it down the wind-pipe of the chick two or three times, turning it a little, and then it will be found that the worms adhere to the feather and are thus pulled out. The operation should be repeated for a couple or three days, so as to get rid of all the stages of the pest. Prevention is far better than any cure, and prevention can be secured by rearing the chicks on fresh ground, and out of the reach of the places frequented by the older Fowls.

Fowls losing feathers (*E. L. L.*).—The cause of your Fowls losing their feathers is because they have taken to the habit of feather-eating, and you may expect matters to become worse, for this fault is really incurable. The real cause is the overcrowding. Instead of keeping twenty-five birds in a run measuring 30 yards by 2 yards, we should only keep about five. It is a mistake to allow less than 10 square yards or 12 square yards to each adult Fowl, and you only give 2 2-5ths of a yard to each. It is not a question of green food, grit, water, or a dust bath, or one of cleanliness, but one of space.

Ducks dying (*Green Lawn*).—It is not absolutely possible for an outsider to discover the cause of death in your Ducklings, because so many influences might be at work in the case. It is undoubtedly a disadvantage to use stale eggs for sitting purposes, even though only a fortnight old, but frequently at this time of the year it cannot be helped. This would certainly lessen the chances of the birds hatching properly, but it may not be the real cause of the weakly Ducklings. The parent birds, for instance, may be too nearly related to each other; then they may be too young to produce strong Ducklings (for instance, hatched late last summer), then the hen might have sat indifferently, or the nest might have been in too dry a spot. Duck-eggs should always be set on the ground, preferably in a hollow, made by laying some fine soil on the floor and scooping out the centre to form a nest. On this some hay or

straw should be placed, and round the nest, a day or two before hatching is expected, some warm water may be poured. This will produce sufficient moisture to exercise some influence upon the shells.

BEES.

Best honey-flowers (*M. M.*).—The Crocus is a good Bee-flower, affording pollen in quantity, and some honey, although coming so early in the spring, and remaining in flower for so short a time, the Bees are not always able to derive full benefit from it. Arabis alpina remains in flower for a much longer time, and is most valuable in contributing to the support of the hive in early spring. We have a large plantation of this, which is crowded with Bees whenever the temperature is sufficiently high to allow them to leave their hives. The Wallflower, especially the early yellow variety, should be grown in quantity in every Bee-garden. Limnanthes Douglasi is also one of the most valuable of honey-yielding plants and is very hardy, a good bed of it affording the Bees much early pasturage, while the following produce large quantities of honey during the summer and autumn: Borage, Sweet Sultan, Trifolium suaveolens, Melilotus, Dwarf Sunflower, Phacelia congesta, P. alba, Candytuft, Alyssum maritimum, Honeywort. These are all easy of cultivation, and grow luxuriantly on almost any kind of soil. The great bulk of the honey stored in the hive is, however, obtained from fruit-tree blossoms, Clover and Bean fields, White Thorn, Lime-trees, and Heather, while the various kinds of Willow afford abundance of pollen in the early spring.

BIRDS.

Canary ailing (*V. Pinner*).—So many diseases of cage birds arise from errors of diet, and you appear to have ruined the health of your bird by indulging it with sweets, cake, and so forth. You are right in discontinuing these things, but it is to be feared it is now too late. All remedies appear to be ineffectual against surfeit, but you had better put the patient on spare and simple diet, withholding Hemp-seed entirely. And for the diarrhœa, from which the bird is suffering, you should make into a stiff paste a little prepared chalk, mixed with some Arrowroot and milk, adding a small portion of Pea-flour and a drop or two of brandy. This, placed where the bird can peck at it, will prove beneficial, and on the floor of the cage amongst the grit-sand may be scattered some old mortar in a powdered state and a little Maw-seed. We fear, however, that nothing will now save your bird.

Budgerigars (*Aviary*).—You would find these very interesting birds for your aviary, being beautiful in plumage, quite hardy, and breeding freely in confinement. They are natives of South Australia, and belong to the Parrot family, but are quite small, the body not being much larger than that of a Canary, although the long tail and short legs give them quite a different appearance. In plumage they are bright green, the back and wings being marked with dark, undulating lines and the fore-part of the head light yellow; the naked skin about nostrils is sky-blue in the cock and cream colour in hen. They commence breeding usually in August, after they have moulted, and will rear several broods before cold weather sets in. The eggs vary in number up to eight or nine, and are hatched in about sixteen days, but in succession, as the hen sits from the time of laying the first egg. Oats and soaked bread are added to the usual diet when there are young ones to be reared, the ordinary food being Canary-seed and Millet. These birds like a good-sized aviary, but agree well with Canaries and other feathered pets, and if yours is a well-constructed outdoor aviary you would find them a great success, although they will do very well indoors with proper management. As a nesting-place, nothing suits these birds better than a Cocoa-nut-husk, with an aperture at one end, hung up rather high. The Budgerigar is known also by the name of Grass Parrakeet or Shell Parrot.

Canary breeding (*C. C. B.*).—Yes, you may now begin to make preparations for Canary-breeding, but do not hurry matters—there's nothing gained, as a rule, in pairing birds so early in the season—better to wait a little than to have the hen just going to nest at a time when cold east winds are blowing. Before putting your birds together, let them occupy separate cages side by side for a time, and stimulate them for breeding by supplying them with a little hard-boiled egg and crushed Osborn biscuit, or bun crumbs. It is better that the cages be so placed that the birds do not see each other; the cock bird will, in all probability, soon begin to sing vigorously to attract the attention of the hen, who will answer him in return. When matters have arrived at this stage, they may be introduced to the breeding-cage, which should be furnished with materials for building purposes; these should consist of dry Moss, cow-hair, fine hay, cut into short lengths, and wool, to which a tiny feather or two may be added. A supply of pounded chalk or old mortar should be added to the sand on the floor of the cage, to provide material for the formation of shells for the eggs. The breeding cage should be placed in a secluded, yet well-ventilated position, but out of draughts, avoiding the upper part of a living-room where gas is burned. The number of eggs laid varies from four to six, one being laid successively every following day. The hen bird for the most part sits exclusively, the cock occasionally taking a short turn on the nest. When the young are hatched then the more serious duties of the cock commences, for he supplies them with food, while the hen broods over them so long as they remain unfledged. The period of incubation is thirteen days, the hen beginning to sit as soon as the first egg is laid. It is best to leave the eggs and not substitute false eggs, as is the practice of some breeders. The young begin to see when they are nine days, and leave the nest at the end of a fortnight. Should the hen begin nesting again the young ones must be placed in the nursery compartment, where the cock will supply them with food through the wires of the division for some time, but they should have some egg-food placed within their reach. In addition to the ordinary seed and water the birds should have a daily fresh supply of hard-boiled egg, minced fine, white and yolk together, mixed with a little white bread, steeped in water, and well pressed, and a small quantity of Rape-seed, which has been scalded and washed in fresh water to remove its acrimony. Upon these things the parent birds will feed the young till they are able to provide for themselves.—S. S. G.

NOTICE TO ADVERTISERS.

In consequence of the Easter Holidays we shall be obliged to go to press early with the number of Gardening Illustrated dated April 24. Orders should reach us as early as possible in the week preceding to insure insertion. No advertisement intended for that issue can be received, altered, or stopped after first post on Thursday, the 15th April.

BEAUTIFUL HARDY CLIMBERS. — Virginian Creepers, Clematises (red, blue, white, and grey), Bignonia Forsythia, 6d. each. Honeysuckle, sweet-scented, 4d. Variegated Golden-leaf Honeysuckle. Perennial Hop, Jasmine, White and Yellow Variegated Ivy, 6d. each. Irish Ivy, 3d. Wistaria, 9d. Pyracanthus, 5d. Euonymus, silver variegated tricolor climber, very beautiful, 9d. Evergreen Roses: Prairie Belle, Dundee Rambler, Ayrshire, Ruga, La Guirlande, 6d. each; Polyanthus Pillar Roses, 9d. each.; Bengal Roses, 6d.; Moss Roses, white and pink, 9d. Immense stock of best Roses, including Maréchal Niel, Red Gloire, Capt. Christie, Niphetos, Celine Forestier, Gloire de Dijon, Jacqueminot, La Reine, Richardson, &c., 9d. each; 3s. orders carriage free. All strong plants. — F. GAYE, Carlton, Lowestoft.

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GARDENING ILLUSTRATED.

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MARCH WILD FLOWERS AT GIBRALTAR.

A CASUAL glance at the towering sides of "The Rock" does not give much hint of vegetation, save for the dark line of Stone Pines that fringes the base of the precipitous cliff on its western side; but a closer inspection will reveal an amount of floral beauty apparently incompatible with the surroundings of rock, shale, and sand. In the month of March one of the handsomest wild flowers is, without doubt, the aptly named Iberis gibraltarica, this beautiful Candytuft, growing in profusion in the most inaccessible spots, great clumps, 2 feet and more in diameter, masses of lavender-white blossom, hanging to the sheer face of a precipice over 1,000 feet in height, in whose crannies the wild blue pigeons nest, and about whose face the kestrels are for ever hawking. Compared with the plants of this Iberis that may be found on more get-at-able ground or in the Gibraltar gardens, these children of the precipice exhibit a vigorous growth that seems almost miraculous in the apparent absence of all root-hold. Even the steepest cliffs, however, have their garniture of growing things; here Prickly Pear (Opuntia), here Gorse or Aloe, and in the neighbourhood of dwellings, even scarlet "Geranium" bushes, flowering on the craggy ledge. The Socotra Aloe (A. socotrina), with brilliant vermilion blossoms, paints with vivid colour whole breadths of rocks in early March, while battalions of Asphodels hold aloft their pale flower-spears in close array. Scilla peruviana and S. campanulata, Mallows (pink and sulphur-hued), bright Marigold, wild Mignonette, Campions, and Sea Lavender (Statice) are also then in bloom. Small purple and gold Crocuses blossom among the stones, and light Blue Periwinkle, Yellow Oxalis, and Sweet Alyssum are found flowering in every corner, while a small, brown Aristolochia clambers over bush and palmetto. Towards the end of the month a pink Mesembryanthemum colours wide spaces with its expanded blooms, and scarlet Poppies show here and there. Other flowers that probably owe their existence as wildings to escape from cultivated ground in past years are Madonna Lilies, White Flag Irises, and Antirrhinums. In the surrounding country as well as on "The Rock" a lovely little Iris (I. filifolia) is in blossom, and one has not to journey far in the mainland before coming across the Yellow Water Flag, clumps and lines of Blue Spanish Iris (I. Xiphium), Golden-yellow and Blue Lupines, Pink and White Cistus, the Star of Bethlehem (Ornithogalum), and hillsides of scented Cytisus.

The chief feature in Gibraltar gardens during March is certainly the Bougainvillea, which wreathes lofty wall, arbour, and tree with a mantle of vivid lake. The Blue Plumbago expands its delicately-tinted flower-clusters towards the end of the month, and long trails of Purple Ipomæa hang from branch to branch. Large Abutilons and Habrothamnus bushes are in blossom, and Scarlet Hibiscus and Salvia are aglow with colour. Great hedges of Heliotrope and breadths of Freesias perfume the air, and Tea Roses, Carnations, Pelargoniums (Zonal, fancy, and Ivy-leaved), Violets, Sparaxis, large-flowered Fuchsias, Coronilla, Libonia floribunda, florists' Cinerarias, Cineraria maritima, Arums in lovely masses, Daturas, the Yellow Jasmine (J. revolutum), and other flowers are in bloom. Judas-trees in quantity throw a purple-pink flush over the gardens. Hawthorn and Peach-blossom is fully blown, and the feathery foliage of the Pepper-trees sways amid the greyness of the Wild Olives and the sombre, motionless canopy of the Stone Pines. S. W. F.

HOUSE AND WINDOW GARDENING.

TABLE DECORATIONS.

THE subject for consideration is one that should appeal to all interested in the arrangement of cut flowers. There are many points in the consideration of this subject that deserve mention, especially so if one is anxious to get arrangements unusually attractive and interesting. Variety in arrangement of a dinner-table decoration is one of the first points worthy of notice, and if this be constantly recognised sameness in the floral arrangements of a dinner-table will disappear. There should be constant change, both in the design and in the use of the receptacles for carrying it out. Let a table be arranged in a certain orthodox manner continuously and it becomes monotonous. Not only must variety in arrangement be insisted upon, but also in the flowers, using those appropriate to their seasons. Thanks to the care of all thoroughly practical gardeners, it is possible, provided facilities are afforded, to supply the house with a constant change of subjects, and in establishments where it is known there is a particular liking for a certain flower it is possible to provide a number of displays of it on the dinner-table of quite a unique character. This demand may be supplemented by the ever-increasing supply of flowers from the florists, and as the market growers in the south of France and those of the Channel Islands afford us such an immense wealth of flowers during the spring and early summer to select from, those even with none too well-lined purses may have enough and to spare for a small outlay. In the early spring more particularly it is pleasing to turn to our market supplies for the pleasing variations in the floral produce they are able to provide. This should ensure the dinner-tables being kept bright at that season.

Old forms of arrangement are fast becoming obsolete, probably for the lack of variety afforded, and in place of épergnes of the old stamp those of new design and lighter make are being used. There are also many other utensils being used which are quite new in design, and in addition hand-baskets, bowls, and trumpet vases, besides many other pleasing designs. Each of these larger receptacles may be used at different times or in association with one another, so that there is a constant change. Coming to the arrangement of a dinner-table decoration, I have no sympathy with the practice of covering up a large portion of the table-cloth with Moss, Selaginellas, or kindred subjects, and arranging the flowers in this or in different glasses and other vessels, as they appear to me somewhat out of place, and also lack the grace and beauty which should characterise all floral work. What one has chiefly to keep in view is the best system of arrangement to meet the needs of ordinary dinner-tables, with special consideration for those intended for great festive occasions. Let us first understand the groundwork to go upon, and this can then be enlarged upon or made more elaborate as the case needs. For this reason it is always well to have in readiness a

VARIETY OF UTENSILS,

so that the design may be varied as often as possible. No hard-and-fast rule can be laid down as to the size of glasses, much depending upon the character of the flowers which are to be arranged. In illustration of this point, it naturally follows that if small flowers are to be arranged, vessels with suitable apertures should be used. It would be absurd to reduce the stem of a bold-looking flower to such an extent as to make it possible to arrange it in a small tube or specimen glass, as its proper place would be in the large trumpet vases or bowls. As an instance, a large vase could not be used for sprays of the beautiful Primula or similar small subjects, but for arranging Chrysanthemums, Pæonies, Lilies, the Oriental Poppy, and flowers of that character, such a receptacle would answer admirably. I have little sympathy with the practice of trailing Smilax and similar material over the table-cloth. The necessary effect may very easily be obtained without conforming to that undesirable arrangement. By the judicious use of suitable foliage, of which, during at least eight months of the year, there is always plenty, the pretty fairy-like appearance of festoons may be effected by inserting pieces of trailing foliage in the opening of the vase. By these means a neat and pretty combination may be made, whilst the material can be kept fresh, and untidy, withered looks be avoided. A dinner-table decoration may easily be overdone, and then, instead of being a thing of beauty, and a real artistic display, the result is very artificial.

Bows of some flowers placed here and there on the table sometimes add to its attractiveness, but care needs to be exercised in determining the choice of flowers for the purpose. Only those which last well should be selected, and one of the best for such a use is the Chrysanthemum.

For a table to seat, say, eight persons, an elaborate arrangement may be made by using, say, an épergne for the centre, and two small trumpet vases on either side of this. Four small tubes or specimen glasses should run down either side of the table, and if each of these be filled with flowers and foliage, a pretty effect should result.

A second arrangement would be a trumpet vase of fairly large size in the centre of the table, and a small bowl at each end. Arranged alternately on the side at equal distance should be two specimen glasses and two very small glass bowls.

A third arrangement may be added by placing in the centre of the table a neatly-arranged hand-basket, and on either side of this, at the

end of the table, two long glass tubes. Four specimen glasses on either side of the table should complete this set.

An interesting lot of flower-vases, bowls, and other ingenious devices have been recently made. These are fixed into neatly-made ironwork, with an occasional piece of bronze or brasswork for a finish. I have seen Daffodils arranged in these pretty stands, and they appeared to lend themselves peculiarly to the accommodation of flowers with long stems. D. B. Crane.

Window-boxes.—I should be glad if you would advise me what to plant in six window-boxes facing south? Being near the sea we are liable to have strong winds. I want something to hang down in front of the boxes. Would Canary Creeper be suitable? Also would Nasturtiums in such a position harbour earwigs? The boxes are all above the level of the garden, about 8 feet.—H. B. F., *Broadstairs.*

*** Nasturtiums (Tropæolums) and Canary Creeper would certainly be suitable, but we care most for such beautiful plants as the Bellflowers (Campanula isophylla), blue, and its variety alba, which has white flowers; the last-mentioned is the more vigorous of the two. Both these plants are a great success near the sea. The Creeping Jenny is another beautiful plant for the purpose, and you may also use Ivy-leaved Pelargoniums. White Stocks, Scarlet Pelargoniums, Paris Daisies (Marguerites), yellow and white; Tuberous Begonias, Calceolarias, Fuchsias, and Lobelias are all available. White Stocks and blue Lobelia for an edging make a delightful effect. The Canary Creeper and Tropæolum (Lobbianum is the kind to get) are almost too strong for the front. They are best on strings placed against sides and across top of window.

ROSES.

A TEA ROSE BED IN SPRING.

The bed I am going to describe ought to be 7 feet wide, and any length desired. Down the bed two rows of Tea Roses must be planted, 4 feet apart, and 1 foot from the edge of the bed. This leaves a space of 5 feet down the centre of the bed between the two rows of Roses. Previous to planting the Roses the bed ought to be well dug and enriched with manure (and if the soil is heavy, some leaf-mould and peat added down the centre of the bed for a space of about 3 feet wide). The Roses ought to have their budded part about 2 inches beneath the surface of the soil, and their roots carefully spread out and kept as near the surface as they will go naturally without any upward bending. Then right down the middle of the bed a row of Azalea mollis (or Ghent) ought to be planted, the same distance apart as given to the Roses.

Then put a good sized clump of English Wood Hyacinths (Blue Scilla nutans) down the rows of the Roses, in a line with them, the centre of each clump being half way between the Roses, and the outer edge of it reaching to within a foot of the Roses on each side of it. Put about two dozen bulbs in each clump, and plant the bulbs 3 inches apart. They increase rapidly, and soon form fine clumps thus treated. Of course, white or pink Scilla nutans could be used instead of the blue ones, but I prefer the blue, as they set off the creams and pinks in the Azaleas better, being more of a contrast. These will flower in May when the Azaleas are also in full bloom, so the bed will be very gay then.

It will also be a mass of bloom in March and early April. Having done as already stated, proceed to cover the entire ground with Crocuses planted 3 inches apart. Use three shades of mauves and violets, putting four rows of Mme. Nina all round the edge. It is pale mauve, and a very large flower. Then put two rows of Purple King also all round. Purple King is the deepest violet Crocus there is, and a very fine one. Then fill in the whole centre of the bed with Violet Queen, which is also a fine Crocus of a full bright violet shade. These all flower at the same time, which is also a great point, as many kinds of Crocus flower at different times, a fact all amateurs do not know.

My way of planting bulbs is this. I lay them on the surface of the bed just where I wish them to be planted, and then plant them with a small trowel, putting them 2 inches or 3 inches below the surface. It will be seen that by doing this the Scilla bulbs can be laid on first, and then the Crocuses, netted in between them, so that the places occupied by the Scillas are not left bare at the time the Crocuses are in bloom. When the latter are flowering the bed will appear one mass of bloom. It would not be more perfectly so if bedded out with Crocuses only, but as soon as these are over the Azalea buds will begin to show, and soon they and the Blue Scillas will monopolise the bed, and make it as effective as it can be in quite a different way.

The Azaleas and Scillas are quickly succeeded by the Roses, which soon seem to fill the bed. If the eight sorts are chosen they will make it very gay all through the summer and autumn. There is no Rose more hardy, more bright in effect, or more profuse than the Hybrid Tea Grace Darling. It soon forms a good bush, begins to flower early, and is one of the last to cease; in fact, it goes on flowering until frosts occur. As the flowers are of the richest pink, tinged with orange, it certainly is a valuable Rose for decorations. So also is the old Gloire de Dijon and Mme. Lambard. Maman Cochet is a Rose which everyone ought to grow; it thrives so well and has such lovely pale pink blooms. La France, Duchess of Albany, and Augustine Guinoisseau are all Hybrid Teas, though classed in catalogues amongst the Hybrid Perpetuals. I grow these three in my Tea Rose border. They all have La France blooms and perfume; but Augustine Guinoisseau is very pale pink, and Duchess of Albany is a much deeper shade than La France. It is a lovely Rose. So also is Viscountess Folkestone. It is a Hybrid Tea, and bears very large blossoms of a lovely shade of pale rose-pink. It is one of the best Hybrid Teas, has a good constitution, and is very free flowering.

Madame Eugene Verdier is a beautiful deep yellow Rose, not so free-flowering with me as the others I have mentioned, but a strong growing kind, and very valuable on account of its colour. It is really a deep yellow shade, and a very fine Rose. With me it flowers best late in the autumn. Perle des Jardin, also yellow, but of a paler shade, flowers freely and well. It has proved itself a very hardy Rose here in Cheshire, and in a smoky neighbourhood. L'Idéal flourishes also, and is a colour everyone admires—a mixture of deep rose, and red, and orange—but individually it is not so fine a flower as the others. Countess de Nadaillac is another Rose of the same peculiar colour. It is not so strong in growth as L'Idéal, but will repay anyone for a little extra trouble in the way of protection from frost. It is the only Rose I have yet named that needs protection with me, and I have grown them all for several years.

There are dozens of others I could name, but none which I find so satisfactory in this part as those mentioned. Mme. Bérard, a Rose not unlike a Gloire de Dijon, is an even more perfect Rose than that old favourite. It is quite as vigorous in its growth too, but with me bears only about half the quantity of flowers, and therefore I have not placed it on my list. It flowers more freely than Mme. Eugène Verdier, but is only a shade or two deeper in tint than Gloire de Dijon. Mme. Eugène Verdier is really a very deep yellow, and that is why I named the latter, and omitted to name Mme. Bérard. If many kinds are wanted, then by all means give Mme. Bérard a place.

The Roses should be bought from a reliable firm who will send them out true to name, and do not buy them from a firm whose nurseries are further south than the part of the world in which you live. In pruning Teas, do not prune until April, and be careful not to overprune if you want a good display of bloom.

I have my Tea Rose border thoroughly well mulched every other autumn, and some sifted leaf-mould and soil scattered over the mulching just before the bulbs begin to appear, so as to give a neat appearance to the bed.

Mrs. Robert Jocelyn.

Rose unsatisfactory.—I have been unfortunate with the new "annual" Rose raised from seed. I bought a packet last year for which I gave 1s. 6d. The seeds took weeks, or rather months, to germinate, and I eventually got five plants. They flowered more or less during the summer (all being white) and three have survived the winter, but they scarcely fill 3-inch pots. I followed the directions exactly, raising them in a cold-frame. I am trying again this year, and have had the pots in a propagator for nearly two months, and there is not a sign of movement. The old plants are a good deal mildewed. —C. B.

*** There should be no difficulty whatever if your seed was good, and you followed the instructions. Certainly a little gentle heat is a great help and an improvement upon a cold-frame, but the propagator is as much an extreme in the other direction. Try a few in a pan of sand, leaf-soil, loam, and decayed vegetable rsfuse in equal proportions. Do not sow deeper than half an inch and cover the pan with a sheet of glass, then stand it in the greenhouse under partial shade.

Baroness Rothschild Rose shoots dying (*Jacko*).—Your Roses are attacked by one of the weevils, but we cannot say which. They feed at night, and are very active. You will need to be quick to catch them, and not show a light until close to the plant. Use a little Quassia-chips in a weak insecticide, and syringe freely. This will make the foliage distasteful. The weevil lies under cover, or in the soil, except at night, so that fumigation is useless, as you would never get it strong enough to reach them without killing the plant as well. We do not think your Rose is La France, but Duchess of Leeds, a sport from La France, and distinct on account of having the deep colour upon the back of the petals only; also from not reflexing so much as the old La France.

Class and colour of Roses.—Will you please tell me the class and colour of the following Roses? I cannot find them in lists I have looked at: 1, Alba Mutabilis (H.P., blush-white); 2, Aurora borealis (N., white with pink centre); 3, Aurore du Matin (H.P., blush, lighter edges); 4, Abbe Brameral (H.P., deep crimson and maroon); 5, Alphonse Damurzin; 6, Bertha Baron (H.P., deep pink); 7, Charles Rouillard (H.P., pale purplish-blush); 8, Comte de Raimbaud (H.P., deep crimson); 9, George Moreau (H.P., rosy-carmine); 10, Jean Roserkrautz (H.P., almost a clear vermilion); 11, Emilie Hausbourg (H.P., a soft lilac with lighter edges); 12, La Favourite (H.P., clear rose); 13, Mme. Rival (H.P., soft and clear rose); 14, Mlle. Thérèsa Coumer; 15, Triomphe des Noisettes (a rose-coloured Noisette, obtained by crossing General Jacqueminot and Ophire).—C. C. R.

*** We give colours, and do not wonder you cannot find the Roses you name. Most of them are very old, and almost extinct. Some of your names, too, are evidently spelt wrongly, and two of them we fail to recognise at all. The others we gladly classify and give their chief colours. The names of such old but almost past favourites as Nos. 1, 3, 4, 6, 7, 10, and 13 have not come before us for many years, but we have a vivid recollection of their charms before new kinds drove them out of the field.

Culture of Tree-Carnations (*Mrs. C. H., Bridgwater*).—Tree-Carnations are grown to produce flowers from October until Carnations come into flower again in the open garden. By growing the hardy border Carnations in the open garden the flowering period is sustained through the summer and autumn. If no other glass accommodation exists except a cold-frame, it would be useless to try to grow Tree-Carnations. Better grow the border varieties in frames during the winter, and flower them under the glass lights, as it is so much better to have the flowers protected by glass. Ample ventilation is needed at all times. The best to grow are: Yellow, Miss Audrey Campbell, Germania, and Corunna. Of white, Mrs. Eric Hambro and Miss Ellen Terry; of scarlet, Hayes' Scarlet and Paradox; rose, Ketton Rose and Sweet Brier; blush, Waterwitch and Seagull; crimson, Uriah Pike and Mephisto. A few of the best Tree-Carnations are Mlle. Terese Franco, pinky-flesh colour, better than Miss Joliffe, William Robinson, scarlet; Uriah Pike, crimson; Mrs. Moore, pure white; Mrs. Llewelyn, rose colour. Do not water Carnations too freely, nor give manure-water until the flower-pots are filled with roots, and the manure-water ought to be weak.—J. D. E.

THE KITCHEN GARDEN.

PROFITABLE VEGETABLES.

Scarlet Runner Beans.

The Scarlet Runner Bean combines the useful and ornamental in an eminent degree, therefore I think its culture should be still more extended amongst the occupiers of villa and suburban gardens, if only for ornament—such, for instance, as covering arches, porticos, or wherever climbers are required, provided always the positions chosen are warm and sunny. Runner Beans grow rapidly, require but little training, and their large and prominently disposed spikes of scarlet, white, or speckled blooms, as the case may be, are borne in profusion till cut down by frosts, while the blooms, provided liberal treatment is given, will be succeeded by clusters of pods, which are very acceptable in most households. A row may be also grown in connection with the flower garden, the running growths in this instance being stopped near the ground, or at any height. For comparatively small gardens long rows of plants are not needed to maintain the supply of pods for the kitchen. On the contrary, a few isolated plants, say in pairs at intervals along the borders of the principal garden walks, will be quite sufficient. Plants trained to tall, strong stakes will generally yield a surprising quantity of Beans, and in addition are highly ornamental. In fact, this is one of the best ways of growing Scarlet Runners, especially where space is limited, the single pillars not greatly interfering with the neighbouring crops, besides proving more productive than is the case where either the rows or the plants are crowded. If rows are preferred, these, in common with Peas, may well be disposed next the pathways, thereby assuring them abundance of room and light without detriment to other crops adjoining, or rather on the garden side. As a rule, the Runner Beans are grown too thickly, the result being light crops, and, during dry seasons especially, these are of short duration. The ordinary method of sowing is in double rows, these being about 12 inches apart, and the seed frequently a less distance asunder, nearly every plant receiving a stake so disposed as to crop near the points, girding stakes connecting the whole. This I consider to be a mistake, the practice involving much unnecessary expenditure in shape of labour and stakes. A plan which I believe to be much more profitable is to grow them in single rows 6 feet apart, the seeds being sown from 4 inches to 6 inches apart, according to their quality, and eventually thinned out or made good by transplanting, so as to bring those retained to about 12 inches asunder. To each plant a strong, straight stake is given, these being, when inserted, from 6 feet to 7 feet high, and all are laced together with more stakes placed in a line 12 inches from the top, these serving to steady the whole. Between the rows of Beans two rows of Early Potatoes may be grown, but should the ground be too heavy for these then two or more rows of early Cabbages and Cauliflowers may be grown. Runner Beans may also be grown without stakes, and in some districts, especially near London, fields comprising many acres are devoted to their culture by many market growers. In their case I may add that the crops are to a certain extent speculative, their culture being necessarily expensive, but in a good season, and when in demand in the markets, they often pay very well; on the other hand, there are bad times, when the crop scarcely pays the expenses of marketing. In small gardens, or where stakes are not available, the field plan of culture may be advantageously adopted, and it is also the best for securing an extra early supply. The rows may be disposed 3 feet apart, and the plants eventually 12 inches to 15 inches asunder. Instead of encouraging the running growths, these should be kept closely stopped. If this precaution is neglected the Beans get smothered with growth, and in this state are both unsightly and unproductive. Stopping induces the early and continuous formation of large, erect spikes of bloom, followed by great handfuls of pods. As the latter are naturally heavy they rest on the ground, and in wet weather get rather dirty. For the markets they have to be washed in tubs of water, but in private places the washing may be avoided by giving the plants a mulching of fresh stable-manure, this serving to keep the pods clean as well as preserving moisture around the roots. Runner Beans require and deserve liberal treatment in the shape of trenched or deeply-dug ground and abundance of good manure. Narrow, Celery-like trenches are not to be recommended. These should be from 2 feet to 3 feet wide and two spits deep. They require abundance of moisture at the roots, and an occasional supply of liquid-manure will greatly benefit them. The pods should all be regularly gathered before they get too large. This must not be neglected, or the Beans will soon be out of bearing. H. B.

CELERY IN SPRING.

At this season of the year the amateur will be raising seedlings for future planting, and, in common with many gardeners, sows much too early. Few things suffer more quickly from overcrowding than early Celery sown in heat. It may be asked how is it possible to have large Celery unless sown early? My reply is that it may be necessary for early supplies or exhibition, but for what may be termed the general

Celery Superb White. From a photograph sent by Mr. Tallack, Liveremere Park Gardens, Bury St. Edmund's.

crop size is the forerunner of disease, pithy or hollow stalks, and what is termed "bolting." The latter is one of the worst evils in Celery culture the amateur is troubled with. The variety illustrated (Veitch's Superb White) is an early Celery, and one of the best of the newer introductions. It is a medium grower and very solid. It is also valuable from a culinary point of view, as it makes a delicious vegetable. In my opinion, the Celery is not used nearly as much as it deserves to be, as many persons may enjoy it in a cooked state who could not digest it otherwise. The Superb White is also a good keeping kind, and, doubtless, this is easily accounted for by its solidity. For late use I prefer a medium grower to a larger root, as it is less injured by frost. As regards its growth, it is much like that well-known kind, Major Clarke's fine Solid Red, and either this or Standard Bearer are good companions to Superb White if good keeping kinds are needed.

On the other hand, there is no lack of good kinds, much attention having been paid to this plant of late. I am not disposed to dwell on mere variety, as with so many good kinds the amateur should not go far wrong. He may, however, soon make mistakes in

Culture,

and to this point I will briefly refer. I have noted the evils of early sowing, and my remarks may not be quite clear. What I mean is sowing a pan of seed in strong heat and then allowing the seedlings to starve and get overcrowded. In most cases pricking off is delayed, with the result there is a thin, weakly plant which rarely obtains sufficient strength, when planted out, to resist disease and climatic changes. If the sowing had been deferred for a short time, less heat given, and more room, there would have been a much better plant raised with less trouble and less disease. If early produce is required, sow a pinch of seed, give ample room, and prick off as soon as the seedlings can be handled. For what, however, may be termed a main crop supply, the seed sown in frames early in April will give produce of the best quality, provided there is no check from the time the plant appears on the surface. What may be termed happy-go-lucky culture with Celery will not do. There must be a quick growth. Many are of opinion that when the plants are planted early in a mass of rank manures good culture is given, but this is a mistake. Rank manure given to a small, weakly plant which cannot absorb it, is almost poison to it. The best way is to give sufficient for a start, but rely upon liquid food or a good fertiliser as growth is made. Few foods are superior to weak liquid-manure from animals, giving frequent supplies in preference to one strong dose. The question of

Disease and other evils

is one needing a few words. Although growing many thousands of plants, I am rarely troubled with the above. Sow seed broadcast in frames on a little warm manure, lift as soon as large enough, and never allow the plants to get too large before planting in the rows. It is an easy matter to plant early, as there is no shading and little watering in their earlier stages, and a thick, sturdy growth. For late supplies a sowing in a frame or on a warm border in the open will provide Celery well into the spring. Many amateurs have little manure at their command, and fail to grow Celery on that account, but it is not needed, as too much means disease. Far better give a little at the start. Others foster disease by too early moulding up, which is a great evil, as growth is arrested just at a period it should be most vigorous. Mould up when growth is well advanced. Many have decayed roots by early moulding; by drought hollow stalks and a thickened base are fostered. Bolting is caused by giving small plants a mass of rank food at the start and starving later on.

G. Wythes.

Plants for shade.—"Yorkshire" would be very much obliged by the names of dwarf herbaceous and creeping plants to flower in summer and autumn under partial shade? Soil or peat can be obtained, also tree-roots and stones.

*** If the shade is not too dense and the position moist you could have a selection of Tufted Pansies (Violas), which would succeed as well as anything, and make a brave show through the summer. The Periwinkles (Vincas) (the double blue), the little Arenaria balearica (Balearic Sandwort) (creeping), Primula japonica, Primroses, Alkanet (Anchusa italica) (rather tall), Apennine Windflower (Anemone apennina) (to plant in autumn), Day Lilies (rather tall), Auriculas (if not too shady), Lily of the Valley, Dog's-tooth Violets (Erythronium), the Fritillarias, Forget-me-not, Globe-flowers (Trollius) (enjoy moisture), Hellebores, both Christmas Rose and Lenten varieties, and Saxifrages. Perhaps readers who have had success with plants in shade would also assist our correspondent?

308.—**Treatment of Arum crinitum and Calla alba maculata.**—These do not require any special treatment. The main point is to keep them always moist when growing and as near glass as possible to prevent the stems getting drawn up weakly. I particularly like growing A. crinitum, and have two plants just beginning to bloom. The flower much resembles an elephant's ear, and is covered with small hairs on first opening. It has a very unpleasant smell, resembling carrion, and is one of the most remarkable plants of the vegetable kingdom.—E. Vokes, *Kingsworthy*.

GARDEN PESTS.

SPRINGTAILS (PODURIDÆ).

These very common little creatures are often quite overlooked. They are known in ordinary parlance as springtails, on account of their habit of jumping away if they are alarmed. These jumps are made by very different means to those used by grasshoppers, froghoppers, fleas, etc., which all use their hind legs for that purpose. The springtails (at any rate, those which jump) are provided with a special apparatus under their bodies, which acts much in the same way as the spring in a toy jumping frog. It has been a matter of much discussion whether these little creatures are insects or not. It is now generally admitted that they are, but of a very primitive kind. These springtails are abundant almost everywhere in damp situations. There are a great number of different kinds. Most of them may be found among dead leaves, or Moss, in fungi, or wherever there is decayed vegetable matter; some even appear to live on the surface of standing water. Sometimes they are present in garden frames and hothouses in great numbers, and do much mischief in Mushroom-beds, Cucumber-frames, and among the succulent roots of plants. They injure Mushrooms when they are about the size of the top of one's finger. They also attack Cucumbers when they are quite young, gnawing off the outer skin, which causes them to shrivel. In the open air they injure the roots of Cabbages and plants of that kind—Carrots, Potatoes, etc. It appears that plants which are not quite healthy are much more liable to their attacks than those which are in full vigour. This may be said of all insect attacks, however. Curtis, in his work on "Farm Insects," stated that one species in Nova Scotia attacks the crops of Cabbages and Turnips when they are in seed-leaf, and entirely destroys them. He says:—"They may be expelled by sprinkling salt on the land after the seed is sown and well rolled down." I have never heard of any experiments having been tried in this country with a view of destroying them, and I have had no opportunity myself of making any. Fumigation with Tobacco-smoke or vaporising with Tobacco-water would, no doubt, kill them, but in Mushroom-beds they would be so nearly on a level with the ground that the smoke would hardly reach them, and vaporising might give the Mushrooms a taste of Tobacco. Watering the beds with any insecticide which would not injure the Mushrooms would probably kill the springtails. In many cases sprinkling the ground round the plants with salt, nitrate of soda, or soot, and then washing the insects off by syringing with water, would be worth trying; they would then fall down on to the insecticide, which would be wet, so that they could not escape. It is of no use syringing plants with an insecticide unless there is something hurtful to them to fall into, as these pests jump away as soon as they are disturbed. The species which live at the roots of plants are more difficult to deal with; lime-water, a strong solution of nitrate of soda, or common salt, or four parts of carbolic acid to one hundred parts of water, would be useful. If the soil is badly infested it should be allowed to remain fallow for some time and have a good dressing of gas-lime or quicklime. The springtails differ from most insects in several ways. None have even the rudiments of wings, the various parts of the mouth are very different, and the jumping apparatus which they are provided with is quite unlike anything that other families have. Their metamorphoses, also, are in no way similar; there are no abrupt changes, like those of a grub or caterpillar, in a chrysalis, and a chrysalis into the perfect insect, but the young, even when first hatched, very much resemble their parents in every respect except size, and gradually increase until they are full grown. The springtails are all small insects, varying from the 1-30th inch in length to ½ inch; they are mostly long and narrow in shape (see the figure), though some have short, rounded bodies; they are formed apparently of nine joints or segments, the first is the head, the three next form the thorax, and the rest the abdomen or body. The head is furnished with a pair of feelers of from four to eight joints; in some species they are very short, in others they are as long as the body of the insect. The eyes in most species are easily distinguished, but in others it is very questionable if they exist at all. The three joints which form the thorax or fore-body each bear a pair of legs; the feet terminate in a double claw, one part of which is much larger than the other. The body is clothed more or less with hairs, and sometimes with scales as well, and in some species terminates in a pair of upturned hooks. On the under side of the last joint but one, or the joint just before it, is attached the appendage by which the insect is enabled to jump; it is composed of a basal joint and two arms (Figs. 4 and 5), which in some species are each formed of a single joint and in others of two joints. When at rest this spring lies close to the body with the free end towards the head, on the next joint is the catch, a small forked appendage which, passing between the two arms of the spring and under its basal joints, holds it in its place. When a jump is made the catch releases the spring, which flies back and, striking the ground, throws the insect into the air. All the members of this family are not provided with this apparatus. Lipura ambulans (Fig 1) is a small white species which has been found doing much damage to the roots of Cabbages, and is about 1-14th of an inch in length and of a milky-white colour. It probably has no eyes; its body terminates in two hooks. There are several species belonging

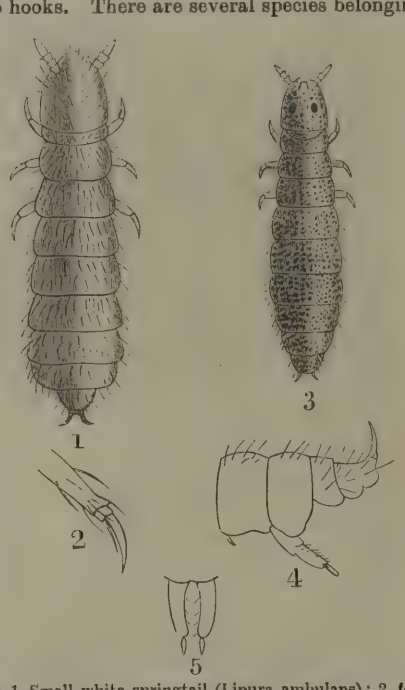

Fig. 1, Small white springtail (Lipura ambulans); 2, foot of ditto; 3, another springtail (Achorutes); 4, ditto, side view of spring (extended); 5, ditto, from underneath.

to this genus, none of which have any jumping apparatus. Achorutes, probably A. purpurescens (Fig 3), which I drew from some specimens which were causing much mischief in a Mushroom-bed; it is 1-17th of an inch in length, and brown in colour, with darker mottlings; the body terminates in two recurved hooks. The jumping organ in this genus is attached to the last joint but two of the body.

G. S. S.

Garden pests (*Anxious*).—The creatures you enclosed were a specimen of the luminous centipede (Geophilus longicornis). The centipedes are carnivorous, living on small insects, grubs, and this particular species is often found at the roots of plants which are unhealthy, but I believe that their presence there is owing to their having found food in insects which were feeding on the roots. The other specimen (the short, stouter one) was the grub of one of the rove or cocktail-beetles, belonging to the large family the Staphilinidæ; both the grubs and the beetles are beneficial in gardens as they feed on small insects, etc.

Grub from damp soil (*H. L. Jones*).—The grub you sent is that of one of the rove-beetles, of which there are a great number of different species, perhaps the best known one being the common devil's-coach-horse. None are injurious in gardens; in fact, they are just the reverse, as both the grubs and the beetles feed on animal food—at least the larger kinds do—and the others do not injure living plants.

An infested garden (*G. W. Barrow*).—Your garden is infested by the London snake-millipede (Julus Londinensis), which is a most destructive pest, and a very difficult one to get rid of. The smaller ones that you describe are the spotted snake-millipede (Blanjulus guttatus). They are quite as mischievous as the other. A heavy dressing of salt or nitrate of soda, well watered afterwards, will kill them, and probably a strong solution of corrosive sublimate would do also, and it should not injure the plants. Two handfuls of soot to one gallon of water is also said to be very efficacious. They may be trapped by burying small slices of Mangolds or Turnips about an inch below the surface near the plants. A small skewer of wood should be stuck into each bait, so that it may be easily found. The traps should be examined every morning.

Flies (*C. H. H.*).—The flies you send are specimens of "St. Mark's fly" (Bibio marci). They will not injure your plants in any way, nor will their grubs, as far as I know.—G. S. S.

Worms attacking Ferns (*Kismet*).—I cannot tell from your description what the small white worms may be, and I could not find any in your letter. Please send some, and I shall probably be able to tell you what they are.—G. S. S. [The frond was too poor to name; it is apparently one of the Pterises.]

FERNS.

REPOTTING FERNS.

Now is the best time for this operation, but at the outset of this short note I would point out that far more harm accrues from over than from under-potting. A Fern in bad health does not necessarily need repotting, and an overpotted Fern seldom thrives. They are apt to get too much water. Then, again, how much more useful—from a decorative point of view—a plant in a small pot is compared to one occupying a pot twice the size, but not any larger so far as the plant is concerned. Ferns are not—as a rule—gross feeders; nor do they need so much water as many imagine.

Consider how many of our Ferns grow freely upon an almost bare wall in preference to soil, and yet the spores had equal opportunities of starting in either. When pot-bound we can give water freely without injury, and really help our plants by so doing. Look, again, at our Ferns in hanging-baskets; how long they last undisturbed; and yet we should in all probability be potting the same plants on if not established in the basket.

What I wished to point out was the little need of peat in the case of most Ferns. A compost of peat and turfy loam is far better than one of peat only. Repot directly new growth is showing, and do not fear to reduce the ball of soil to about half of its original bulk. All Ferns should be well drained. We find them in moist and shady places, but it is upon banks that afford a quick drainage, and we must bear this in mind when potting. It is quite a different matter with Scolopendriums and the Osmunda regalis—the latter enjoying a boggy peat, and the former needing more water than the majority; but, taken as a whole, we over-pot, under-drain, and confine ourselves too rigidly to peat. U.

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TREES AND SHRUBS.

SHRUBS IN GARDENS.

We have a store-house of beautiful flowering and evergreen shrubs, but their charm is too often destroyed by overcrowding. A Spiræa ariæfolia standing out by itself on the outer part of the lawn or in some other suitable position is a pleasure to see, not, however, when cramped up in that least beautiful feature of many gardens—the shrubbery. The visitor to large cities will learn many lessons how not to treat trees and shrubs. They are pruned on a system which reveals itself in an annual cutting or shearing back of living shoots to make the shrub conform to a fixed shape or prevent its neighbour growing into it. There is no sense in planting six things in space sufficient only for a single example to expand into its rightful contour and display its true character. A Guelder Rose thrust into a common "shrubbery," a positive pest-hole of vegetation, has no chance of extricating itself from a crowd of vigorous Laurels or Privets, that overwhelm the most graceful of flowering shrubs. Placed by itself on the outskirts of the lawn the Guelder Rose displays its fascinating form, the wealth of its heavy flower clusters, and varying foliage colour from the tender green of the early leaf until the change to crimson hues that portend its fall. Every tree and shrub must thus be respected and made to play its proper part in the garden landscape.

Three golden rules must be observed in the management of trees and shrubs. 1. Give each sufficient space to develop, and plant it artistically, having a true eye for the position best suited to its colour and form. 2. Never prune in the usual acceptance of the word, but remove, of course, dead and worn-out wood. 3. Don't dig amongst the roots with a fork to irritate and destroy rootlets that are the channel of sustenance to the plant, but give surface-dressings when required.

Those who possess gardens of half an acre or so cannot plant Oaks, Chestnuts, and tree giants of this character; they are for the park, but as my previous chapter showed, one need not grumble. A hundred lovely and cherished dwarf trees and shrubs abound, and once a selection is made, plant wisely. The "swell" garden is often the last place to seek to know how shrubs should be planted. The shrubbery of many a domain is a sorry muddle—Lilacs crushed against Mock oranges, the graceful Guelder Rose struggling in the arms of hungry Privet, and Hollies smothered with far-reaching Laurels. Privet is detestable; it is dingy in colour, dreary and mournful, evil-smelling, too, when its creamy flowers expand. Get plenty of the many beautiful flowering shrubs. C.

THE MEXICAN ORANGE-FLOWER (CHOISYA TERNATA).

This is one of the most beautiful of flowering shrubs, and far hardier than many suppose, as various notes from our readers have testified. There is no doubt, however, that it is far more at home in the south of England and Ireland than in the north, and sometimes its wealth of glossy green foliage is set off by a flower display both in the spring and autumn. It is a shrub that may well be planted near the house to get the benefit of its Hawthorn-scented flowers, so named because of their resemblance to the Orange-flower. It is very beautiful on its native Mexican hillsides, and should always have a sheltered sunny position in the garden where the soil is well drained.

The Mexican Orange-flower (Choisya ternata). From a photograph.

Primula cashmeriana.—In Mr. G. F. Wilson's Wisley garden this species has been a feature for some time past. Hundreds of plants are blooming in various parts of the place where the conditions are naturally favourable. It can hardly be said that this Primula is cultivated at Wisley, the method employed being to plant in suitable positions and allow the seedlings to remain just where they spring up. In this way the plant has been in a measure naturalised, and the growth made is probably as free as is the case in its native habitat. Not only is this the case, but the effect is much better than if the plants were set out in a formal manner. P. cashmeriana delights in moisture, both atmospheric and at the roots, and should be planted where it gets some protection from spring frosts, which are apt to injure both flowers and foliage. The slight protection which deciduous trees afford is in a general way sufficient to secure the welfare of this pretty Indian Primrose.—Byfleet.

Anemone fulgens (*Eyham*).—Evidently the bulbs had got mixed, as there are both the ordinary single and the double variety. You have nothing to complain of, as far as we can see, from the flowers enclosed.

A feathered Cyclamen (*Ely*).—Very distinct, and we should certainly keep the plant. It may remain constant, and become even more pronounced and pleasing.

CLEMATISES FROM SEED.

Generally speaking, as far as the amateur and gardener are concerned, the raising of the Clematis from seed is almost, if not entirely, overlooked. It is, however, extremely difficult to understand why this method of reproduction should be so ignored, for few plants are capable of yielding such satisfactory results as these. And this is more than ever apparent if a little care be exercised at flowering time in hybridising the blooms by keeping the varieties within their own sections or division. Some gardeners may perhaps regard the raising of such things from seed as unnecessary, seeing how many really good kinds exist among the named varieties. This fact, however, should deter no one from raising a batch of seedlings occasionally if only for the embellishment of the shrubbery or woodland garden, for it should always be borne in mind that we have none too many of such beautiful climbers in our gardens, and, moreover, that however unworthy the seedlings may be when compared with the best named kinds now in cultivation, very few indeed would be unworthy a place in the garden. Many of the seedlings, while devoid of the florist's idea of form or insufficient substance of petal, have very good flowers, and many are possessed of great freedom of blooming. Any varieties possessed of the latter quality are certainly worth a place at the base of many a disfigured Araucaria or Wellingtonia, among whose branches these seedling Clematises might ramble to their heart's content. Frequently among seedlings of this 'class I have seen flowers of enormous size. Nor is it difficult to picture the result of some of these in the heyday of their flowering, rambling at will, it may be, over the heads of a plantation of Rhododendrons, Laurels, or covering a rustic fence or porch with a rich profusion of flowers of varied form. As a rule, our gardens are by no means overdone with free-flowering climbers, so that there are abundant room and opportunity for planting seedling Clematises with a free hand.

Seeds may easily be obtained in any garden where a few kinds already exist either by fertilising with their own pollen or by hybridising wherever opportunity offers. Frequently in hot summers a good batch of seed may be obtained without this assistance. Very often the seedlings are more vigorous than the grafted plants and less fear exists of breaking them, and for these reasons they are better suited for planting freely in the places mentioned. With the best-named kinds in the more prominent parts, the seedlings could be employed wherever an opportunity offered. I have stated that seeds are easily secured where a few varieties exist. And it is by no means a rare occurrence to get a score of good seeds from a single head. With these beautiful climbing plants there is no waiting half-a-dozen years for the result, for if the seeds are sown in a cold frame in the late autumn as soon as harvested the plants would be fit for planting in May following, and would flower in the year ensuing. Any seed sown in the early spring-time should be raised under glass in slight warmth, always, however, placing the young plants in frames as soon as they are a few inches high. When it is remembered what a wealth of beauty we have in these Clematises, the great majority of which have resulted from seeds, no one having a large garden at disposal need hesitate for a moment. In planting out the seedlings, previously well started in pots, always give them the benefit of a good strong stake. When planting in the woodland or near some disfigured tree, dig out a large hole and refill with a barrowful of good rich soil. Near trees or in the shrubbery the soil will be much spent, and unless a good start is given them, the newly-planted Clematises will not make much headway. Such things as these only need starting, and very few, I think, would object to see these free-flowering climbers rambling over the heads of Portugal or other Laurels or banks of Rhododendrons when these latter had finished their flowering for the season. A little forethought when planting among the latter, as well as a little attention after, would prevent any detrimental mass of the Clematis crowding the shrubs unnecessarily. E.

Japanese Grasses (*Luanza*).—We do not know which of the many beautiful Grasses you mean by Japanese. Can you not give us some further guide? A name, either common or botanical, would be a guide.

FRUIT.

RASPBERRIES.

Of the popularity of Raspberries there can be no two opinions. Very rarely indeed are too many grown. For dessert the Raspberry is scarcely so much appreciated as it ought to be, but for pies and for making into preserve no other fruit is in so great demand. It is one of the few fruits that travel badly, and each district has, therefore, to grow enough for local use—a point that tells more in favour of the growers than the consumers. Fortunately, the Raspberry is by no means fastidious as to soil if only there is depth enough to afford a sufficiency of food and moisture during the time the fruit is swelling and ripening. Even when the soil is shallow, resting on a hot or gravelly subsoil, the plants can frequently be kept in a healthy, productive state by means of heavy mulchings of strawy manure, these keeping the ground cool and moist. Raspberries are also liable to fail early on heavy, badly-drained soil, the foliage not attaining a healthy green hue, while the crops are light and the fruit small. On a moderately deep, fertile, loamy soil the plantations can be kept much longer in a profitable condition, but, as a rule, fresh plantations should be made every few years, these taking the place of those showing signs of failure. It is worthy of note that when Raspberries are planted among standard fruit-trees, all growing up together, they succeed well for a considerable number of years, the partial shade afforded by the fruit-trees benefiting the Raspberries rather than otherwise. It is not to be expected, however, that planting among fruit-trees after the latter have grown to a large size will turn out so satisfactorily. On the contrary, comparatively puny canes result from this planting on ground already exhausted of much that makes it fertile, and the shade is also too dense. There should, however, be no digging in of manure among the lines of canes, as this means the wholesale destruction of many fibrous roots with which the surface-soil ought to be crowded. Hoe and rake off weeds, if need be, and then mulch heavily with either strawy manure, peat-moss-litter (using this less freely), spent Hops, spent tanner's bark, or decaying leaves. Anything of a very forcing nature ought not to be used other than sparingly. For instance, it would be a mistake to mulch with kiln-dust or charred Barley sprouts obtained from maltings. A free application, or enough to act as a mulch, once, to my knowledge, had the effect of forcing young Raspberry-canes to a height of 9 feet, and their owner was very proud of them. It proved the ruin of the plantation, the plants not being equal to the strain of producing a crop in the following year or of forming good serviceable canes since. Neither nitrate of soda nor sulphate of ammonia ought to be used heavily by way of manure, as these also are liable to force the young canes into undue luxuriance. One part of either of these nitrogenous manures ought to be sufficient for mixing with two parts each of kainit or other potash salts and superphosphate of lime, applying the mixture in February, March, or early in April at the rate of 3 ozs. to the square yard. Liquid-manure may be applied with advantage to poor, well-drained soils during the winter and early spring months, and where solid and other manures are but sparingly used, liberal applications are of great assistance when the crops are swelling.

The Prolific Raspberry. From a photograph.

There has hitherto been too much rule-of-thumb business in the matter of

Pruning and training

Raspberries. We are too fond of shortening all the reserved canes to one height, and, as a consequence, there are usually thickets of fruiting-shoots at the tops of the stakes or fences and few lower down. The canes, whether trained to single stakes, fences, or espaliers formed with either wires or stakes, or grown market-grower's fashion (that is to say, without supports of any kind), should be shortened and laid in at least of three different lengths, the smallest of those reserved at the preliminary thinning being the hardest cut. Shorten the latter to a length of 18 inches, leaving others to from 30 inches to 3 feet in length, and in the case of the taller growers the strongest canes may be left to a length of 5 feet or rather less. In this way perfect columns, fences, or hedges of fruiting-growths are had, and a greater weight of fruit obtained than by shortening and training in the common fashion. It is true somewhat hard pruning is apt to favour sucker growth from the roots, varieties of medium height being particularly liable to produce far more sucker growths than desirable. This may to a certain extent be checked by either hoeing or hand-pulling, those left in the rows or near to the old canes also requiring to be timely and freely thinned out. There must be no hesitation about pruning newly-planted canes or any put out either last autumn or up to the present time. Those who have not previously made the grievous mistake of neglecting to shorten their newly-planted canes, as well as others who fail to profit by previous failures, are warned that, unless they forego all prospects of a crop this season, they will stand but a poor chance in getting one in the next and following years. Unpruned or only lightly shortened canes may and do produce fruit, but it is usually of an inferior character or comparatively worthless, added to which the plants will be exhausted in the attempt, and form no young canes worthy of the name. Cut them down at once to within 6 inches of the ground, and if they were properly planted all will push up strong young canes equal to bearing fruit next year. In this way the foundation of profitable rows of plantations of Raspberries will have been laid. Newly-planted canes should also be mulched, as owing to not having had time to send their "anchor" roots down deeply into the soil drought will quickly affect them. They ought further to be assisted by watering during dry, hot weather in June and July.

Varieties.

Reference has been made to the market-grower's plan of growing Raspberries without stakes; but it must be remembered that the old Beehive or Fastolf and any other tall-growing variety is unsuitable for this method of culture. If these were grown without support they would have to be arranged in rows not less than 5 feet apart, and even at this distance they would sprawl badly. As it happens, tall growers can be wholly dispensed with, as there are at least four good varieties that are suitable for the purpose. One of the best of these is Carter's Prolific, a good illustration of which accompanies these notes. This deservedly popular variety attains a height of about 4 feet, may be shortened to 3 feet, and the sturdy canes will then remain nearly or quite erect. It is a heavy cropper, and the fruits are large, firm in flesh, deep red in colour, and of excellent flavour. In Baumforth's Seedling we have a good companion for Carter's Prolific, this also forming extra sturdy, somewhat branching canes, which are rarely injured by frosts. When the ripened canes are shortened somewhat severely this induces an extra early strong growth of young canes, many of which produce fruit freely in the autumn. The fruits are large, firm in texture, dark red in colour, and richly flavoured. This and the foregoing variety are good travellers, and among the best to send to a distance for dessert. Hornet belongs to the same category. Superlative is intermediate between the medium and tall growers, and is suitable for either training to stakes and espaliers or for the market-grower's method of growing, the sturdy canes when shortened moderately hard standing well without supports. It is a heavy cropper, has large, rich red, finely-flavoured fruit. Fastolf, an old favourite, is not generally reliable, and, in my opinion, is inferior to Northumberland Fillbasket.

K.

Nut-growing for profit.—In thanking you for your excellent article on this subject in Gardening, April 3rd, there are two more points on which I would like information; these are what kind of artificial manure do you recommend as a substitute for farmyard-manure, and at what season ought it to be applied? Soil very light and sandy, and the trees old.—W. H. H.

*** Almost any quick-acting fertiliser may be used in place of farmyard-manure, such as bone-meal, fish, or guano, and others applied freely

early in the season from February to May, so that rains may wash them into the soil. In your case nitrate of soda once in the spring, given in wet weather, would do good. On the other hand, in your light soil cow-manure would be of great value.

Vine pests, etc. (*Vine*).—The insects in question are mealy-bugs, one of the worst pests one can have in a vinery, as they increase so readily at this season with the heat and moisture necessary for the Vines. Their destruction is difficult at this season. More can be done in the winter when the Vines are at rest, by thorough cleaning, scrubbing the canes with soft-soap and painting over with Gishurst Compound when dry. Your only remedy now is to go over the Vines daily and touch the insects when found with a small brush dipped in turpentine or petroleum. The pest breeds so rapidly that if allowed free play it will destroy your fruit. Yes, liquid from the source named would be good used in moderation as the growth of the Vines increases, say when fruit is set. Vines in outside border do not need food for some weeks; in fact, the soil is quite wet from heavy rains. Feed early in May. Blood and bone manures are good, but need time and an admixture of soil. Do you mean bone-meal or small bones? Large ones are almost useless. We fail to see how you need it with the others named above. Avoid excesses. Your temperature is right.

Night-scented flowers.—Your correspondent who wrote about these on page 33, March 21, might add to his list Heliotrope, Nycterinia capensis, and Petunia nyctaginiflora, all half-hardy annuals. If his climate is dry enough, why not try some of the Echinopsis, about which an article appeared November 17, 1894, Vol. XVI.? I grow all he mentions, besides which, Violets, Daffodils, Pinks, Irises, Carnations, and Roses all add their perfume to the garden.—G. J. Padbury, *Axminster*.

—— On page 46 there appeared a short note on the above, the writer of which was anxious to hear of other flowers, besides those already grown by him—Nicotiana, Matthiola, and Schizopetalon—to which the property of distilling their odour during the hours of darkness belongs. There are, I believe, few flowers which bloom in the open in England that entirely withhold their scent in the daytime, but most odorous blossoms become more fragrant as the twilight falls and the dewy hours of eventide approach. Then it is that the Double White Rockets breathe their rarest perfume, that the savour of the White Pinks and Carnations is purest, and that clambering Jasmine and Honeysuckle give forth their sweetest essence. Mignonette, Musk, Heliotrope, Bergamot, Sweet Sultan, Sweet Peas, Dictamnus Fraxinella, Narcissi, Hyacinths, Violets, Wallflowers, Hay-scented Woodruff (Asperula), White Lilies and Roses (especially the Sweet Brier, that welcomes the coming of the evening dews with balmy breath), Lilies of the Valley, and Sweet Alyssum, have all their distinct qualities and potencies of fragrance. Then there are the flowering bushes, such as Daphne, Lilacs, Syringas, Choisya ternata, Chimonanthus fragrans, while the sumptuous perfume of Magnolia grandiflora will flood the night air with sweetness. Other plants there are whose odours slumber till we brush their foliage with our hand—the Scented-leaved "Geraniums," Lemon-scented Verbena (Aloysia citriodora), Rosemary, Southern-wood, and many of the Herbs, and it is in the hours of dusk, when leaves are damp with dew, and renewed vitality has been absorbed from the moist, cool air, that the incense of these is most purely sweet. S. W. F.

THE AQUILEGIAS.

A beautiful race of hardy flowers is that consisting of the Aquilegias or Columbines, which are useful, too, for gathering for the house, as the stems are slender and graceful, and the colours refined. They are effective grouped among hardy perennials. During the past few years many beautiful hybrids have been raised, the result of crossing A. cœrulea with A. chrysantha. This has given us a strain of great beauty, as well as remarkable for diversity of colouring. A single packet of seed of A. cœrulea hybrida will produce many distinct forms, all worthy of cultivation and making a most pleasing feature in the flower garden. Nothing can possibly be more charming than a bed entirely composed of these delightful plants. In a cut state they are equally valuable. In the floral arrangements of the dinner-table these are specially valued on account of their light and graceful bearing. As pot-plants for the conservatory they are very pleasing and most distinct. It is worthy of note that when established in pots during the previous year these plants will endure gentle forcing. In the open garden they succeed well in most soils, preferably such as are fairly well drained. One of the best for the border is A. chrysantha, with golden-yellow flowers. This will grow 3 feet high in good soil and nearly as much through where fully established. A. californica and its hybrids are very showy, the flowers of an orange-scarlet hue on a branching bush 2 feet or more high. A. canadensis has scarlet and yellow flowers, which, however, are somewhat smaller than in the varieties named, but this is more than made up by their greater brilliancy. A. pyrenaica is also a useful species with lilac-blue flowers and the plant is dwarf in habit. The latter remark also applies to the Rocky Mountain Columbine (A. cœrulea) and to A. glandulosa. Both these are very charming and very distinct. The former has blue and white flowers and delicate thread-like spurs, while the latter, with its rich dark blue sepals and white petals, is very conspicuous. Another distinct type is that known as A. sibirica, though by no means so graceful or beautiful as the above.

Aquilegias should be regarded more as biennials. In deep and rich ground seedlings make rapid headway, and if transplanted when quite young, so much the better. From this time they should not be disturbed again till discarded altogether. Divided plants rarely give satisfaction even if they survive. Fresh seeds may be obtained at once, and if sown thinly in the open ground will make excellent plants for flowering another year.

Hybrid Aquilegias (Columbines). From a photograph.

THE GLORY OF THE SNOW AND SIBERIAN SQUILL.

These charming little spring flowers have, I think, flowered this season with more than their usual brilliancy. This is doubtless due to the mild weather experienced during the time they were pushing up their flower-spikes. Hard frosts, accompanied by falls of snow, have the effect of dwarfing growth, so that in some seasons the Siberian Squill does not seem able to push its flower-stems well out of the ground. This season the stems were unusually long, thus showing off the flowers to greater advantage. The fine colour of Scilla sibirica renders it indispensable in gardens where hardy spring flowers are valued; but it is a pity that so few seem to realise that neither it nor its paler-hued companion are unfitted for formal arrangement. In one garden I saw both Scilla and Chionodoxa dotted at regular intervals in little beds on the Grass; in another they were planted as an edging by the side of a long gravel walk, a thousand or more bulbs being employed. The owner evidently intended to have a good show of these little spring flowers, but their beauty was lost; whereas, planted in informal clumps of from thirty to fifty bulbs together, their true decorative worth could have been realised. Both these bulbous flowers reproduce themselves freely from seeds, and that is one reason why they should have a place all to themselves, where the soil about them is never more than lightly forked over. Every year young plants will appear, and thus in time colonies will be formed which will have a much more pleasing appearance than can be obtained by any kind of arrangement. Some years ago, when Chionodoxa Luciliæ was introduced, I planted half-a-dozen bulbs together, and these have now developed into a thriving colony of more than a hundred strong, from the one-year-old seedling to the adult bulb in its highest state of development. The seeds are never gathered, but fall to the ground, and come up without further care, and I am sure that they grow more freely and come to blooming size in less time in this way than if sown in the ordinary manner and transplanted. This is, I am convinced, the true way to use bulbous flowers that reproduce themselves freely from seed. Plant the parent bulbs well, and let Nature do the rest; she will do it better than can be done by the hand of man. Artificial arrangements, however skilfully planned, are apt to contain an element of formality which is ever absent in a purely natural growth.

In every garden positions may be found where

these little bulbous flowers can be established. They are quite at home near trees or shrubs, where summer-blooming things fail. Making their growth so early in the season, they are not so much affected by the heat and drought which is apt to prevail at the close of May and beginning of June, and may therefore be grown successfully where tree-roots take out much moisture from the soil in early summer.

J. C. B.

CHRYSANTHEMUMS.

SINGLE CHRYSANTHEMUMS.

These charming little flowers we dealt with recently, so need not enter upon the subject in detail now. There is great variety to be obtained both in colour and form, and their period of flowering extends from the end of October until the end of December. The majority of varieties, however, are seen in best condition during the early part of the latter month, when they are specially useful for all kinds of decoration. Half-a-dozen blooms of some of the medium-sized sorts placed in a vase, and not shorn of their foliage, make a pretty table decoration, and they can be used also to fill the smaller tubes and bowls dotted about on the table-cloth. It is better to grow them in bush form, and then when the buds appear to leave one bud on each shoot, as in this way a plant may be made to perfect an immense number of flowers for cutting, and for the decoration of the conservatory the plants present a mass of colour. The variety portrayed here is a pretty dwarf one named Miss Rose, and this is also one of the earliest to bloom. It is also very free-flowering, the colour white, suffused with rose. Other good sorts are Mary Anderson, white, suffused rose; and its sport, Miss Annie Holden, lovely canary-yellow; Mrs. D. Crane, is a distinct flower of a lovely shade of cerise-pink; Mrs. A. E Stubbs, purest white, is one of the best recent additions; while Kate Williams, a rich golden-yellow sort, is valuable for cutting; May Jeal, rose-violet, lined white, is a useful addition to those of this colour, and should be included in every collection. Other good sorts are Eucharis, pure white, extremely free; Golden Star, clear yellow; Jane, white; Miss Covill, deep chestnut-red, dwarf; Purity, white; Terra-cotta, terra-cotta; Treasure, bright yellow, a good late decorative sort; Scarlet Gem, bright scarlet, free; Yellow Jane, yellow; Gus Harris, rosy-lilac; Purity, white; and Framfield Beauty, a new deep rich velvety-crimson. This selection includes both early and late sorts, and different types of these interesting flowers.

A group of the Single Chrysanthemum Miss Rose.

Chrysanthemums on the Continent.—The National Horticultural Society of France will hold its annual show of Chrysanthemums in the Tuileries Gardens, Paris, on the 10th to the 14th November next, the show having outgrown its old quarters in the Rue de Grenelle, and the Palais de l'Industrie now in course of demolition being no long available. There will also be a Chrysanthemum show in Brussels on the 6th, 7th, and 8th November, in connection with the International Exhibition to be held in that city this year. There is a large number of classes provided, and medals will be awarded of various kinds to the successful exhibitors.

Stopping Chrysanthemums (*G. R. Roach*).—Mme. Carnot may be stopped third week in April and second crown buds retained; Duchess of York, first week in May and first crown; Mutual Friend, first natural crown, no stopping being necessary with this sort; Australian Gold, strong plants will give second crown naturally; Hairy Wonder, natural first crown. We should be disposed to stop Fred Waterton second week in May and retain first crown bud. Mrs. H. Weeks is a very late sort and ought to have been stopped quite a week before these notes appear, so stop the growths at once and retain first crown buds. We find a difficulty in answering these queries, as we do not know the condition of your plants.

—— (*A. B. L.*) This matter is highly important, and although many sorts will give the best buds naturally, and without any stopping whatever, yet a few of the more important sorts are assisted by stopping on certain specified dates. W. Tricker and W. H. Lincoln should not be stopped, but buds which show towards the end of August retained. Source d'Or will give you flowers during November without stopping, while Mary Anderson (one of the best single-flowered varieties) will also come to time without any interference with its shoots. L. Canning, J. S. Dibben, and Marie Louise should be stopped first week in May and first crown buds retained. W. H. Woodcock and Eda Prass may be stopped during second week in May, and first crown buds retained. We should be disposed to stop backward plants of Major Bonaffon third week in May and retain first crowns. Stanstead White will give first crown buds naturally. Follow cultural directions given in Gardening from month to month, and you cannot well make a mistake.

Starting growing Chrysanthemums (*Allen Duke*).—Almost all your varieties are of easy growth, and need no special treatment. Source d'Or is a free-growing sort, and may be allowed to develop terminal buds—the last kind which the plant develops. W. Tricker, Louise, Gloire du Rocher, Mme. Toller, and Mrs. Forsyth are best from second crown buds—the second buds after the break is made; and Geo. Glenny is one of the prettiest decorative incurved sorts, and should be flowered on the terminal buds. Beauty of Exmouth, Enfant des Deux Mondes, and International may be stopped at once and second crowns retained. Waban had better be stopped at the end of April. The buds of W. H. Lincoln should be retained during the last week of August.

Old Chrysanthemum plants (*Lucna*).—The only thing possible with your plants, supposing you want them to regain vigour, and also give you a better floral display next autumn, is to divide them at once. You will find they will very readily divide, and one old plant may make quite a number of new ones of a useful size. First shake the old plants out of their pots, also removing the soil from the roots. You will then see how easy it is to break off portions each bristling with a plentiful supply of roots, and if these be potted up into smaller pots—perhaps 6-inch pots will be a suitable size—they will soon go ahead and fill these with new roots. A light, gritty compost should be mixed, comprising two parts loam, one part leaf-mould and rotten manure in equal proportions, and plenty of coarse sand. When the potting is finished, place the plants in a cold-frame or a cool greenhouse, and leave them there until it is seen they are making progress. Keep the frame close at first, admitting air gradually until they may be exposed altogether when danger of frost is past. Repot into 9-inch or 10-inch pots when ready, and flower them in pots of this size.

Pinching Chrysanthemums (*Anxious*).—We cannot tell you respecting exhibition varieties of the Chrysanthemum simply because you do not name the varieties, and the treatment of these varies so much. But for decorative purposes you can stop them early in June, and again by the middle of July, to great advantage. Later than this is apt to check the free formation of flower-buds upon the majority of varieties.

Zygopetalum intermedium.—This is one of the most easily grown of all Orchids, and, like Z. Mackayi, to which it is closely allied, can be kept year after year without any apparent diminution of vigour. It is also a very handsome plant, and is admirably suited for growing along with ordinary warm greenhouse plants. It has stout egg-shaped pseudo-bulbs and strap-shaped, bright green leaves 18 inches in length. About half-a-dozen flowers are produced on a long, stout scape, each flower close upon 3 inches in diameter. The sepals and petals are green, stained with brown blotches. The lip is extremely beautiful; it is 1½ inches across, of rounded outline, the bluish-white ground being freely marked with deep purplish-blue lines, the whole covered with short down. Z. intermedium is very frequently seen in gardens under the name of Z. Mackayi, but the true Mackayi, which appears to be a rarer plant, has a smooth lip, and the lines on it are blue without any purple tinge. The two, nevertheless, are so closely related that even Reichenbach made the latter a variety of Z. Mackayi. Both these plants can be grown in the intermediate-house, potting them in a compost of peat and Sphagnum and giving them copious supplies of water during the period of active growth. Both are natives of Brazil, Z. Mackayi having been introduced in 1827, the other seventeen years later.

Self-coloured Cinerarias.—We enjoy greatly self-coloured flowers, and were charmed with the fine self Cinerarias which we lately saw in Mr. James' nursery at Farnham Royal, near Slough. There were many colours, but all selfs, such as deep blue, pure white, purple, crimson, and others, in each case the mass of colour as the various varieties are grouped together making a striking display. There are so many poor colours amongst Cinerarias that a series of self and beautiful colours is welcome.

ORCHIDS.

Cypripedium Boxalli *(T. W.)*.—The intermediate-house is certainly the best place for Cypripedium Boxalli, choosing a moist, shady position. Odontoglossum Phalænopsis was introduced under this name in 1850, but since that time its generic characteristics have become more thoroughly understood by modern botanists, who without hesitation placed it under the genus Miltonia, and is accepted as such by the majority of Orchid cultivators. This beautiful Miltonia is a native of Ocana, where it grows chiefly on the trunks and branches of trees in more or less shade, and always in damp situations. It is a rather delicate species, and requires careful management at all times. It should be placed in an intermediate-house temperature, and where the thermometer is never allowed to fall below 50 degs. during the winter months. In summer the Odontoglossum-house is a suitable place for it, or where an equable temperature of about 60 degs. can be maintained. At all times the plant should be placed out of the line of draughts from the ventilators, as its thin, grassy foliage is liable to become spotted from this cause. This species may be grown either in pots or shallow pans, with but a very thin layer of the ordinary Orchid compost to root in. It should be well elevated above the rim of the pot or pan, and an abundant supply of tepid rain-water is necessary, especially when the plant is in full growth or in bloom. The pseudo-bulbs and leaves of this Miltonia are particularly liable to the attacks of thrips and red-spider; and unless the plants are free from these troublesome pests they will never grow satisfactorily. Without doubt, one of the best means for their destruction is the XL All vaporiser.

Sphagnum Moss *(Querist)*.—The sample enclosed is not the true Sphagnum Moss, and we could not with any confidence recommend its use in preference to the ordinary Sphagnum. The samples of soil and leaf-mould are such as is generally used in gardens for the potting of stove and greenhouse plants. Such terrestrial Orchids as Disa grandiflora, Disa Veitchi, Disa racemosa, D. Kewensis, D. Langleyense, D. longicornu, Bletia hyacinthina, Habenaria bonatea, Satyrium aureum, S. carneum, S. erectum, S. cucullatum, S. candidum, the Madeira Orchis foliosa, and the numerous varieties of British Orchis would all grow admirably in it, and would, providing that ordinary care be exercised in watering, shading, and ventilation, thrive well in your cool greenhouse. Epiphytal Orchids, as a rule, grow best when potted in good fibry peat (the sample sent is an inferior one) and Sphagnum Moss, mixed together in about equal parts. For suitable epiphytal species, the various kinds of Odontoglossums, Oncidiums, Masdevallias, Cymbidiums, Cypripedium insigne, and Sophronites grandiflora, mentioned in the reply to "W. J.," would do very well in your greenhouse; but we would strongly advise you to keep the frost out by every means available. We do not advocate window culture for these plants, there being an insufficiency of atmospheric moisture, upon which the successful culture of the majority of Orchids mainly depends. Yes; you could grow your Persian Iris in pots. It is the natural habit of this species to bloom when the leaves are only 2 inches or 3 inches high. Iris are impatient of root disturbance at any time, their flowering being much hindered thereby. Plants that are established increase very rapidly, and flower with more freedom if allowed to remain undisturbed. They like plenty of sun and air, but should be carefully protected, if possible, from east and north-easterly winds. After flowering the plants should be dried off and exposed to full sunshine. When growth recommences in spring plenty of water should be afforded at the root. If the plants become properly matured by exposure to the sun there is no reason why they should fail to give their full complement of bloom next spring.

Odontoglossum luteo-purpureum sceptrum.—Among many varieties of this favourite species the above is as distinct as any. On a golden-yellow ground colour large deep brown blotches are so freely displayed as to nearly cover the sepals and petals. There is also a large brown nearly round blotch on the pale yellow lip, and the whole of the segments are deeply cut and prettily undulated on the edges. Both this and the type are natives of New Grenada, and are easily grown in a cool, moist house.

AERIDES ODORATUM.

The subject of our illustration is the best known of all the Aërides, and it is the species upon which the genus was founded. It has been in cultivation in England now close upon one hundred years, having been introduced into the Royal Gardens at Kew about the year 1800. Aërides odoratum is an Orchid well worthy of a place even in the most select collections, it being of a vigorous constitution and easy to cultivate, and its sweetly-scented flowers are an especial attraction. Other equally beautiful kinds which deserve to be more generally cultivated may here be enumerated, as Aërides Lawrencæ and its yellow variety Sanderiana, A. Lobbi, A. suavissimum, A. Larpentæ, A. Fieldingi, A. virens, A. Veitchi, A. Lindleyanum, A. crispum, A. quinquevulnerum, A. expansum, etc. Taking the species as a group, some of them will be in bloom from May to September. These epiphytal Orchids require a stove or East Indian house, but it is advisable, where a high temperature is maintained, to stand them in the coolest position available. For convenience they are best grown in pots, which should be filled nearly up to the rim with crocks, with a surface of living Sphagnum Moss. The proper and best time for root disturbance is in early spring, but if during summer the Moss on the surface becomes rotten it may be picked out and fresh Moss substituted. Throughout the growing season these plants require moderate waterings at the root, and an abundance of atmospheric moisture after closing the house early in the afternoon. Every care should be taken that no drip from the roof or from the watering-can finds its way into the centre of the growth or axils of the leaves, as the plants are liable to injury from this cause. Insect pests, as scale and thrips, will be sure to attack the plants if left long without being sponged; it is also necessary to sponge the leaves occasionally to remove dust. During winter when these Aërides are at rest only sufficient water is necessary to prevent the leaves from shrivelling. Now that their flowering season is at hand, carefully avoid the retention of the spikes on the plants for too long a period, or small weakly plants will over-flower themselves. W., *B.*

A fragrant Air-plant (Aërides odoratum).

Orchids for conservatory *(W. J.)*.—For the conservatory kept at 60 degs. to 70 degs. you should try such species as Dendrobium nobile, D. chrysanthum, D. Wardianum, D. crassinode, D. Pierardi, D. thrysiflorum, D. densiflorum, D. Farmeri, Cattleya Trianæ, C. Mossiæ, C. Mendeli, C. Bowringeana, Pleione maculata, P. Lagenaria, Vanda tricolor, V. suavis, Lælia anceps, Sobralias, Cypripedium niveum, C. bellatulum, C. Harrisianum, C. Sedeni, C. Lawrenceanum, C. barbatum, C. Spicerianum, C. callosum, C. Hookeri, C. Argus, etc. Also Cœlogyne cristata, Dendrochilum filiforme, D. glumaceum, Epidendrums and Stanhopeas. In the other house where the summer temperature is about 60 degs. and in winter from 40 degs. to 50 degs., providing a moderately moist atmosphere can be maintained at all times, you should commence with the following: Odontoglossum crispum and its varieties, O. triumphans, O. luteo-purpureum, O. Halli, O. Rossi, O. coronarium, Masdevallias, Maxillarias, Cymbidium eburneum, C. Lowianum, Cypripedium insigne, Disa grandiflora, Disa Veitchi, Disa racemosa, Oncidium cucullatum, O. Phalænopsis, O. Marshalli, O. concolor, O. dasystyle, O. macranthum, and the pretty scarlet Sophronites grandiflora. This latter house, having all the afternoon sun upon it, must be well shaded as long as the sun shines upon the roof, otherwise these cool and shade-loving species above enumerated will quickly deteriorate.

Lilium auratum failing.—We have carefully examined the growths of Lilium auratum sent by "C. H.," and would have preferred fuller particulars of the local circumstances. "C. H." remarks: "The auratums looked splendid, and it was not until they were some inches high that the plants became diseased." If the plants have not been plunged overhead in ashes highly charged with sulphurous gases we have no hesitation in regarding it as a case of imperfect bud-formation in the autumn of last year, which, assuming the bulbs are imported, would be the result of lifting much too early in their native home. If this is the correct view of the case it may be readily verified by allowing some of the stems to attain their maximum, as though intended for flowering, when it will be found that, in place of the abundance of flower-buds so usual in these plants, the extreme point will be barren. And we incline to this view from the fact—at least, in the examples before us—the disease, so-called, centres itself in the summit of the growth and diminishes lower down the stems. "C. H." will be able to judge best of this by the appearance of his plants generally. In very large importations an occasional bulb or so will exhibit the same tendency, though by no means to the extent described by our correspondent. We have also had similar experience of bulbs that have been kept out of the soil far too late before being planted. In the case of this species, as, indeed, others of the genus, a new bulb is formed within the old one each year, and raising the bulbs unduly early would end disastrously in so far as this season's flowering is concerned. It is, however, quite within the region of possibility that the flowerless bulbs of this year, with good treatment, will develop into good roots, and not only flower better next year, but make permanent groups of much value for the future. The great majority of bulbs of this Lily vanish after flowering, so that established groups would be welcome, and, as "C. H." is interested therein, are worthy a trial. The cultural conditions appear correct so far as stated, and, unless the points have been in direct contact with poisonous gases, the failure is beyond the control of our correspondent.

309.—**Daffodils not flowering.**—The Daffodils do not flower every year, but alternate years. I have many times explained this matter to my friends, who have complained of the same thing. This I can answer from experience as being quite correct.—E. Vokes, *Kingsworthy.*

Disease in Carnations *(Jura)*.—The only disease having a resemblance to that described by "Jura" is one common in America and not infrequent in England—namely, bacteriosis, and caused by bacteria. The only remedy is to cut off the diseased portions, and if the plants are badly attacked destory them.—J. D. E.

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately, three-halfpence, post free, from this office.*

GRAFTING FRUIT-TREES.

One often possesses a fruit-tree that is in full health, but of indifferent quality as regards its crop; or one may wish for some other variety of the same fruit. We do not propose taking this article upon the lines followed by trade growers who are aiming at a large quantity of young plants, but to assist our readers towards securing a better or more desirable quality of fruit.

The previous occupier of your garden may have planted, say, an Apple, Pear, or Plum for culinary purposes, whereas you would much prefer a table fruit. Provided the plant is healthy and not over aged, there is no reason why full advantage of its established roots should not be taken, using them as foster roots to another variety. Moreover, it too often happens that you could not find room for an extra tree and leave the less desired one standing.

Do not cut the tree down to the ground, but lop off all but a few (four or five) of the healthiest and best placed branches as a base for future growth. It is obvious that these will vary very much in thickness, therefore we show three distinct methods of grafting. In Figs. 1 and 2 the graft and stock are of similar dimensions, and are so clear that we need only add the scion should be about 9 inches long and the join between scion and stock occupy some 3 inches to 4 inches of this. Should the scion be a little smaller than the stock, follow out the plan of whip-grafting shown in Fig 2, but do not remove

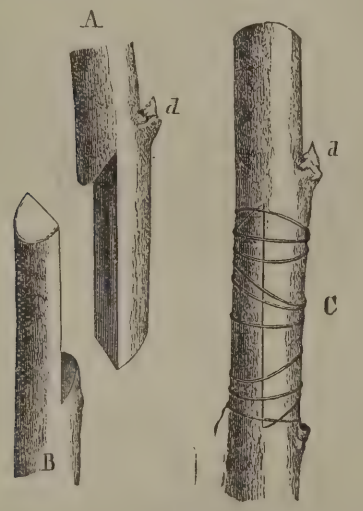

Fig. 1.

more from the stock than will allow of the edges of the scion fitting upon one another.

But it sometimes happens that the stock is very many times larger than the scion, in which case Fig. 3 should be our guide. Cut out a piece of a thick bark only, as shown at c—*d*. Prepare the scion (AB), and fit it together similar to E, Fig. 3. From one to four grafts may be set upon an extra size stem, and also if only one or two such stems or branches are available. But you must not attempt to graft upon an old and gnarled stem; it must be healthy. Except in the case of a young standard or half-standard being cut down, we would not elect to work more than two grafts upon a stem. The operations, as shown in Figs. 1, 2, and 3, will need firm binding together with matting, and the air kept off.

This is the more necessary because grafting is carried out during the latter part of March, a time when we are more than usually subject to drying winds and sun. At this date, too, the sap will be on the move, both in scion and stock. Unless sap be moving we should not get so healthy or quick a join, and this greatly facilitates the removal of thick bark necessary to carry out the operation shown in Fig. 3. A graft or scion should consist of the previous season's wood, and contain three or four healthy eyes or buds. A good way to avoid the effect of drying winds, and at the same time keep the grafts air-tight, is to get a little clay or stiff earth, mix some short hay, straw, or horse-droppings with this, moisten and beat until the whole is easily handled, and then plaster some around the bottom of the scion and stock. Tie this on again, and when finished it will resemble a silkworm's cocoon.

The prunings of any desired variety may be used as grafts, and if obtained from a distance are better laid in damp earth for a few days to plump up before use. Take care that the young growths are not broken off by wind and rain. Secure them to sticks firmly fastened to the stock, with the tops going some 2 feet or 3 feet beyond the graft.

You need not manure, nor need you fear the foster roots will produce too strong a growth. The top check, and consequently lessened demand, will not encourage more sap than the scion and a few natural breaks from the original stock require. As time goes on remove all but growths from the scions, and you will soon have a fully-established fruiting-tree at less cost and labour, and in far less time, than if the old tree was removed entirely and a young one from the nursery substituted.

Of course, you will graft a Pear upon a Pear, an Apple upon an Apple or Crab, and so on. In the nurseries Paradise, Quince, Crab, and other stocks are used; but in our case, where a recognised common fruit forms the stock, we must keep to such kinds.

OUTDOOR PLANTS.

EFFECTIVE ASSOCIATIONS IN THE MIXED BORDER.

The writer of the article on "Herbaceous Plants Massed" (p. 47) mentions some subjects which, when associated together, produce pleasing colour-contrasts. Such well-defined contrasts are valuable, and when met with should be made a note of for future use. One of the most charming colour-schemes I ever recollect seeing was afforded by a line of White Japanese Anemones flowering against a low wall which was covered with the leafage of the large Virginian Creeper, then in the zenith of its vivid, crimson beauty. This distinct effect was, naturally, very fleeting, but its evanescence did not detract from its loveliness. I find an excellent foil to the purity of Anemone japonica Honorine Jobert in the tall Lobelia cardinalis, which, with me, grows to the height of 4 feet, more or less, and whose glowing crimson flower-spikes retain their beauty for a lengthened period. These Lobelias increase year by year, and are left in the ground, totally unprotected, during the whole winter, though I believe there are few gardens where this system can be followed with success. When situated in proximity to such strong-growing subjects as the Japanese Anemone they should be lifted as they are starting into growth in the spring, and the ground liberally enriched before they are replanted. Galtonia candicans, associated with the Scarlet Gladiolus Brenchleyensis, corms of which can be purchased at a very cheap rate, forms another very effective contrast, as does the pure white Phloxes and Salvia patens. The latter cannot be classed as a hardy herbaceous plant, though in my own garden it has passed through the winter unscathed. Its rich blue is, however, of so rare a quality that the little trouble entailed in storing the roots through the winter is amply repaid by a lavish display that adds breadths of wondrous colour to the border. After the White Madonna Lily there is no self-coloured Lilium so striking as L. chalcedonicum, which should be grown in sufficiently large clumps. Indeed, in all colour-pictures where contrast is aimed at it is of vital importance that the hues be laid on with a broad brush—*i.e.*, that the colour-masses are of sufficient volume to create a distinct and instantly appreciated contrast. Amongst other good effects that may be cited, while upon this subject, are those of a colony of Poet's Narcissi rising from a carpet of Blue Forget-me-not and the Scarlet Lychnis (L. chalcedonica), backed by White Galega. Nothing, unless it be the geometrical designs, which are happily becoming rarer year by year, is more fatal to the placid atmosphere that should invest our gardens than the promiscuous dotting of the borders with varied hues. The eye that is rested by broad waves of colour and those suave harmonies where tint almost imperceptibly merges into tint, as in the autumn Starworts, the hybrid Aquilegias and Alstrœmerias, and which some portion of the garden should be always capable of affording, is distracted by such trivial patchwork and seeks repose in vain.

As regards the staking of tall plants—on which subject several writers have lately touched—some support is indispensable in the

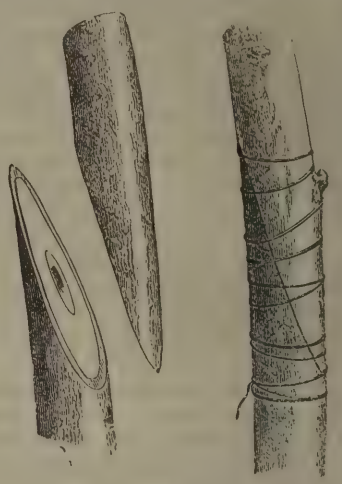

Fig 2.

case of many, such as Dicentra spectabilis, the Oriental Poppies, Galegas, Michaelmas Daisies, and others; but this may be given without imparting to the plants the sheaf-like appearance that is so justly condemned, for if, while growth is being made, some thin Bamboo-canes, painted green to harmonise with the foliage, are thrust into each clump, the outer canes inclining a trifle from the centre, the growth will be made naturally, and can be easily retained in position by being loosely looped to the canes with tarred twine. Staking has more to do with the appreciation of beautiful flowers than is generally imagined. The artistic eye revolts from the picture presented by tightly-bound, towzled flower-heads manacled to coarse wooden spars. Staking is usually done too late and too hurriedly, with the result that fair form, one of the chief attractions of a garden, is hopelessly marred. When carried out carefully in the manner suggested it is practically unnoticeable. S. W. F.

STONECROPS.

The common Stonecrop is frequently to be seen clothing dry banks, and very pretty it looks when covered with its bright blossoms. We have many of these creeping Sedums, varying considerably in colour, but all having the same prostrate habit—all remarkably hardy and quite indifferent to heat and drought. They flourish in the poorest soils; in fact, they seem to delight in the very conditions that are fatal to so many hardy flowers. There is a golden variegated

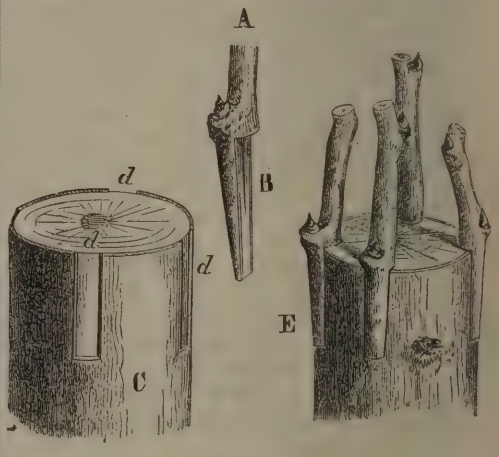

Fig. 3.

variety of the common Stonecrop that is remarkably effective at this time of year. In winter it goes green, but until the return of longer days the points of the shoots take on a bright tint, so that large patches glow like gold in the spring sunshine. Those who may have dry banks

difficult to clothe will find these Sedums better than anything else—better even than Grass, which in a very dry summer will parch and turn brown, whereas the Stonecrops will all of them remain in excellent condition. Among them may be planted bulbous flowers, such as Scillas, Narcissi, Crocuses, Fritillarias, etc., and very happy they will be under such circumstances, and the flowers will not be splashed with dirt, as frequently happens when the plants grow on the bare earth. Another way of using this very enduring family is to pot them for the embellishment of window ledges during the winter months. The generality of flower-lovers fill their windows with tender things for the summer, but with the exception of here and there some shrubs or conifers, one rarely sees any attempt at filling up the vacant space when the season for tender flowers is over. Nothing can be better than the Stonecrop for winter decoration. In the course of a couple of years they will completely drape the sides of the pots, and even in the hardest frosts they will remain fresh and bright.

J. Cornhill, *Byfleet.*

INDOOR PLANTS.

NEGLECTED PLANTS.

Allamandas.

These plants, although now very seldom seen in our gardens, are most valuable for the decoration of the conservatory in summer, there being so few flowers possessing such a bright yellow colour that can be employed for that purpose. The long, trumpet-shaped flowers in trusses of fours and sixes, with which a few well-grown plants are studded, produce a brilliant effect where shades of red in flower and foliage in other plants are predominant; the individual flowers also last much longer in the conservatory than in a warmer place in summer. The Allamanda is one of those robust-growing, easily-managed stove-plants that do well for decoration after being grown up to the flowering point. If kept out of the way of cold draughts of air in the conservatory, it will grow slowly and flower from the beginning of June to October, and the varieties I have found best suited to this purpose are A. Hendersoni and A. nobilis. The former is an exceedingly free-blooming kind, showing its flowers on much shorter growth than any of the other varieties; the flowers are also larger than any, excepting A. nobilis. It can be easily grown to a shapely plant by tying the shoots to a few sticks placed around the margin of the pot. A. nobilis is a more robust grower, and, unlike the other, which is smooth in all its parts, its wood and foliage are covered with fine hairs; the flowers are a pale yellow, but very much larger than those of A. Hendersoni. It is in every respect a noble flower. The plants are easily raised from

Cuttings, which strike as freely as Fuchsias if put in sandy light soil and placed on a bottom-heat of 80 degs. or thereabouts; also in a common dung-frame they will, if placed under bell-glasses, very speedily root. The cuttings should be made of short-jointed, half-ripened wood, and be inserted singly in thumb-pots, so that they can be readily shifted on without injuring the young roots. The points of the newly-struck plants should be pinched out, and after further growth, when two or three joints have been made, the points of the shoots should again be pinched out and the shoots tied outwards to sticks, thus laying the foundation for a future plant of good shape. When this has been accomplished the plants may be allowed to grow on and flower.

Potting, etc.—Suppose the young plants to be grown in a close, moist pit, in which the pots are plunged in leaves or tan, attention must be paid to shifting on as the pots become filled with roots. A very fibrous yellow loam, with a mixture of rotten horse-manure, suits them admirably. The Allamanda is a gross feeder and strong rooter, and therefore the usual admixture of peat is not necessary. It is in the second and succeeding years of the life of the plant that we find it most useful for the conservatory. If autumn or spring-struck plants have been grown on the first season they will be good specimens in 10-inch pots by October, and will then begin to ripen off. I would winter them in a pit where a temperature of 50 degs. can be maintained throughout the dull months, the pots being plunged in old tan or leaves just deep enough to cover them, a little moisture about the roots being supplied. Under this treatment the plants will gradually lose their leaves, and they will then require no water whatever at the roots until the time comes round for starting them again, for which the middle of March or even later will be sufficiently early. They should then be pruned back like Vines, cleansed of insects, etc., if necessary, then subjected to an increase of temperature, slightly moistening the roots and syringing overhead with warm water. When it is seen that the plants are just moving into growth they should be repotted, as much of the old soil as can be removed without destroying the roots being picked away; they should then be returned to the same pots, and be grown on in a light house or pit. By the end of April they may require a shift into a size larger pots. Good strong plants will do well in the same pots for three years, but then they should have when in growth frequent supplies of weak liquid-manure. For the rafters of a stove-house the Allamanda is a fine plant, growing and flowering with great freedom there, and it is also, generally speaking, if in good health, quite free from insect pests. Other fine Allamandas are Schotti, cathartica, and grandiflora, but they are not so well adapted for a conservatory.

H. B.

THE STREPTOCARPUS.

Although this undeniably pretty plant attracted a good deal of attention soon after its first introduction, and bid fair to become a favourite greenhouse and window subject, yet the last year or two its popularity appears to have waned somewhat, and neither the plants nor seed are in request to anything like the extent that their merits deserve. Certainly the blossoms are neither so large nor so richly coloured as those of the Gloxinia and some other Gesneraceous plants; but on the other hand they are produced in such profusion, and continuously over so long a period, as to amply compensate for any defects of the kind alluded to, while, lastly, the plants are of such remarkably easy culture as to render this really and truly an "everybody's plant."

Easily managed and brought to perfection as they undoubtedly are, yet good, well-flowered plants are by no means as frequently met with, in amateur's gardens especially, as they should be. Those usually seen are too small, cramped at the root, or starved, to show their true character and beauty, and the few straggling trusses of bloom afforded by such plants are comparatively ineffective, owing to the small size and delicate colouring of the individual blossoms—hence the Streptocarpus has, I fear, come to be regarded by too many lovers of flowers as a poor, weedy subject, hardly worth growing. This is a mistake, as when in good condition the plant is a really beautiful one, and retains its beauty for a much longer time than most others. The size of the blossoms is doubtless capable of considerable improvement, and this, indeed is being done already, but there is certainly a want of variety and richness of colour in the blossoms; the white kinds are admirable, but in most "strains" there is an obvious tendency to run too much to pale purples, slate, and dull blues in the flowers. But the skill of the hybridist will, no doubt, correct this defect also in due time.

A packet of seed, sown any time in January or February, in a moderate warmth (60 degs. to 70 degs.), will, if the seedlings are pushed on and potted as quickly as possible, afford pretty little flowering plants in 3-inch or 3½-inch pots by the month of August, and these, after flowering in an ordinary greenhouse temperature until the end of October, or possibly a little later, kept safe from frost, and potted on again in the spring, will furnish fine, many-flowered examples in 5-inch or 6-inch pots the following summer.

Or young seedling plants, which can be purchased at a very low rate, can be procured and potted, and if these also are potted into 2½-inch or 3-inch sizes, starting them into growth in a gentle warmth, and shifting them on into 4½-inch or 5-inch pots later on, when sufficiently advanced, they will commence blooming in May, and produce a constant succession of the delicate blossoms until the autumn. Indeed, I consider it a much better plan to start with young plants than seed at this season, as the seedlings, which are very tiny things at first, are somewhat slow in growth during the early stages, and even with care and skilful culture it is a long time before the first spike appears, while if at all neglected they will do little or no good the first season. On the other hand, the young plants soon make a rapid growth, and begin throwing up the flower-heads when potted and placed in a little warmth at this season.

The Streptocarpuses are not very particular as to soil, succeeding more or less well in any moderately light, sweet, and nutritious compost; but by preference a mixture of nice sandy loam, with an equal part of peat, a little leaf-mould, and some fine sand, should be employed. In default of peat, use more leaf-mould, and add a fifth or so of Cocoa-nut-fibre. A sprinkling of soot and bone-meal is also always beneficial. As these plants are not deep-rooting subjects plenty of drainage should be used, filling the pots a third full of broken bricks, small coal-cinders, or burnt "ballast," with a layer of rough siftings over. For the same, wide, shallow pots or deep pans are more suitable than anything of a deeper make.

Small plants for potting now, or shortly, are readily obtained by sowing the seed in June, instead of earlier. As it will germinate without any artificial heat, this plan suits those who have no warm-house or pit better than the other; all that is necessary is to place the pot or pan of seed in a quiet corner of the greenhouse, covering it with a square of glass, and shading, if necessary, from sun. The soil must also be kept regularly but moderately moist throughout; even in the winter, when at rest, the soil should not be allowed to become very dry, as the plants are practically evergreen, and if the fleshy leaves, in which the plant's vitality is stored, shrivel or die, the plant itself perishes.

When the first leaves of the tiny seedlings have attained a length of nearly half an inch, they should be pricked off into other pans or boxes, in the same manner as Begonias or Gloxinias; from these they are to be transferred singly to small pots (thumbs or 2 inch) when large enough, or they may be inserted in the "store" pots or boxes, and not potted singly until the early spring.

As regards treatment, although these plants enjoy a genial warmth in the spring, and again during the autumn, a high temperature is unnecessary and indeed injurious. They enjoy a constantly moist atmosphere, with shade from all bright sun, and thrive, if anything, better when kept at a distance from the glass than near it.

B. C. R.

Treatment of Arum Lilies (*Arum*).—Arum Lilies at this time of the year are somewhat too far advanced to receive another shift, unless required to flower very late. After the Easter festival they are thought little of, as there are so many varieties of choice flowers to take their place. About the second week in May it is advisable to stand the plants out-doors, placing them in a sheltered position under a south wall or under a large tree, where a little protection may be given in the case of late frosts. Water should not be given so liberally; gradually dry the plants off until the foliage has died away, and afterwards water sparingly for a few weeks, but not to allow the plants to become dust-dry. This will cause injury. In July or August the plants will commence to make new growth, when potting and dividing should be performed. Turn them out of the pots and shake all the old soil away from the roots and divide according to the size the plants are required. After potting plunge the pots in a border in a warm position, or in ashes if the space in a border cannot be spared, as this keeps the roots moist and cool. Another method of treating Arums after they have finished flowering is to harden them off outdoors for a few days and then plant out in a border or in a vacant place; but should the season be dry it is advisable to water occasionally. At the beginning of August the plants will make new growth, when it is time to lift them and pot on. But by planting outdoors the plants make more roots, so it is necessary to give much larger pots. When potted place in a cold-frame and syringe two or three times a day to prevent the foliage

from turning yellow. At the end of September a place should be found for them in the greenhouse where plenty of light can be given to prevent the plants from getting drawn, both for the plants in the frame or those plunged in the border. Continue syringing once or twice a day when the weather permits, and give air judiciously. Arum Lilies are useful for forcing, and if stood in a warm-house, where a temperature of from 55 degs. to 60 degs. is maintained, they will flower in October, and are acceptable for Christmas festivities. Green-fly infests them occasionally, but by free use of the syringe or an occasional smoking with Tobacco-paper this can be prevented if taken in hand as soon as noticed.

LAW.

Licenses for male servants — gardeners.—In these gardens two men are employed for whom male servants' licenses are taken; there is also a lad who has been employed here for four years, but for whom no license has yet been taken. The excise officer now says a license must be taken for him, as he would be called an apprentice, but there has been no agreement for any apprenticeship. Is a license necessary? — Constant Reader.

*** If the lad is merely an ordinary labourer, doing only spade work and receiving ordinary labourer's wages, a license is not required, but otherwise a license must be taken out for him whether an apprentice or not. It is presumed the gardens in question are not market gardens? —K. C. T.

Law queries.—Queries must only be sent relating to matters concerning the garden, such as to garden property, market or otherwise, greenhouses, etc. Many queries relating to other matters have been sent, but these do not come within the scope of this journal.

Classes for village flower show (*G. L. F. S.*).—In starting a village flower show the classes for the various competitions should for the first year be of a very simple kind, and should include those in which there is every reason to believe you would ensure keen rivalry. Classes for a dish of Peas, Round Potatoes, Kidney Potatoes, six autumn Onions, or a large number of Spring Onions, three Cabbages, three Cauliflowers, three Lettuce, bunch of Turnips, bunch of Carrots, six Beet, dish of Broad Beans, two Marrows, and collections of vegetables four sorts and six sorts distinct. Single dishes of bush fruits might also be asked for. Strawberries, too, should have a class made for them. Collections of fruits, four sorts and six sorts distinct, would be likely to be popular. A class for a collection of salading might well be provided. In the way of plants, window-boxes filled with plants would brighten the show. Classes for one, two, and three window-plants should also be encouraged. Fuchsias, "Geraniums," and such simple plants are easily grown by cottagers. For the more ambitious exhibitors a group to occupy, say, 12 superficial feet would form an interesting exhibit. A nosegay of garden flowers, collections of six bunches hardy annuals and six bunches hardy flowers, should further assist to make a floral display. Collections of herbs are useful things to encourage too. Two or three prizes in each class should be provided, the sum in each case being determined by the funds at your disposal. A small subscription should be paid by each member, say, 1s. 6d. or 2s. 6d. per annum. When sending in the entries, at least five clear days' notice should be given. Each exhibitor, when sending in his entry, should be provided with an entry form, stating that the produce he proposes to stage has been grown by him. Fix a convenient time when exhibits must be ready for the judges, whose decisions must be final in all cases. No exhibitor should be allowed to receive more than one prize in the same class. You should endeavour to obtain the help of persons of influence in your neighbourhood by requesting them to make exhibits "not for competition," by these means making the show additionally attractive. The exhibits might also form object lessons for the villagers to copy, or to aspire to. Do not tax your exhibitors by charging entrance fees, but let their annual subscriptions suffice. The County Council lecturer or any real practical gardener from a distance should answer the purpose of a judge. Have a class for wild flowers for the members' children, as this is always very popular. If you send a stamped envelope we will send an old prospectus.

THE DOUBLE WHITE ROCKET.

The Rocket, or Dames' Violet, though considered by some indigenous to Britain, is yet a doubtful native plant, but it is well-known. It is of tall growth, so much so that it is perhaps doubtful if the double varieties have originated from it, especially as while the single form will grow almost anywhere, the double forms require a cool and moist situation to succeed well.

I have met with three forms of the double Rocket; one, the purple or reddish-purple, and there is a form of this which was produced some years ago under the name of Compactness, but which differed only slightly, if at all, from the original type; the strong-growing French white, with its large and delicately tinted blush flowers, and the dwarfer-growing and smaller-flowered pure white, a delightful hardy plant where it will do well. This last seems to be very impatient of heat and drought. Away in the north it appears to have two blooming seasons, in May and June and again in the autumn; but a few weeks young suckers will be thrown up, and they will form roots for themselves. These can be taken off and planted out under a hand-glass or in a cold frame in light sandy soil, be well shaded from the sun, and carefully watered. With good management these soon grow into excellent plants. If the suckers are not rooted when taken off they soon strike under a hand-glass in a suitable sandy compost. Cuttings are sometimes made out of the flower-stems that are allowed to remain, but they do not generally make such good plants as the suckers.

In suitable localities the young plants when sufficiently rooted are put out in nursery beds, some well-decomposed manure being added when planting is done, or, as a matter of precaution, they can be wintered in a cold frame, and planted out in spring not later than March.

Snails are apt to be troublesome at times, devouring the leaves and robbing the plants of verdure, and a small green caterpillar, which generally makes its appearance in April, will locate itself in the centre of the bud of the flower-stem; its locality is soon discovered by the leaves being drawn together. A hunt should be made for this marauder. Some sharp sand spread round the plant stems will lessen the danger from the attacks of snails.

Sweet Double White Rockets. From a photograph by Mr. S. Wyndham-Fitzherbert, Torquay.

that is brought about by the treatment given it by those who cultivate it well. I remember on one occasion seeing a border of plants in the north, and the White Rocket made one line, and very striking it was, blooming later, it is true, than in the south, but the way in which it had been treated conduced to this result. There is what is known as the double yellow Rocket (Barbarea vulgaris flore-pleno), with its small double yellow blossoms produced in the form of spikes; and I have heard of one gardener in Scotland who had every season (some years ago) a border formed of the four types of Rocket; the front line, a row of the dwarf double white; then one of the crimson; then a row of the French white; and finally a line of the double yellow. I think it is very likely that there exists in Scotland—or certainly did exist a quarter of a century ago—one or two distinct types of the red or crimson Rocket, and we may perhaps hear something of them again.

While the single Rockets produce seed, the double forms do not, and increase can be had only by means of suckers or cuttings. A good plan to adopt with the double forms is to cut them down to within 6 inches or 8 inches from the ground when the flowers have faded, stir the surface soil round the plants, and top-dress with some good light soil, say well-rotted leaf-mould and sand in equal proportions. In the course of

The Double White Rocket is always worthy of being well cared for, and I trust that the foregoing remarks may tend to call attention to this undoubtedly fine garden plant. R.

Azaras.—There are three species of these Chilian shrubs, all of which will thrive with the protection of a wall; in fact, they will often stand as isolated bushes. The hardiest and the most graceful is A. microphylla, whose small, very dark shining green leaves are arranged in two opposite rows on the shoots; the branches also are produced at regular distances apart and droop gracefully, the effect of the whole being that each branch presents the appearance of the frond of a Fern. A larger-leaved, but less graceful species is A. integrifolia, while A. Gilliesi considerably exceeds the other two in size. Where A. integrifolia is trained to a wall, a place should be chosen for it where it is not at all necessary to keep the plant secured closely to the wall, as a good deal of the beauty of this Azara is lost if trained too stiffly.

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GARDEN WORK.*

Conservatory.

Fires will be required a little longer at night if the house is to be kept gay, as plants brought from a warm-house to a cold one will suffer; but 50 degs. at night will be quite high enough, and it will be better to let the fire out in the morning and light it again in the afternoon, and on very mild nights the fire need not be lighted at all. There is nothing in which errors of judgment are likely to do so much harm as in the management of fires, and there is less room for errors at this season when the fire is permitted to go out on fine mornings, and the fuel saved will more than compensate for the time taken in lighting the fire. Well-grown Mignonette is always attractive; but first-rate examples are not met with everywhere. In the first place we must have a good strain, and in the second it must be well grown. Nice plants in 5-inch or 6-inch pots are useful in the conservatory, and may be taken into the rooms when required. To grow Mignonette well the loam must be good and not too light. We are very particular about our loam for Chrysanthemums, Pelargoniums, and Mignonette. The loam of the district is not good enough, and we get it by rail from a spot where we know it is good, although the expense is considerable. It is said a good workman never complains of this, but it is useless trying to grow first-class stuff in bad loam. Having secured good loam, it can be lightened and enriched by adding a little old cow-manure and leaf-mould, with some sand, and if the loam is stiff a little old plaster broken up fine may be added, or charcoal-dust may be useful. Drain the pots well, and ram the soil in firmly. Sow the seeds thinly, and grow in light position, and do not overwater at any time, nor yet permit the plants to get dust-dry. Mignonette is worth all the trouble bestowed upon it, as there is so much difference between the good and the bad. For winter blooming Mignonette is sometimes sown in April and grown as single plants, pinching off the plants all summer; but pinched Mignonette is not so fine as where it is grown in very fine soil and flowers without pinching. For flowering now in 5-inch pots September is time enough to sow.

Stove.

Gloxinias will be coming into bloom. Other plants which associate well with these are Streptocarpuses and Saintpaulias, and a small house filled with these plants will have a very cheerful effect. Gloxinias are easily raised from seeds, and they are also easily propagated from leaf cuttings. A small leaf is cut off where it can be spared, the stalk of the leaf is inserted in sandy peat, and the pot plunged in bottom-heat and shaded from bright sunshine. A tuber will form at the bottom of the stem that will make a flowering plant the next season. Saintpaulias may be propagated in the same way. To obtain large plants of Gloxinias pot in rich soil. They are usually in poor, light stuff, such as sandy peat. Give them some old dung, and have large flowers and massive foliage. I have often struck the tops off Achimenes to obtain dwarf-flowering plants for room decoration in 5-inch pots. They strike freely in bottom-heat at this season. Streptocarpi are pretty things in a small way, and are easily raised from seeds. In syringing stove plants do not damp Gloxinias or Maidenhair Ferns, and, as regards other things, make sure the water is soft and pure. Rain kept in clean tanks is the only safe water to use for syringing. Nothing is worse than to have plants with foliage encrusted with a deposit of lime. A little shade will be necessary on bright days, but roll up blinds if the sun goes in prematurely. There should be plenty of flowers in the stove.

Vineries.

If the houses are at all stuffy or draughty through careless ventilation there will certainly be something go wrong. It may be rust on the berries, or mildew will attack the foliage and fruit; but mildew sometimes comes through dryness at the root—in fact, any check will in some houses be the prelude to the appearance of mildew. If the Grapes have been scalded, or if they have cracked in previous years, do not stop quite so closely. Leave them a good breadth of foliage, and, above all, be specially careful about the ventilation. Young hands will not take the necessary trouble. When they think the house wants air they will throw it open all at once, instead of beginning a little earlier with a small crack and gradually increasing the opening as the sun gets higher in the heavens.

Peach House.

In thinning Peaches, have the crop on the upper side of the trellis. This can easily be managed where the trees are healthy and the blossoms set freely. Good fruit can be grown 6 inches apart if the trees are well nourished with liquid-manure, or, if artificials are used, sprinkle over the border and water. Peaches do best in firm soil, and the soil should have some body in it; but it must also contain some lime, or, if it does not, some old plaster should be worked into the border. Keep the young wood trained in. Finish disbudding now in late houses, and see that the inside borders are moist.

Cucumbers.

In warm-houses the growth is now very rapid, and the stopping and tying of side shoots must have prompt and regular attention; but it adds to the general strength of the plants to leave the main stem unstopped till it is approaching the top of the house. Frequent top-dressing in small quantities of rich, turfy loam and old manure are essential to vigour and free bearing, and a moist atmosphere and a damp condition of the roots are necessary to perfect success.

Mushroom House.

A little salt in the water has an invigorating effect upon beds which have been some time in bearing. Buildings exposed to sunshine are not suitable for Mushrooms in summer. A north aspect is best for the Mushroom at that season.

Window Gardening.

Propagating, repotting, sowing seeds, tying, pinching young shoots, and sponging foliage should be included in the routine work now. Begonias are starting even in a cool place, and must be repotted. Bulbs which have done flowering should be planted in the garden.

Outdoor Garden.

Rock plants and Ferns will transplant safely now. It is sometimes necessary to rearrange rock plants, as some of the strong-growing things may require to be reduced in size. Very often, in making and planting new rockeries, common things are put in to fill up, and these, if not watched, may smother the better kinds. I like to see a good mass of colour on large rockeries, but in small gardens some sort of proportion should be kept in mind when planting. A mass of the common pink-flowered Heath is pretty, and when established gives no further trouble. Alyssum saxatile compactum and Arabis albida are showy now in masses. They are not rare or choice, but may be used where much space has to be covered inexpensively. A few days ago I saw a large mass of Saxifraga oppositifolia just budding for blossom on the top of a rockery that will be charming when the flowers expand. The rockery is an interesting feature, and it may be added to from time to time as required. Prepare the ground for Dahlias. In most places this will have been done. A little good loam and manure should be added to the site of each plant if the soil is not first-rate. The beds for Asters and Stocks should also have some extra attention given if very fine flowers are wanted. A good mass of the yellow-flowered Forsythia viridissima is very showy just now in the shrubbery. It comes in with Almonds, and makes a pretty contrast with the Pink Ribes.

Fruit Garden.

What an important thing shelter is to the fruit grower on a large scale! In a less degree it is important also to the small people who have only a few rods of ground, and in selecting sites for new fruit plantations this matter of shelter must be kept in mind. A very useful shelter may be got up quickly by planting somewhat thick Willow cuttings. They may be planted in alternate groups of the red and yellow-barked varieties to be an ornamental feature, and the produce will be worth something if cut when large enough for the basket-maker. Of course, Willows grow best in damp soil, but they make good growth in any fairly good soil. I have had large masses of the Golden Willow growing in sandy soil, which had been trenched up and manured. Melons will do well in hot-beds now if started right—*i.e.*, have a well-made bed, and are planted in good loam without any enrichment. Stimulants may be given later. Melons usually make growth enough without till the crop is set, and strong, robust plants do not set well till some of the vigour has been worked off. Start with the idea that Melons should not be shaded; if we begin to shade it is difficult to leave it off, and soft foliage will fall a prey to red-spider. It is best to have two plants in a light if the lights are of the ordinary size. Repot succession Pines and take suckers off old stools, and after dressing the bottoms pot firmly in 6-inch pots, plunging in a steady bottom-heat. This is a good time to plant new borders with young Vines. If the young plants have been kept cool they will only just be breaking into growth.

Vegetable Garden.

Marrow Peas, sown thinly now, will be ready for gathering from the middle of July till the end of the month, according to the climate of the district. In warm, sheltered borders a few dwarf French Beans may be planted. French Beans will be coming on now in pits. It will be unsafe to keep them in forcing-houses now, as they often introduce red-spider, and where a supply of early vegetables is required a number of pits or frames should be provided; so much may be done with these cheap glass structures. We might grow as good Lettuces as the French if our gardeners would make a greater use of cheap glass. Sow Basil and Sweet Marjoram in heat. If a small stock of Mint is planted at the foot of a south wall green shoots will be gathered there now, and later on a patch on the north side of the wall will yield green shoots for the summer. Early Potatoes, as they work through the soil, should be sheltered in some way. Earthing-up will be done if no other form of protection can be given. Early Turnips very often run to blossom, therefore sow in small quantities Snowball or the Strap-leaved Stone. The main crop of Carrots should be sown if not already in. Beet also may be sown now for early use, but a further sowing should be made of the long-rooted kinds at the end of the month or first week in May. Medium-sized are of more value than large ones. Sow a few more Leeks for transplanting.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from April 17th to April 24th.

Pricked off Asters, Stocks, Zinnias, Phlox Drummondi, and Marigolds. We want the plants to be as strong as possible when set out. Potted off Cyclamens from boxes. Sowed Chinese Primulas and a pinch of Cinerarias for early blooming. Pricked off seedling Begonias; shall grow on in heat and plant out in June. Sowed Cockscombs—both the old-fashioned sorts and plumosa. Pricked off Balsams. We shall have a bed of these planted thinly over a groundwork of yellow Tufted Pansies. The Pansies will be planted immediately, and places left for the Balsams when ready. A bed planted in this way last season was a great success, being something out of the common. The Balsams will be 2½ feet apart. Sowed Ne Plus Ultra Peas and Ne Plus Ultra and Canadian Wonder Dwarf French Beans; the French Beans were sown on a warm border. Turned out more plants to harden in cold frames. Chrysanthemums are being shifted into 6-inch pots as opportunity offers, taking the strongest plants first, placing in cold frames where plenty of ventilation can be given. Pricked off more early Celery; some of this will be used for flavouring when quite small. Sowed Vegetable Marrows and Ridge Cucumbers in pots in frames; the seeds soon germinate, and when hardened off and the weather settles earliest plants will be set out under handlights or otherwise protected. Sowed main crop of Scarlet Intermediate Carrot. Thinned down Carrots on hot-beds by drawing out the largest for use. Quite small Carrots when young can be used for soups. Sowed main crop of Beet. Put in cuttings of Sage, Thyme, and other herbs. Made a new bed of Mint. Spinach is sown between rows of Peas. Planted out Lettuce from seed-rows and sowed more seeds of Cos and Cabbage varieties. Planted more Gladioli and finished planting Hollyhocks and a few new Carnations which have been brought in. Put in more cuttings of Fuchsias, Bouvardias, and various stove plants. Shifted on Camellias. Put in cuttings of Her Majesty Pink to raise plants for forcing. They will be planted out and lifted in September. Potted off cuttings of winter-flowering Salvias, Eupatoriums, and Poinsettias. Tying down young wood in early Peach-house. Stopping and tying Cucumbers. This work comes often now, in the same way as work in vineries, Melon-houses, etc. Thinned Grapes in second house, consisting of Hamburghs, Buckland Sweetwater, and Madresfield Court. The last-named is a fine Grape when well done; should not be pinched too close, and the ventilation must be perfect. Made a new plantation of Violets.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

383—**Celestial Sweet Brier Rose.**—Has any reader heard of this kind? I should be much obliged for information about it, and where it may be obtained?—E.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

384—**Narcissus Codlins and Cream not true** *(Chepstow).*—This variety would not throw up flowers of Eggs and Bacon. You have got the bulbs mixed, or the wrong variety has been sent.

385—**Tomato failure** *(A Constant Reader).*—The Tomato-plants have had a check of some kind—probably sown too thick, kept too long in seed-pots; or from excess of cold and moisture, probably both.

386—**Tennis-lawn from seed** *(Hampshire).*—We have very little doubt it is a fungus of some kind and would like to see a portion. Dress with soot or wood-ashes; it can hardly be insufficient depth of soil in such marked and small patches.

387—**Treatment of Begonias** *(New Beginner).*—You need not fear about your Begonias yet. The treatment is fairly suitable, but we hope you gave them a sandy and peaty compost. If you can afford an additional 10 degs. of heat for a time so much the better.

388—**Artificial manure for Onions** *(E. W.).*—Use it freely, but, as to quantities, so much depends upon the soil, the plant, and the stage of growth. To destroy crickets, place some sweetened beer in saucers, with sticks for the insects to ascend, and this will attract them.

389—**Guano for Strawberries** *(A Constant Reader).*—Both guanos are of about equal strength. Give a slight dressing during a shower if possible, and use at the rate of 3 oz. to the square yard. Two dressings will be enough—one now, and another in three weeks' time.

390—**Plants for back of greenhouse** *(Inquirer).*—There are many subjects suitable. You could plant the Heliotropium (Cherry Pie), the Abutilons, Asparagus plumosus, Bougainvillea glabra, Clematis indivisa lobata, Habrothamnus elegans, or either the red or white Lapagerias.

391—**Dragon-plant unsatisfactory** *(A. C. W.).*—It is neither insect nor disease that is attacking your plant, but either drip from the roof of your conservatory, or sun burning through drops of water being upon the leaves, or, perhaps, acting as a lens while remaining upon the glass. More spots upon foliage are caused thus than many suppose.

392—**Treatment of Seakale** *(A. B.).*—You do not say if you have cut the Seakale. If you have, remove the pots at once, fork up the soil, adding manure if decayed and can be spared. The plants will need little further attention—only removal of flowers as they show—and well repay good supplies of liquid or fish-manure in wet weather.

393—**Book on table decorations** *(R. Soden).*—We do not know of a book on table decorations—at least, not of recent publication. We have with this issue of Gardening Illustrated commenced a short series of articles on the above subject. The whole subject is gone into thoroughly, and we have no doubt you will find the matter desired. Blending of colours and the uses of foliage—two important features—are especially considered.

394—**Treatment of Rhododendrons** (*E. R. T.*).—The Rhododendrons you name are quite hardy, and may be planted outside at any time in June. Keep them cool and fairly moist until that time. We would say plant out at once were it not that, being in pots, they are probably under cover, and so more forward than would be suitable for outside weather at present. Give a peaty soil or else a fibrous turf.

395—**Protecting orchard in spring** (*H.*)—Your list of fruit is a very good one, but we fear by covering as suggested you would not get the best results, and it is expensive. On the other hand, we think you will get a fair crop in district named if you pay attention to pruning and feeding. The trees will bloom late, and probably escape pest. Read "Week's Work" this week. There is a note on the subject.

396—**Fern with scales** (*Warren*).—The name of your Fern is Asplenium bulbiferum. It is generally called the New Zealand Fern, but is found in Australia and other countries. Your plant is slightly troubled with the common scale, and it is very difficult to kill without harm to the Fern. Touch the insects with a little insecticide and a soft brush. What you call rust is simply the spores forming on the underside of the fronds, and these are quite natural.

397—**Buying Chrysanthemums, etc.** (*C. B.*).—You can purchase Chrysanthemums at any time, and, if carefully packed and potted, they flower well. Celery would not give a good crop if planted later than the end of August or very early in September; but this depends very much upon the season and treatment. You can move Roses and perennials in September during some seasons; perennials vary so much, and you do not even hint at the class of subject you mean.

398—**Vines** (*Anxious*).—You need very little advice; your plans are so good. But we would not allow more than half-a-dozen bunches to a Vine this season, nor would we carry more than the main rod further up the house yet. This depends much upon the distance the Vines are apart. If only 6 feet, one cane at present is ample; if 8 feet or 10 feet, you may use two, but not three. Tapping the rod assists in distributing the pollen, and so often secures a more even set of fruit.

399—**Starting Tuberous-rooted Begonias** (*W. E M.*).—The conditions under which you are starting your tubers are all that could be desired. The only fault is the lack of moisture in your treatment. You have done right so far, but as the roots are emitted from the corms you should give water, just keeping the soil moist. Repot the plants when the roots work their way down the side of the pot, and before becoming too much entangled near the base. They must not be allowed to get potbound.

400—**Distance to leave seedlings apart** (*Lambeth*).—Leave six of Agrostis nebulosa, eight of A. pulchella, six of Eragrostis elegans, and ten to twelve of the Rhodanthe Manglesi. The first three are exceedingly pretty Grasses, and easily grown if you take care to supply water by standing the pots in a shallow pan, in preference to overhead supplies. When ripening they must be kept rather dry. The Rhodanthe needs the same treatment; but a little liquid-manure from the time the flower-buds show until they open is a great help.

401—**Culture of Amaryllis** (*E. Garnett*).—The name of the species forwarded is A. equestris, introduced to England many years ago. It has now very little value commercially. The small bulbs can be grown on until they reach the full size, when they will flower. There are so many fine varieties of Amaryllis now cultivated in gardens to be obtained at a cheap rate or that may readily be raised from seed, that such as A. equestris are not worth growing, except as botanical plants. During the growing period the plants require a hot-house temperature. After flowering they make up their growth for next season, and when growth is completed water is gradually withheld, no water being given for three months during winter. The bulbs are repotted and started again with heat and moisture in January.—J. D. E.

402—**Treatment of certain plants** (*Energetic*).—We name your specimens with pleasure, but what a mixture! From the hardy Larch (No. 4) to the stove creeper Ficus repens (No. 7). Nos. 1 and 2 can be propagated similar to the Cacti. No. 1 is the Candle-plant (Parmentiera cerifera); 3 is the Liquidambar; 5 is Chorozema, but which variety we are unable to decide; 6 we cannot name from the portion sent—it was in such bad condition; 8 is Habrothamnus elegans; 9, the Lemon-scented Verbena (Aloysia citriodora); 10, Acacia armata; 11, Pyrus or Cydonia japonica; 12 is unrecognisable. If you will forward a piece of growth and bloom of those we cannot be certain of from this consignment we will give you the names. They will succeed in the greenhouse, except the Cydonia, Liquidambar, and Larch, which are, of course, hardy trees. The Cydonia is very pleasing on a wall or as a bush. The Lemon-bush will want a sheltered place.

403—**Gloxinias in greenhouse**.—Can I raise Gloxinias from seed? If so, which is the best time of the year? Mine is a cold greenhouse?—Cyril.

*** *This is not a good subject for the cold-house.*

404—**Tulips and Crocuses after flowering.**—I wish to know the best way to keep Tulip and Crocus bulbs after they have done flowering? I kept them in brown paper bags last year, and it did not answer.—Francesca.

*** *Of course not; they probably got dried up. Lift them, or else turn out of pots when the foliage has died down, and then store in dry sand in a cool place until the planting season returns. If Tulips and Crocuses are in the open border they will stand safely all summer, provided you do not injure them by deep digging for other subjects.*

405—**Destroying crickets and woodlice in frame.**—Can you please inform me through your paper how I can get rid of woodlice and crickets from my frame, which I have erected against the wall of a bakehouse? The bottom of frame is of loose earth. Would it be better to make it solid? If so, what do you recommend for that purpose?—W. Ellis.

*** *Either concrete the bottom or make it firm with a hard layer (quite 6 inches) of fine coal-ash. Place pieces of Carrot or Potatoes in empty pots to attract the enemy. Beer and sugar in a saucer will catch the crickets. Place sticks for them to ascend.*

406—**Christmas Roses after flowering.**—Should Christmas Roses that have bloomed in pots in a cold-frame be still kept in pots, or planted out, as I shall want them in pots again another year? Also Bleeding Heart?—Anxious.

*** *Plunge the Christmas Roses in soil upon the shady side of a wall about the end of May. Do not put them out before—i.e., if you have forced them much. You can lift again when flower-crowns show next winter. You may plant out Bleeding Heart (Dielytra) when all fear of frost is over, or keep in pots.*

407—**Daffodil and Narcissus bulbs not flowering.**—I have groups of these (all hardy kinds) planted last November year in a south border. Last spring they flowered a little, but this spring have not flowered at all, though they have fine clumps of healthy-looking leaves. What should be done to them to secure flowers for next spring?—Abbey.

*** *We would lift them when ripened, and replant. Please say soil, and give a little more information when repeating query re Lilies.*

408—**Old Cyclamen-root.**—How should a very old Cyclamen-root be treated? Is it well to repot it, or to divide it? I have had mine 14 years, and it flowers abundantly; but the flowers are pale and small.—Jura.

*** *Yours is a remarkable crown to succeed so many years; but it cannot be of much use now, and if not for old acquaintance we would cut it away. Give a fresh compost of turfy loam, a little leaf-soil and sand, and, if you can, a little old mortar rubble. Do not divide.*

409—**Value of turf.**—Will you kindly advise me in your next week's issue the best way of making use of about four loads of turf? Will it be any good for lawns?—A Constant Reader.

*** *You do not say if the turf is green or has been stacked Grass side downward and become thoroughly rotted. Nor do you say if you intend to lay it as green turf or dress a lawn with turfy loam. The latter would be useful, but we would suggest you keep it for potting purposes—to grow Cucumbers, Marrows; anything, in fact, will thrive in well-rotted turf. You might spread some among the herbaceous subjects—the Roses, Ferns, etc.*

410—**Protecting seeds from slugs.**—All the hardy annuals that I sowed last year were eaten by slugs directly they appeared, notwithstanding that I sowed them in drills in a seed-bed and surrounded each drill with a line of lime. What should I do to protect this year's seeds? Would it do to sprinkle soot right over the seeds, or might it injure them?—Abbey.

*** *It is very evident that your ground is much infested with slugs or other insect foes. Thoroughly mix ½ gallon of soot to a square yard of your soil, not fearing to dig it up some foot or so deep. Do this at once, turn it up again in a week's time, and then sow. A slight dusting of soot overhead will not harm the seedlings, and is a great preventive against slugs. We fear your ground is very foul from this and other queries to hand.*

411—**Madonna Lilies not flowering.**—I have a group of these Lilies planted in a south border. This will be their third season, but neither last season nor the year before did they blossom well, and do not look as if they would do so this year. The bulbs were planted singly, but now they have spread into thick clumps with weak-looking flower-shoots that do not come to anything. A few of the bulbs appear to have remained single, and these have thrown up a good, healthy-looking flower-shoot.—Abbey.

*** *We cannot suggest a cause of failure or a remedy unless we know the soil and treatment. It is rather strange that some promise well and others not. We would carefully lift the worst clump and examine closely for any insect pest. Are they all in the same class of soil, or have you given some special treatment to either those that fail or succeed? Your query is too vague, and we would like to hear again.*

412—**Treatment of Azalea mollis.**—I have an Azalea, of which I have enclosed a bloom. It has grown up rather tall, and has thrown up one flowering stem with seven large blooms, like enclosed, in a cluster at the top. Ought I to prune it after flowering? It has a very nasty scent (to the leaves, I fancy). Is it unusual with this Azalea? I suppose it is Azalea mollis. What soil should I use for fringed Pelargoniums?—Dewdrop.

*** *Yes; your Azalea is A. mollis. We know of several who consider the foliage far from disagreeable in perfume. Do not prune it; a number of new growths will break from near the top. Turfy loam and leaf-soil, with a dash of coarse sand and bone-meal is a capital compost for Pelargoniums.*

413—**Manure-water.**—I read in your paper that when a plant is in bud and flower manure-water should be given. In another place I read that it should not be given unless the pot is full of roots. Now, I have plenty of plants in bud and in flower, but the pots cannot be full of roots as they have not long since been repotted (a fine Primula obconica is a striking example), and what I want to know is: Should a plant, only recently repotted into a size larger pot and now in flower, have manure-water, or not?—Early Riser.

*** *We are constantly endeavouring to point out that no soil not completely occupied by roots can benefit by applications of liquid-manure. These sodden and stagnate the compost unless taken up quickly. A hungry plant—i.e., one in full growth and which has somewhat exhausted the compost—will soon absorb such food, and reap great benefit thereby; but a plant cannot possibly have exhausted soil not permeated by its roots.*

414—**Cyclamens after flowering.**—About three months ago I bought two Cyclamen plants in bloom in very small pots. As they seemed pot-bound, I repotted at once, the result being they lost all their blooms and leaves. I now notice that they are beginning to shoot out again. Kindly give treatment. Cool greenhouse.—P. C. N.

*** *You should have left them in pots while in full bloom, and repotted again next July, when new growth was once more on the move. Stand them on a shelf, and do not afford much water until July, when they will be in active growth and soon push up more flowers. Your disturbing their roots was the cause of leaf and bloom dropping.*

415—**Rhododendrons for greenhouse.**—Will you tell me, please, the best greenhouse Rhododendrons for show in a cold greenhouse?—Cobbe.

*** *R. Dalhousianum, R. ciliatum, R. Aucklandi, R. campanulatum, R. Edgeworthi, and R. Duchess of Edinboro'.*

416—**Use of broken plaster.**—I have a quantity of broken plaster of Paris casts. Would these, pulverised, serve the same purpose as a manurial agent as lime?—Artistic.

*** *We think not, and, as lime is so cheap, would certainly not apply what is little better than the hardest stone.*

417—**Burning Brussels Sprouts stems.**—Hearing a gardener say that Brussels Sprouts stems can be rotted in six weeks so that they can be crumbled between the finger and thumb and be as good for the garden as farmyard-manure, will you kindly say through Gardening how it can be done?—T. W.

*** *We have no knowledge of the subject in question. Burning would doubtless be the best method.*

418—**Nectarine-leaves.**—Kindly inform me what is the matter with the enclosed Nectarine-leaves? I have failed to discover any animal life on them.—W. W. Lloyd.

*** *Your trees have got what is termed the Peach curl—the effect of cold east winds on the tender foliage. We also think there was a little black-fly, but are not sure. Look for latter, and dust with Tobacco-powder. Remove the curled leaves.*

419—**Naturalising Bracken.**—Could you kindly tell me of any simple way of naturalising common Bracken in plantations? Is it possible to sow it? If so, where could I obtain the seed? Bracken grows freely in the neighbouring hedges, but I have none in my own ground. I cannot find Bracken-seed mentioned in any seedsman's catalogue.—L. A. M. T.

*** *The best way to naturalise Bracken is to dig up in early spring, autumn, or winter rather deep sods where the Bracken is. There is no doubt that this is by far the best way, because very often Bracken is introduced into gardens in the peat and loam got for potting.*

420—**Clematis Jackmani not growing.**—I planted a Clematis Jackmani in a little border in my greenhouse last spring, but, either because I did not break up the ball of soil or because the border is undermined by rats or moles, it never grew. It did not die, and this year I have planted it in an 8-inch pot, where it is growing nicely. Will this pot be large enough, or shall I repot it later on? Nothing will grow in that border, and it always seems more or less hollow. I lost a fine Camellia there some years ago. I have no other border in the greenhouse except under the stage, and no wall available outside.—C. B.

*** *We would endeavour to stop the rats or moles if these are the cause of your hollow border. The Clematis will flower well in an 8-inch pot if you feed with weak liquid-manure when the growth is some 5 feet or 6 feet long. Give the manure-water weak, but in liberal quantities, once a week.*

421—**Should Petunias be cut down?**—Kindly inform me if double white Petunia plants ought to be cut down now? I was told not to touch them in the autumn, and they now are nearly 4 feet high, and, I am afraid, will produce more leaf than flower.—A. C. W.

*** *We should trim them back at once, not cutting them down to less than 2 feet, and stopping the first breaks of new growth. This will give you a bushy plant and a large quantity of bloom. Probably such large plants as yours need a shift into larger pots; if so, give a rich turfy loam, with a little leaf-soil and a dash of sharp sand.*

422—**Taking Genista, etc., cuttings.**—Can I take cuttings of Genista fragrans (greenhouse Laburnum) and Deutzia gracilis? If so, please say how and when?—C. B.

*** *An illustrated article upon these will shortly appear in our columns, when your query will be more fully answered than could be the case among our correspondence*

423—**Tuberoses**.—Will some reader kindly tell me the treatment of above, and if they will be of service another year? I have had six potted three weeks in 5-inch pots, in a temperature of 55 degs. to 65 degs. I have watered occasionally, but not overdone it. They have not yet commenced growth.—A. E. Ball.

*** *Tuberoses, when forced, are of little service a second season. They need a rather small pot and very firm potting in a sandy loam. Place them in the hottest place you have and new growth will soon commence. When this occurs increase the water supply. They are not at all difficult subjects, but often delay in making new growth unless forced to it by a strong bottom-heat. Some of the best we ever had were stood upon the hot-water pipe adjoining a wall, but not too close to the boiler end.*

424—**Sweet Pea seeds eaten by mice.**—I wish for information as regards Sweet Pea seeds—what care to be taken to prevent their being eaten by mice? Mine were sown in a hothouse.—C. L.

*** *Of course you must keep mice away if troubled with them. A single mouse often does a great deal of havoc in a greenhouse or frame, and if it found your Peas they would soon be cleared out. Protect them with wire guards and endeavour to trap the intruder; that is the only remedy.*

425—**Water Melons.**—I shall be much obliged if you will give me particulars as to the treatment of Water Melons. Do they require a frame, or can they be grown like Marrows?—H. H.

*** *Water Melons do not thrive well in this country; there is not enough sun-heat, and in frames the plants draw up too much and go to leaf. They may do in a very hot summer in the open.*

426—**Use of bones.**—I have a sack of ½-inch bones by me which I should like to utilise. My soil is rather heavy (not clay). I mix one part sand to three of ground (not sea-sand). I find it improves it a great deal. In what proportions should I mix the bones—I mean for general potting use (no delicate plants)? I have no manure to mix with my ground. An answer will oblige.—Jersey.

*** *We would only advise using the bones for strong-growing plants in large pots—say, 1 lb. to bushel of soil. Vines, Tomatoes, Figs, Cucumbers, and Melons do well with the food named in your heavy soil.*

427—**Treatment of Palm.**—I have a large Palm in my drawing-room; no gas. What is the proper treatment, and what artificial manure can I give? My Palms die after a time. They are sponged once a fortnight and carefully watered. The last grew well up to a certain time, then died. The gardener from whom I bought it says they exhaust the soil, and there is no remedy but to buy another. My present one cost £5, and I want it to live. It looks in perfect health now.—Cottesmore Gardens.

*** *You ought to be able to keep your Palm, but this depends upon whether a stove or greenhouse variety. Five pounds is a lot to pay for a Palm that does not last a long time; such a sum should purchase one of the very best and largest suitable for the dwelling-house. You do not say what sized pot it occupies, but a dressing of artificial manure, a tablespoonful at a time, at fortnightly intervals for a couple of months may do good. Stir over the surface before dressing, and just cover with fresh earth. We cannot give precise information because you do not say the variety nor the size of pot.*

428—**Building lean-to greenhouse.**—I have recently come into possession of a small garden at the back of my house, and wish to build an unheated lean-to greenhouse. The situation is such that I could build one 15 feet long by 7 feet or 8 feet wide, facing east; or one 9 feet long and 10 feet or 11 feet wide, facing south. I am inclined to the former as being a more shapely house and more convenient in many ways, but am told that facing east is not a good position, although the sun is there early in the morning. I should be glad of advice in your paper. And could Tomatoes be grown or a Rose planted?—Stonehouse.

*** *There is little choice. If you lose the morning sun by having a house facing south you get too much glare at mid-day. We should build the house facing east, as you say it will be more convenient in many ways. Yes, you can grow both Tomatoes and Roses as well as the usual run of greenhouse plants.*

429—**Roses in place of fruit-trees.**—I have about 50 yards of wire, on which espalier Pear-trees have been grown for many years, but they never bear satisfactory crops, although root-pruning under an experienced gardener has been tried. The wires run nearly due north and south, and the situation is much exposed to wind, which, I think, must be the cause of the failure. I think of doing away with the Pear-trees and planting climbing Roses, Clematises, etc., if you think that they would succeed in that situation.—R. L. N.

*** *Yes; the trees you name would do well, but would need some fresh soil round the roots.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Major.*—King of Violets, a dark indigo-blue that is very striking.——*E. Bellows.*—One of the Leopard's-bane (Doronicum plantagineum). —— *Corkonian.*—You sent too many; six specimens is all we name at one time. We, however, name the following for you, but of the others you must send fertile fronds: 1, Pteris cretica cristata; 2, Pteris cretica; 3, P. serrulata; 5, P. serrulata cristata; 7, Adiantum cuneatum; 9, Asplenium bulbiferum; 12, Cyrtomium falcatum; 13, Pteris cretica albo-lineata; 16, Lycodium scandens.——*F. B. F.*—The green plant is the Mossy Rockfoil (Saxifraga hypnoides). You will find an illustration of it in Gardening, April 3, p. 61. The other plant is Streptosolen Jamesoni. ——*H. M. B.*—Sparmannia africana. —— *Anxious.*—1, Double Jew's Mallow (Kerria japonica fl.-pl.); 2, Apparently Virginian Creeper (Ampelopsis) of some kind, but kindly send leaf; 3, Cydonia (Pyrus) japonica; 4, Myrsiphyllum asparagoides; 6, Genista fragrans; 7, Abutilon vexillarium variegatum. Others we failed to name. We must remind you when you send again that not more than six specimens must be sent at one time.——*Armagh.*—Unfortunately, the flowers had quite faded on arrival. You must pack them better another time, putting a little damp Moss round the stems.——*Miss M. Vining.*—1, Adiantum formosum; 2, Athyrium Goringianum tricolor; 3, Nephrolepis acuta; 4, Pellæa rotundifolia; 5, Asplenium flabellifolium; 6, Cyrtomium caryotideum; 7, Selaginella Wildenovi.—— *D. T.*—1, Dendrobium nobile; 2 and 3, We are not quite sure of; the flowers were much faded, but they are apparently the same, 3 being from a weaker plant, and are named D. thyrsiflorum; 4, D. chrysanthum. —— *K. Coldridge.*—Fritillaria pyrenaica.

Names of fruits.—*Russet.*—1, Keddlestone Pippin; 2, Cox's Orange Pippin; 3, Wellington; 4, Annie Elizabeth.

Catalogue received.—*Farm Seeds.*—Messrs. Toogood and Sons, Southampton.

Auriculas from Daventry.—A very charming selection of border kinds; the colours are rich and beautiful, and the flowers of unusually bold form. They were sent by Mr. Bird, of High-street, Daventry.

BEES.

Starting Bee-keeping (*Rob Roy*).—You would find Bee-keeping pay you very well, especially as White Clover abounds in your district. There is always a demand for pure honey, and although your being so far from a large town is a drawback to the sale of the produce of your hives, still you would be pretty sure to find customers for your honey if you advertised it. The cost of starting Bee-keeping would, of course, depend upon the number of hives you would wish to begin with. You would, however, find it good policy to start with two or three hives only, and gradually increase your stock as you gained experience in the management of Bees. As to cost, much, again, depends upon what kind of hive you use. Although the bar-frame hive is far in advance of the old-fashioned straw skep, its first cost is a heavy item in starting an apiary, although one who is anything of a carpenter can make his own hives, having bought one as a pattern to work from. Bar-frame hives cost from 7s. 6d. upwards—10s. will buy a very complete, useful hive that will last many years. Your best plan would be to procure stocks of Bees in straw skeps (these would cost 12s. to 15s. each), and put the swarms from these stocks into frame hives. If, however, you cannot procure Bees near home, it would be well to buy swarms later on, as these travel better than stock hives, provided they are sent on before they build combs in their skep. If you decided to keep your Bees in straw hives these should be of large size and flat topped. Upon these you could work crates of section-boxes, in which the Bees would store their surplus honey (passing through the hole in the top of the hive) in beautiful form. These section-boxes hold just 1 lb. of honey each, and, being of very inviting appearance, sell readily. Section-boxes are sold in the flat at about 2s. 6d. per 100; having mortice and tenon arrangement at the ends, and grooves cut nearly through the wood, they can be easily folded up to form a square frame. These frames or boxes have to be furnished with small strips of comb foundation as a starter and guide to the Bees to build from the centre. Thin strips of wood are placed between each row of sections to ensure flatness and even thickness of the combs, so that they can be easily packed on completion. Well-filled section-boxes of white comb honey are far superior in appearance for the table to extracted honey, but if you wish to work for the latter you will find the frame-hives of great advantage, as with these the combs can be removed as filled by the Bees, the honey extracted, and the empty combs returned to the hive to be refilled. In selecting stocks of Bees they may be judged to be in a prosperous and healthy condition if large quantities of pollen are being stored. Pollen is carried into the hive upon the hind legs of the Bees in the form of little balls of various shades of yellow, and is used in the rearing of brood. Upon examining the internal state of affairs, the combs should be found of a light colour and free from mould, and built straight, reaching down to the floor board of the skep, or to the bottom bars of frames. The hive should contain a large number of Bees, as well as a quantity of brood in various stages of development, and, at least, 6 lb. or 8 lb. of honey.—S. S. G.

POULTRY.

THE SITTING HEN.

On a hen becoming "broody," she utters a peculiar cluck, ruffles her feathers, remains upon her nest, if it contains eggs, or wanders about in an impatient manner searching out a suitable spot for sitting. Before giving an untried hen a full sitting of eggs she should be allowed to sit for a few days upon a few chalk eggs as a trial, when if she be found to sit closely, they should be removed, and the batch for hatching introduced. The number of eggs should be eleven or thirteen; a Cochin hen will, however, cover fifteen very easily. They should not be more than a fortnight old, as the fresher the eggs are the stronger the chickens will be. The best broods are always obtainable from nests made upon the ground, as the damp arising therefrom materially assists in incubation. When not so placed it is necessary to sprinkle the eggs from time to time with tepid water, otherwise the inner membrane of the egg will sometimes become so dry and hard that the chicken cannot break through it at the proper period, and so perishes. The nest should be shallow that the hen may not have to jump down upon the eggs, and as nearly flat at the bottom as possible, and of such a size that the hen will just fill it. The best materials for the nest are straw, cut into short lengths, Moss, dry Grass, or Heather. If boxes are used they should be partly filled with sand, coal-ashes, or dry earth, placed upon a turf of Grass. The eggs can be placed under the hen without removing her from the nest, if they are slipped in one by one, after the trial eggs have been removed. This is safer than taking the hen from the nest, as in her haste to return there is a risk of some of the eggs becoming cracked. The hen requires to be fed once a day, the feeding taking place at the same hour each day, but she should not be allowed to remain away from the nest more than twenty minutes. The best food is Maize, being heat-forming and sustaining; but if during the time of sitting the hen becomes tired of Maize, a change of food must be made to tempt the appetite, as it is very necessary that the heat of the body be kept up. A dust-bath should be provided, and plenty of fresh water for drinking. During the absence of the hen from the nest the eggs should be examined, and if any should have become broken they must be removed, and any that have become dirty or sticky must be carefully washed with a piece of flannel dipped in warm water and dried before being replaced.

The hen sits for twenty-one days, at about which time the chickens leave the shell, and being provided by nature with food to last them twenty-four hours, need no feeding until the expiration of that time. Should any of the eggs remain unchipped when most have hatched, they can be tested by placing them in warm water; those containing chickens will float, while the bad ones will immediately sink to the bottom of the water. When all are hatched they should be removed from the nest and placed in a flat-bottomed basket or coop. For the first two days they should be fed on hard-boiled eggs, finely-chopped, mixed with stale bread-crumbs. They should get five or six meals a day for the first fortnight, gradually reducing the meals to three a day by the time they are three months old. After the first two days they may have Oatmeal, Groats, Wheat, Rice, and a little underdone lean meat, minced fine, should be given daily to the brood till they are about three weeks old. As soon as the hen leaves the nest she should have a good feed of corn and a dust-bath, and then be cooped with her chickens, the coop being placed in a dry, warm outhouse if the weather be cold or wet, but in fine weather the coop may be placed out in sun on a dry gravel-path or Grass-plot, with food and water within reach. The best kind of coop is that open only in front, being about 3 feet square, and having a gabled roof covered with felt. It should have no bottom to it, but be placed upon dry earth or ashes an inch or two deep. S. S. G.

BIRDS.

Death of Budgerigar (*H. V. Marony*).—The bird sent for examination was crop-bound. This is caused in most cases through an unlimited quantity of food being supplied after the bird has been fasting for some time. It is, unfortunately, no uncommon thing for a bird to be left without food for a long time through forgetfulness on the part of the owner, causing it to become so ravenous that when food is offered it fills its crop to repletion, and as the seeds swell the crop becomes so distended as to render it unable to fulfil its part in preparing the contents for digestion in the gizzard, and a stoppage ensues. In some places a little Castor-oil will give relief, but where the stoppage has existed for some time, the only thing that can be done is to make a small incision through the outer skin, and also through the covering of the crop, and gently squeeze out the contents. In making the incisions care has to be taken to avoid all blood-vessels, and after the removal of its contents the crop must be carefully washed out with warm water by means of a syringe. This, although a somewhat delicate operation for the amateur to undertake, is not attended with so much risk as might appear at first sight. You have evidently been giving your bird too large a proportion of Canary-seed; this and Millet should be supplied in about equal parts.

Is oil-stove injurious to Canaries? (*F. M. B.*).—Not if the birds are kept as far as possible away from it, and it does not smell. We prefer, however, to keep birds in a more even temperature, and not where oil-stoves are present. Everything depends upon how you manage the stove.

GARDEN AND PLANT PHOTOGRAPHS, 1897.

The Editor of The Garden and Gardening Illustrated announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—Country Houses and Flower Gardens.—A prize of Ten Guineas, and a Second Prize of Five Guineas, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—Flowering Plants.—A prize of Six Guineas, and a Second Prize of Three Guineas, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—Borders, Groups of Hardy Plants, Ferneries, Rock and Water Gardens.—A prize of Five Guineas, and a Second Prize of Three Guineas for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—Lawns, Old Orchards, Wild Gardens, Grass Walks, and Picturesque Drives.—A prize of Six Guineas, and a Second Prize of Three Guineas for the best ten most varied and distinct views of lawns and lawn trees; evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—Best Garden Fruits.—A prize of Five Guineas, and a Second Prize of £2 10s. for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—Best Vegetables.—A prize of Five Guineas and a Second Prize of Two Guineas for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—Cut Flowers, Table Decorations, etc.—A prize of Five Guineas for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—Vases, Fountains, Garden Houses, etc.—A prize of Five Guineas for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until the last day in October, 1897.

What to avoid.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

First.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

Second.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

Third.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

NOTICE TO ADVERTISERS.

In consequence of the Easter Holidays we shall be obliged to go to press early with the next number of Gardening Illustrated dated April 24. Orders should reach us as early as possible in the week preceding to insure insertion. No advertisement intended for that issue can be received, altered, or stopped after first post on Thursday, the 15th April.

ZONAL GERANIUMS.—Singles, doubles, or mixed, by Pearson and other celebrated raisers. All very choice, handsome, healthy, and well rooted, correctly named. 12 varieties, 2s. 6d.; 24, 4s., free.—CHAS. MORFETT, Robertsbridge, Sussex.

IVY-LEAF GERANIUMS (doubles).—The newest and best that have been sent out. Healthy and well rooted, correctly named. 12 varieties, 2s. 6d.; 24, 4s., free.—CHAS MORFETT, Robertsbridge, Sussex.

COLEUS! COLEUS! COLEUS! (a speciality for 24 years).—Strong, healthy, well-rooted cuttings of all the newest and best sorts, nearly 100 correctly named varieties. List sent. 12 varieties for exhibition or decoration, 2s. 6d.; 24 varieties, 4s.; 48 varieties, 6s. 6d. Sander's set of six, very handsome and distinct varieties, 1s. 9d. The Royal Set—namely, Duke of York, Duchess of York, Prince George of York, quite distinct, good habit, and splendid colour, 2s. the set. All free. Cash only.—CHARLES MORFETT, Robertsbridge, Sussex.

NOTICE.—The best plant for edging is the Perennial Forget-me-not (Myosotis alpestris); once planted lasts a lifetime. Strong plants, full of buds, 100, 1s. 6d.; 200, 2s. 6d.; 500, 5s., free.—LEIGH, Florist, Broughton, Hants.

4 AMPELOPSIS VEITCHI, self clings, 2-year-old plants, 1s. 6d.; 12 for 3s. 6d. 12 Double Fuchsias, flowers large as egg-cups, 2s., car. paid.—W. BATEMAN, Rose Grower, Compton Bishop, Axbridge.

NEW ZONALS, PEARSON'S '95 & '96, 6 fine sorts, 3s. Chrysanthemums, Calvat's 1896 set, 34 grand sorts, 18s., free.—A. T. WILLMOT, Withycombe, Exmouth.

CŒLOGYNE CRISTATA.—Well grown and cheap. Plants with 25 bulbs, 2s.; stronger, 65 bulbs, 5s.; 100 to 150 bulbs, with spikes, 7s. 6d. to 12s. 6d. Trentham variety, later flowering and larger spikes.—TRUSTEES late J. STEVENSON, Timperley, Cheshire.

LILIES of the Valley.—Flowering 3-year-old crowns, 1s. 6d. 100, free. Sweet climbing Honeysuckles, 1s. 3d., doz., free.—A. SYMONDS, 65, East-st., Horncastle

NEW CHRYSANTHEMUMS.—Being overstocked will send 25 distinct vars., 2s. 6d., correctly named. Purchasers wanting new vars. of '94, '95, and '95 will not again have such an opportunity after stock is sold.—H. WOOLMAN, Acock's-green, Birmingham.

HARDY CYCLAMENS, 12, 2s.; Perennial Gaillardias, 12, 1s. 6d.; Red Japan Anemone, 4, 1s. 6d.; Iceland Poppies, varied colours, 20, 1s. 6d.; Hybrid Aquilegias, 12, 1s. 6d.; Violet Wellsiana, finest outdoor Violet, 6, 1s. 6d.; Giant Trimardeau Pansies, 20, 1s. 6d.—J. CORNHILL, Byfleet, Surrey.

GERANIUMS, Autumn-struck.—Scarlet Vesuvius, 1s. 3d. doz.; 7s. 100. John Gibbons, 1s. 9d. doz.; 10s. 100. Pink and Silverleaf, 1s. 8d doz.; 10s. 100. Ivy Geraniums, Variegated and Double Pink, 1s. 6d. doz.; 8s. 100. Free cash with order.—C. ROFE, White-hill, Crowborough, Sussex.

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AIR PURIFIER.—EUCALYPTUS GLOBULUS (Fever-plant). Beautiful blue-green foliage. Easy to grow. Should be in every room—to rid it of flies and microbes. 6 plants, 1s., free.—Mrs. BANGER, Southwick, Brighton.

CHARMING HARDY CLIMBER.—"Calystegia pubescens," a double variety of American Bellbine, beautiful pink blossom, double as a Rose; Calystegia rosea, a lovely pink Bellflower; and Calystegia alba, the purest white, of enormous size. Two roots of each of these useful and beautiful climbers; 6 roots, 1s., free, with instructions.—Mrs. BANGER, Southwick Brighton.

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Tipton, Staffs., 5th April, 1897.—"The Dahlias you sent me last year were the talk of our neighbourhood.—J. J."

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100 Celery plants, grand stuff for exhibition	1 6
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Fine Red Beet, 1s. 6d. lb.; 2d. oz. Early White Broccoli, 3s. lb; 4d. oz. Fine Brussels Sprouts, 1s. 6d. lb.; 2d. oz. Curled Kale, 1s. 6d. lb.; 2d. oz. Daniel's Defiance Cabbage, 1s. 6d. lb.; 2d. oz. Drumhead Savoy, 1s. 6d. lb.; 2d. oz. James' Carrot, 1s. lb.; 2d. oz. Long Prickly Cucumber, 5s. 6d. lb.; 6d. oz. White Cos Lettuce, 3s. lb.; 4d. oz. White Spanish Onion, 1s. 6d lb.; 3d. oz. Fine Curled Parsley, 8d. lb.; 2d. oz. Hollow Crown Parsnip, 6d. lb.; 2d. oz. White Stone Turnip, 8d. lb.; 2d. oz. Long White Marrow, 3s. lb.; 4d. oz. Special quotations to large growers. All leading sorts of Vegetable and Flower Seeds can be supplied at equally low rates. Catalogues free on application. Orders value 5s. post free.—Z. COLEMAN, Seed Merchant, High-street, Sandwich, Kent.

12 CARNATIONS: Mrs. Wilfrid, Duchess of Fife, Gloire de Nancy, H. K. Hales, Mrs. Muir, Pride of Penshurst, Redbraes, Salamander, Mrs Reynolds Hole, Raby Castle, Paul Engleheart, and Rushden Beauty, 4s. 12 PINKS: Ernest Ladhams, Earl of Essex, Her Majesty, Mrs. Pettifer, Modesty, Magnum Bonum, Paddington, Snowflake, Mr. George, Anne Boleyn, Mrs. Sinkins, and Alice Lee, 3s. 12 PHLOXES: Coccineum, David Syme, Harrisoni, Progress, Queen of Whites, Edina, Plutus, Princess Royal Aurantiacus, Unique, White Lady, and Mme. Turenne, 3s. Two 3 sets for 9s., all car. free.—J. LANGFORD, Florist, Withington Lane.

YELLOW MARGUERITE ETOILE D'OR, white ditto, large flower, 1s. doz.; 6s, 100; 50s. 1,000. Chrysanths, 2s. 6d. doz.; 20s. 100. Double Ivy Geraniums, 1s. doz. Primrose, Violet, Cowslip roots, 1s. 3d. 100, carriage paid.—WILLIAMS, Fulking, Beeding, Sussex.

DOUBLE WHITE ROCKETS, Heuchera, Lobelia cardinalis, dble. white and coloured Pyrethrums, Mrs. Sinkins Pink, 1s. 6d. doz. 18 perennials, including above, nmd., 1s. 6d., free.—REYNOLDS, Owston Ferry, Doncaster.

GARDENING ILLUSTRATED.

No. 946.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* APRIL 24, 1897.

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THE VALUE OF TOP-DRESSING.

By the aid of top-dressings of manure and other things, impoverished soil may be enriched, and very weak, and therefore often barren, fruit-trees may be brought again into fertility. When the roots of plants and trees are down in an uncongenial sub-soil, top-dressings will not bring them to the surface, but they will induce the formation of young fibres there, and thus improve the state of the tree or plant, as compared with what it was when its sustenance was almost wholly derived from the deeply-placed or "tap" roots. Top-dressings should always be placed in contact with some of the roots, for unless this is effected they are but of little value. Roots have a tendency to go down and embed themselves in the richest soil, but I have never found any of them pushing upwards towards a rich top dressing—that is, if they have had to pass through a stratum of matter not suitable to their growth. It is not an uncommon thing, when turning out plants from pots which have been top dressed some time previously, to find the top-dressing fall clean away from the old ball of earth. This is the result of not incorporating it thoroughly with the old soil, and of not putting the mixture well round the roots. The result is the same in the case of fruit-trees, and in all other instances in which top-dressing is not properly done. Of course, in these cases, when the material used is very rich, much of the fertilising principle is washed down amongst the lower roots, but the advantages which attend a free and copious surface-rooting are lost. Many plants are grown one year in pots, from which they cannot be removed the next. Vines, for instance, potted and grown on in their fruiting pots this season, must be kept in the same pots next year until they fruit. A quantity of loose, exhausted soil is generally found on the surface at the end of the season, and this should not be permitted to remain. On the contrary, it should be removed and a good top-dressing put in its place, and in a position where the roots can take possession of and utilise it when it is most needed. Melons and Cucumbers are much benefited by top-dressing. When the latter have produced their first crop a second quite equal to the first may be obtained by adding a good top-dressing to the roots of the old plants, an application which renews their vigour and gives them a further lease of fruitful life. Probably no plant will recognise and quickly repay a top-dressing better than an old exhausted Peach or Nectarine-tree. I have seen old trees of these and other kinds immensely improved by this treatment and becoming both sturdy in growth and very fruitful. Such trees, however, should not be top-dressed every year, which would too much disturb their roots, as these ought to be near the surface.

Flowering plants in pots are benefited by top-dressing. Large plants of Camellias very firmly and fully rooted into pots or tubs, and whose life would be endangered by a complete shift, may, by a suitable surfacing, have years of vigorous life and usefulness added to their career, which would otherwise be passed in drooping decline, and Azaleas may be benefited in the same way. Small, quick-growing plants are seldom top-dressed; they can generally be conveniently repotted, when no surface dressing is needed. With cottagers and amateurs generally the repotting of their window plants is often considered to be a dangerous operation, and many of these plants are allowed to dwindle for years in the same soil and pots. Those who are afraid to pot annually should substitute a thorough top-dressing, and if the drainage below be efficient they will soon be repaid for their trouble. There are not a great many vegetables that need top-dressing at any time. Earthing-up may be considered as a form of top-dressing; it induces surface-rooting in many plants. Herbs are not generally replanted every year, and their productiveness is greatly enhanced by an annual spring top-dressing. In conclusion, I may state that one of the greatest advantages of the method of top-dressing is that it may be applied at any time of the year with benefit to the plants; but, generally speaking, the best time to do this is early in the season, before growth is far advanced, in order that it may be made available to assist the development in every way of the plants so treated. H. B.

SOME CHOICE POMPON DAHLIAS.

In this section, as well as in the Cactus and show classes, the skill of the hybridiser is very apparent. Every year brings us new kinds, some good, whilst others are useless. Still, vast improvements have taken place, and many of the old standard varieties are now eclipsed, whether for exhibition or garden decoration. It is folly to grow inferior kinds, as too many do, for poor sorts take up quite as much space, and require as much labour to grow them as good ones. As a decorative garden plant the Pompon Dahlia is invaluable because it is free and blooms continuously over a long season, whilst the flowers are excellent for cutting for bouquets, buttonholes, etc. The following kinds I grow, and can therefore testify to their merit:

Bacchus, the best scarlet extant. Two years ago I could have cut each week during summer a great many flowers, all of exhibition merit; in fact, I took particular notice, and found that it never produced a flower with a green eye or in the least degree a hollow-centred one. This, I may say, is a unique variety.

Sunshine (new) is also a grand kind, taller in habit, and with rather larger flowers of a different shade and shape. These two kinds are much better than Scarlet Gem.

Iona is a deep yellow and very fine flower.

Sovereign, too, is a beautiful variety.

Florence Woodland is a yellow with scarlet edges, a lovely and most telling flower, yet not quite so deep a flower as Rowena, which has red edges, but blooms more continuously. These two are quite distinct in habit and flowers, whilst either of them are ahead of such good varieties as Whisper, Rosalie, etc.

George Brinckman, for exhibition and decoration, White Aster and Lady Blanche, for cutting and decoration, are the best of the white-flowered kinds.

Fair Helen is one of the finest of the white-tinted flowers, and another good kind is Model.

In place of Darkness we must now have recourse to Captain Boyton, a perfect flower and a real gem. Midnight, too, is grand, and quite distinct from the former.

Hector, dark, and Achilles, light, are the cream of the lilac shaded flowers.

Madge is one of the most beautiful, of a soft crimson, tipped white, of dwarf habit. Irene is also excellent, being purple-tipped and white.

For orange shades none can excel Phœbe, but Ariel is very good. Two first-rate kinds are Tommy Keith and Little Sweetheart, both red, tipped white, yet quite distinct, whilst for perfectly arranged petals Sunny Daybreak is a model. The colour is apricot, edged with red. This variety does not turn its petals quite so near the stem as one could wish, yet it is most beautiful, and may do better this season.

Of crimson we have Crimson Beauty and Little Bobby, both good. The last-mentioned is a very old kind, but still very good. E. F. Junker and Little Frank are splendid as amber-coloured kinds. Lilian is a very soft primrose, heavily edged with peach; very beautiful.

There are many other excellent kinds, but those enumerated comprise most of the best sorts of proved merit.

Many people complain of their inability to keep the tubers during the winter months. I experience no difficulty with most kinds. I simply place them under the greenhouse bench, alongside the hot-water pipes, covering the tubers with dry sand. They must be kept perfectly dry, however, and not too near the pipes. A few sorts I am unable to keep in this way, so strike side shoots as early in the summer as possible, and grow these on in pots until frost comes. I then simply stand the pots without disturbing their occupants under the stage until spring, when they are watered and started into growth. These make the best of plants.

J. Hesford, *Recreation Ground, Eccles.*

PROPAGATING TREE-CARNATIONS BY SEED AND CUTTINGS.

Sow the seed in March, and as soon as it vegetates in the hotbed, which will be in a week or so, and the seed-leaves are fully formed, prick the plants out into boxes about 3 inches asunder, inure the plants to cold frames, and plant them out in a border of good soil in May. The plants will be ready to pot up in August into their flowering pots, and a splendid display of bloom will be obtained during the winter and spring months. When the plants are lifted from the open ground in August they may be put into an ordinary garden frame and be shaded for a few days from bright sunshine, and when they are established they will do best in the open air until the end of September, when they may be removed into an airy greenhouse. In order to obtain clean, well-developed flowers in December, January, and February, artificial heat is needed, and the plants should be placed as near as possible to the roof glass. I find they do well with a minimum temperature of 50 degs. to 55 degs., and the

atmosphere should be rather dry, with as much ventilation as the season of the year will admit of. Slips or cuttings should be put in at once of the named varieties, and at this early season of the year they do better in a propagating-house than in a garden frame. If we could depend upon the weather being mild, a garden frame would do very well indeed, placed over a hot-bed, of course, but severe frost may set in, and in that case cuttings or slips in a frame do not succeed nearly so well. If there is no frame in the propagating-house, a few squares of glass over the cuttings will be sufficient to arrest too rapid evaporation, and will prevent their shrivelling. Bottom-heat is of course necessary to produce fairly rapid root action. In two or three weeks growth will take place on those that have formed roots, and they must be taken out and potted off singly into small pots, using good loam, leaf-mould, a little decayed manure, and coarse sand. When young plants are produced so early in the year as January, gardeners must understand that some care is necessary in the process of inuring them to a cool atmosphere, and this must be done with as little delay as possible, for Carnations never succeed well in the close atmosphere of a propagating-house. They must first become established in the warm house, and I always place the plants on a shelf near the roof glass; from here they are removed to a greenhouse from which frost is excluded, and afterwards they are placed in cold frames, to be removed into the open air about the end of May. Such early propagated plants will begin to flower in September, and a succession of bloom may be kept up all through the winter and until the border varieties are in flower. The last batch of slips may be put in during the months of April and May. As the slips are put in where the atmosphere is close and the growing plants are also there for some time, green-fly is almost sure to attack them, and in that case the best way to remove it is by fumigating with Tobacco-smoke. I have seen gardeners rubbing them off with their fingers; this is a great mistake, as the sticky juice of their bodies is injurious to the leaves of the plants. J.

CHRYSANTHEMUMS.

STOPPING AND TIMING CHRYSANTHEMUM BLOOMS.

HINTS FOR AMATEURS.

The time flower-buds form at the points of the shoots is a matter of great importance, not only to the cultivator whose object is exhibiting the blossoms, but to the grower generally. It makes a difference of large or small flowers with regard to many varieties, and even causes some to produce almost single blooms if they appear at an unsuitable date, which would otherwise be full, deep, handsome specimens.

Thus we find it no unusual thing for those who are not specially acquainted with the varieties of Chrysanthemums to note fine examples at shows, and, after inspecting their own at home, fancy they have not obtained the sorts true to name. The time buds are set, too, has a marked effect on the colours of the flower. A deep crimson sort will come dingy and dull, those of pink shades will have flowers of a dirty white colour, and bright yellows, as well as most tints, will not be perfect from the same cause. The object of the grower, then, should be to so regulate the growth of the plants that each variety shall produce bloom-buds at a period best suited for each. This cannot, of course, be done to a nicety—some mistakes are bound to be made—but by observation one may do a great deal in this direction. It is effected by

Stopping the plants.—Notes on the culture of large Chrysanthemum blooms have been fairly prominent in Gardening for some years past, and it has been pointed out that after the young cuttings are rooted each plant is allowed to grow only one stem at first. This stem is made to progress quickly by timely repotting and watchfulness in other respects. In time a natural stoppage takes place at the point of the stem by the formation of a flower bud. This is termed a "break." Were the plant not to be manipulated several branches would form at this break; too many, indeed, to perfect fine blooms by-and-bye. Now, by the time these remarks are in print the period will have arrived that amateur growers may need some assistance, from the middle to the end of April being an excellent time for the study of the first break. Some of the leading exhibitors do not find manipulation nearly so necessary—at least the sorts treated are comparatively few—as the small grower generally, because they get their plants in a more forward state through the winter and early months, having at their disposal ample accomodation in the matter of glass structures. For example, early-struck plants of the well-known Japanese variety Mme. Carnot that have been well grown since, will, by this time, form the first break. The great majority of cultivators, however, will not have got their plants in a state so forward; hence the value of stopping to them.

Stopping is done (1) in the case of varieties which are so very late in the year before they give a break-bud; (2) in the case of those kinds which do not produce perfect flowers from terminal buds, because by this means we may obtain them at an intermediate period; (3) for the object of hastening the formation of flower-buds when the plants are late struck, or otherwise backward in spring There are so many varieties of Chrysanthemums grown that it will not be possible in a short article to name all. I shall therefore confine my remarks to the better known and the most esteemed among the newer kinds. As to the precise time one may stop a plant, I am not particular to a few days in any instance. Those who reside in northern districts will take about the middle of April as a suitable time, and southern readers follow to about the end of the month. I would advise, however, that the matter should not be left later.

Sorts which take a long time before flower-buds form: Mrs. H. Weeks, The Queen, Dorothy Seward, Mrs. John Shrimpton, Mrs. Falconer Jameson, Mr. A. G. Hubbuck, Lord Brooke, Boule d'Or (old variety), Mrs. W. H. Lees, W. G. Newitt. Probably the newer varieties, John Neville, Sunstone, Geo. Seward, and Joseph Brooks will be found amenable to this treatment. All of the kinds named are of the Japanese class. Incurved varieties, as a rule, are better not topped at all. The old sort, Eve, and its sport, Mabel Ward, are so operated upon; but they are almost varieties of the past, and need hardly be mentioned. After topping has taken place train upwards three stems on each plant, and the first flower-bud that appears subsequently may be secured for development.

The next list takes in a great number of sorts, because it includes those which I noted as requiring an intermediate bud as well as backward and late-struck plants: Golden Gate, Etoile de Lyon, Wilfred Marshall, Rose Wynne, Florence Davis, M. Pankoucke, E. Molyneux, G. C. Schwabe, Mme. Marius Ricoud, Miss Dorothea Shea, Mons. G. Biron, President Borrel, Sunflower, Niveum, Graphic, Pallanza, Hairy Wonder, Lady Byron, Modesto, Mrs. H. Kloss, Thomas Wilkins. I would also place those fine incurved sorts, Chas. H. Curtis, Globe d'Or, Mrs. R. C. Kingston, in this category. In this instance also I would train three shoots upwards that result from topping—a process, I may state, which means that the soft point of the growing stem only may be nipped out. Any of the above-named as well as those of a similar habit of growth may be dealt with at the period mentioned. I have found many other choice varieties will generally produce flower-buds at a good time without any topping, provided, as I have stated, they are not late struck. In the latter case I would retain but two, or maybe one shoot. But this matter shall be touched in a separate article. Phœbus, Pride of Madford, Australie, Miss Elsie Teichman, Oceana, Mlle. A. de Galbert, Lady E. Saunders, Mutual Friend, Col. W. B. Smith, Boule d'Or (new var.), Edith Tabor, and Australian Gold are a few esteemed varieties that usually break in a natural way, so as to give buds at an excellent time; whilst there are others like M. Chénon de Léché, Viviand Morel, Mme. Ad. Chatin, Wm. Tricker, Reine d'Angleterre, Charles Davis, and so on, that have a habit of continuously forming break-buds throughout the summer. In these and similar instances the amateur need not be alarmed, as a bud on a suitable date will generally appear if the plants have the necessary attention bestowed upon them. Timing the buds refers to the manner of growth for large blooms only. Of course, in respect to a tall-growing plant like the Chrysanthemum, one must top and top again when bush specimens are desired. H. S.

LATE-STRUCK CUTTINGS.

A system which is not new, but which has been brought more prominently to the fore of late years, is that of single-stem plants, each bearing one blossom. It has much to recommend it, inasmuch as specimens useful for many purposes may be obtained in a comparatively short space of time. And if proper varieties be selected one may get a dwarfness in the plants that will make them eminently useful for the amateur grower with limited space.

For this mode late-rooted cuttings will do. They may be struck from now on till June. The small tips, therefore, that we take from plants when topping them form the material, and if the old stools of last year have not been destroyed there will, of course, be an ample supply of healthy cuttings. Put these either singly in small pots, or place them about 3 inches apart in shallow boxes filled with any ordinary potting compost. Shade slightly from the sun and water when needed. This will be almost daily if the boxes be shallow as advised. Shelter the cuttings under any glass structure, and keep air from them as much as possible until rooted. The young plants must be parted immediately roots have formed, which condition is indicated by fresh leaves growing. This is to prevent a drawn and spindly look. They should now be kept cool and have abundance of air, almost open-air treatment, in fact.

If plenty of moisture be given, and the tiny plants not crowded, they will thicken out into dwarf, sturdy little specimens with healthy dark green leaves. They should not become pot-bound. It is therefore advisable to give another early shift, because at this time of the year growth is very rapid; this time in the pots that are to be the final size. Those of 6-inch diameter, called 32's, are large enough. Use a compost of turfy loam, rotted manure sifted in the proportion of 1 peck to the bushel, then add a sprinkling of coarse sand, and a pound of bone-meal to one bushel of the whole. Pot very firmly with the aid of a stout stick to ram the earth into the pots and stand the plants in the open air.

Some varieties may be grown straight on, and the first flower-bud that comes is the proper one to retain, by pinching away all the growth-buds which form around it. Curiously several notable American-raised sorts are admirable ones to treat on the system being described. The plan is indeed a modification of that more generally adopted in that country. There, however, pots are not used, but the plants are grown under glass the whole summer, being planted out in prepared shallow borders.

Any sort known to be a long time in forming flower-buds is capital on the one-stem one-bloom system. Mrs. F. Jameson, an old and well-known kind, is one that first occurs to me, because of the above named trait; and also on account of the healthy, large, well-developed foliage this variety has. I fancy again this kind has played a prominent part with those raisers in England who have saved seed and obtained new ones. Several of the fine varieties of Mr. Seward and others partake of the habit of the sort Mrs. F. Jameson, that they are alike suited to the above-named plan. Mrs. John Shrimpton, Dorothy Seward, Richard Dean, Colonel Bourne (all of high-coloured shades) are a few. Mrs. H. Weeks, flesh-white, is a handsome variety especially adapted to the system in question. The Queen, white; W. G. Newitt, white; Sunstone, amber-yellow, are good so treated. But it may be useful to add other names, so as to form a complete list. I would only choose sorts that bear fine, handsome blooms, that have good foliage, and are dwarf, or, at most, of moderate height. Besides those named already the following may be included: Phœbus, yellow; Mutual Friend, white; Mme. Carnot, white; Pride of Madford, crimson-pink; Modesto, yellow; Wm. Seward, crimson; Louise, blush; Chas. Davis, bronze-rose; Viviand Morel, mauve; M. Chénon de Léché, old rose; Australian Gold, yellow; Thomas Wilkins, buff-yellow; Mrs. Charles Blick, white; Australie, clear rosy-lilac; Mme. Ad. Chatin, white; Mlle.

Thérèse Rey, white; M. Ch. Molin, bronze; Golden Gate, yellow; Sunflower, yellow; Souvenir de Petite Amie, white.

Very fine blooms may be grown thus from late-struck cuttings, and amateurs who have not tried the plan should do so. The plants, being in comparatively small pots, the necessity of good culture is at once appparent. They must not suffer through want of water, and stimulants in a weak state must be applied pretty regularly.

The mention of stimulants reminds me of a case that came to my notice the other day of an amateur cultivator who absolutely killed the greater portion of his Chrysanthemum plants by the too free use of soot in the soil. Be careful, therefore, to adhere to some such simple mixture as I have named as a suitable compost. It is always easy to overload potting-soil with fertilisers, the strength of which we have no means of testing, and the desire to try these tempting articles is ever strong.

Returning to the single-stem specimens, in matters like removing side shoots, bud selection, and so on, the general rules are applicable, but this does not seem the proper season to deal with them. S.

Agathæa cœlestis.—A very charming, light blue flower, which some people call a blue Marguerite. It is thoroughly winter-flowering, the blooms being produced singly and somewhat abundantly. Its culture is of the very easiest description; it grows rapidly, and for this reason soon becomes too large for my small house. I therefore raise plants of it every year from cuttings.—D.

Leopard's-bane (Doronicum austriacum).—A common hardy herbaceous plant, some people would say, almost as good as a Dandelion, but, for all that, a very useful plant for early flowering in the greenhouse. I always have several of them in the open border, and take them up and pot them just before the winter commences. After they have done flowering they are turned out of their pots into the open ground and left there till again wanted, or they may be divided and the stock increased. The same plants will do year after year.—S.

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FRUIT.

A FEW GOOD PEARS.

Doyenne du Comice is perhaps the finest Pear in cultivation, and should be included in the most limited collections. It succeeds well under any form of training, the growth being stout and clean, and the foliage bold and healthy-looking. Naturally it is most prolific on the Quince-stock, and on this the fruit is apt to lay on the best colour, but the best trees are on the Pear-stock. This very fine variety is in season late in October, and can be kept good till the third week in November.

Pitmaston Duchesse is grown for the markets, large, naturally-grown pyramids on the Pear-stock frequently producing enormous crops of showy Pears. The tree is of free, yet most productive growth, and, left alone, forms grand pyramids. Wall-trees of any form are also very prolific, and, freely thinned out, the fruit attains an enormous size, or just what exhibitors delight in. The fruit is not unlike that of Marie Louise in form, but though buttery the quality cannot be compared with that of the last-named, being too acid for most tastes.

Marechal de la Cour, also known as Conseiller de la Cour, though not generally popular, is yet a favourite of mine. The tree is amenable to any form of culture, and is particularly well adapted for growing into large pyramids. Wall-trees produce remarkably fine fruit, and though good in quality with me about the first week in November, the smaller fruit gathered from pyramids and standards is the most delicious.

Van Mons Leon Leclerc I consider ought to be more planted, especially where large and somewhat showy fruit is desired. Pyramids on the Pear-stock attain handsome proportions and produce heavily, and espalier-trained trees are also very profitable. Naturally the finest fruit is obtained from wall-trees, and this variety seems to lend itself particularly well to the purpose of clothing archways through garden walls. I have had Van Mons 5 inches in length and of good form, attractive appearance, and superior table quality.

Durondeau (see cut), another old favourite, may be grown into very good pyramids, and it does well against walls with an east aspect. It is a remarkably productive variety, and if freely thinned out the fruit attains a good size and colours very prettily. This, like the preceding, is a November Pear, ripening early in that month, and is usually of good quality.

Marie Louise is so well known and so generally appreciated that little need be said about it here. I would, however, once more suggest that the site, or, better still, one of the sites, chosen for this valuable November Pear should be a wall facing east or north-east. Our best fruits are invariably gathered from a large old tree on the Pear-stock against a high wall facing north-east, and it is also worthy of note that in no other position did the trees bear well last season. I hold that the Pear-stock is much the best for this variety, trees on the Quince soon becoming far too stunted to be profitable.

Comte de Lamy no lover of good Pears should be without. It succeeds admirably under any form of training and is very productive in all cases. The best flavoured fruit is obtained from a tree against a wall facing south-east, where also the colour is laid on most freely. It is a pretty little Pear, and when ripe, crisp, melting, and rather sweet.

Thompson's is worthy of a place in quite limited collections of Pears. On the Pear-stock it grows with moderate freedom and is a sure and heavy bearer, good pyramids of it being commonly met with. The variety is well worthy of wall space, a site facing westward answering well, though it also succeeds to perfection in cooler quarters. With me it ripens towards the middle of November, and is of delicious quality.

Huyshe's Prince Consort is of free, yet most productive habit of growth. Pyramids, bushes, and horizontally-trained trees in the open garden all do well, but the largest fruit and the clearest in colour are produced by trees growing against a moderately warm wall. It is a very distinct variety, and rarely fails to produce a crop. M.

Pear Durondeau.

Apple Prince Albert.—Nothing but words of praise are ever said or written about this grand Apple, and I do not propose being the first to write disparagingly of it. On the contrary, I would call attention to a point in its favour too often overlooked—viz., its fitness for dessert. Those who have kept some or all of their fruit of this variety in a cool dark room, free of the tainting influences of straw, hay, or any other musty or strong-smelling material, ought now to test its table qualities. They will, unless I am much mistaken, find the fruit of

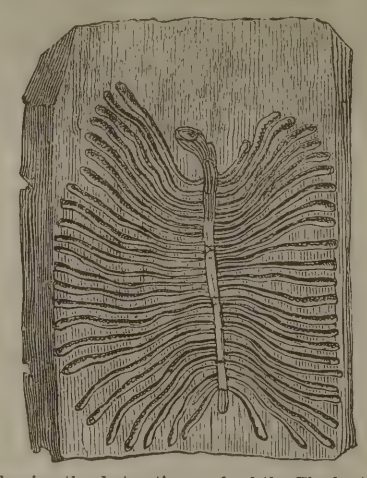
Lane's Prince Albert crisp, yet melting, and of a brisk flavour that pleases. A sweet Apple it is not by any means, but it is very easy of digestion, which cannot be said of many of our English Apples at this period of the season. There is only one American variety that will bear comparison with it, and that is the Newtown Pippin.—W.

GARDEN PESTS.

THE ELM-DESTROYING BEETLE (SCOLYTUS DESTRUCTOR).

This little beetle is one of the most destructive, perhaps the most, of the many pests which infest our forest-trees. Fortunately, this species generally confines its attentions to Elm-trees, and particularly to those near London and other large towns. It sometimes attacks trees in very large numbers. When this is the case the trees are certainly doomed unless energetic steps are at once taken to destroy them. It has been a matter of much dispute amongst entomologists and horticulturists as to whether these insects attack perfectly healthy trees, or only those which from one cause or another are not in vigorous health. There is, as there usually is in all controversies, much to be said on both sides; but I think that the trees are, in a majority of cases, in an unhealthy condition before they are attacked. There can be no question that the grubs are very frequently found in large numbers and in full vigour in felled timber, which the female beetle had apparently selected in preference to sound and healthy trees. It is surely very improbable that the grubs should thrive equally well on vegetable tissues filled with dying sap, or fresh, rapidly-flowing juices; in fact, it is urged by many persons that the grubs cannot live where there is a rapid flow of sap, so that it would be impossible for them to injure healthy trees to any appreciable extent. The trees in and around London and other large towns being more often infested than those in the country also goes to prove that it is the unhealthy trees which are most likely to be attacked. I expect that the beetles are quicker than we are in detecting the trees whose vitality is impaired, No doubt as soon as a tree is attacked the decay goes on all the faster, for the bark becomes loosened, and the tunnels and galleries made by the grubs admit air and moisture, which very much facilitates decay. If this view of the matter be the right one, then by keeping trees in good condition they will be rendered less liable to be injured by this insect than they would be otherwise. In gardens and pleasure-grounds, where more attention can be given than elsewhere, a good application of liquid-manure to the roots of an ailing tree will greatly help it in its struggle for existence. When a tree is so badly attacked that its recovery is doubtful it should be at once cut down, and every particle of the bark burnt. In a paper read before the Entomological Society in 1858, Captain Cox gives an account of an experiment he tried on Elm-trees in Regent's Park which was very successful. He operated on twelve trees which were all more or less infested, seven being severely injured. Out of the entire number only one died; four years afterwards six had quite recovered, and in six years the eleven were completely cured. The plan adopted was to pare down the bark with a draw shave until the galleries of the insects were laid bare. Care was taken that none of the grubs were left on the tree. The position of the galleries was detected by the small pieces of bark which are thrown out by the female whilst making them, some of which adhere to the entrance. It was calculated that no less than 280,000 beetles must have been bred from one tree alone. Much the same system has been tried on the Continent and with equal success, but there the bark was not pared away deep enough to expose the galleries, but only the rough, outer bark was removed; this caused so great a flow of sap to the inner bark where the grubs were that they died. At the time when the beetles are at work it would probably be useful to thoroughly drench the stems with a wash of 7 lb. of soft-soap, 1 gallon of paraffin-oil, to 100 gallons of water. Notwithstanding the apparently safe position of the grubs, they are attacked by an ichneumon-fly and a parasitic worm. The beetles are fully developed in May or June, and leaving their chrysalis cases, eat their way through the bark and gain the outer world. After pairing, both sexes live by feeding on the sap. When the female wishes to lay her eggs she chooses a place in the bark where the entrance to her burrow will be somewhat protected, and having worked her way through the bark, makes a long tunnel between it and the hard wood, in which she deposits her eggs singly and at a little distance apart. She then returns to the entrance of the burrow and dies, leaving her body as a kind of plug to the hole. When the eggs are hatched the little grubs begin feeding, and eat their way straight forward nearly at right angles to the main tunnel. As they grow, the galleries they form become wider and gradually spread from one another, but they never seem to break through the thin partitions which separate them from their neighbours on either side. The grubs are probably full grown and become chrysalides at the end of the summer, for the beetles, grubs, and chrysalides have all been found together in the same tree in August, whilst in November only the chrysalides were found. The beetle is about 2-10ths inch in length, tolerably stout, and terminating very abruptly behind. The head and fore-body are black and shining; the latter is very large in proportion to the insect, and is much narrower in front than behind. The feelers are brown and end in a knob. The wing-cases are of a pitchy-brown colour, very much rounded, and marked with numerous sunk lines running lengthwise. They cover a pair of wings, which when extended are very long and narrow. The grubs are nearly 3-10ths inch in length when full grown. They are white, fleshy, and much wrinkled. They have no legs, and are usually in a somewhat curved position. Their heads are horny, smooth, and of a yellowish-brown colour. Their mouths are provided with a strong pair of jaws. The chrysalis is whitish, and about the same size as the grubs. The limbs of the future beetle can easily be seen through the thin skin in which it appears to be wrapped.

The Elm-destroying beetle (the smaller figures denote natural size).



Showing the destructive work of the Elm-beetle (Scolytus destructor).

G. S. S.

Currant buds unhealthy.—The reply to this in Gardening, April 10th, page 82, is unsatisfactory. The pest, whatever it is, cannot be known as the "fly or mite," it must be one or the other, and the same treatment would not be suitable in both cases. The only fly that attacks the Currant that I know of is an aphis, and there is no necessity for such strong measures to be taken in the case of this insect as are recommended. Even with the mite I should be inclined to try pruning very close, burning everything cut off, and dressing the stumps with a mixture of 4 ozs. of sulphuret of lime, 2 ozs. of soft-soap to a gallon of hot water; work the dressing well into every inequality of the bark.—G. S. S.

Sweet Peas attacked by grubs (*G. North*).—The grubs which you sent belong to the family Bibionidæ—the family to which the St. Mark's fly belongs. A good dressing of nitrate of soda, salt, lime, gas-lime, or soot, would probably kill them, but you might have difficulty in using the ground immediately afterwards. We should destroy them as soon as possible to prevent them becoming chrysalides and then perfect insects, which they will do soon.

Slugs eating Pyrethrums (*S. McCrea*).—The ashes should prevent the slugs from attacking the plants unless there were any hidden in the ground before the ashes were put on, but they will not hinder wireworms and leather-jackets from attacking the plants, as they work underground. They may be trapped by burying slices of Mangold, Turnips, or Carrots about an inch below the surface. A small skewer stuck into each renders them easier to find. They should be examined every morning.

Large centipede (*H. Bowden*).—Before your letter reached me I am sorry to say that the centipede had escaped; but if it was a quick-running one you may be sure it was one of the useful ones. The snake-millipedes, which some persons mistake for centipedes, and which are very injurious, move very leisurely and demurely; the centipedes, being carnivorous, have to move about in search of their prey.—G. S. S.

Names of pests (*Lector Assiduus*).—The menagerie you sent consisted of two specimens of the luminous centipede (Geophilus longicornis); two of the grubs of one of the ground beetles (Carabidæ). They were the largest of the insects in the box. Both of these are useful in gardens. Then there was a wireworm (the grub of one of the skip-jack beetles). It was about § inch long, and a specimen of the spotted snake-millipede (Blanjulus guttatus). These two are most injurious to the roots of many—indeed of most plants (the snake-millipede curls itself up when disturbed). Both these pests are very difficult to destroy, and if ground is badly infested with them the best way is to give it a clean fallow and a good dressing of gas-lime. They may be trapped by burying slices of Turnips, Mangold, or Carrots about an inch below the surface. A small skewer should be stuck into each slice, so that they may be easily found. These traps should be examined every morning, and should be buried near the plants they are attacking.

Fly injuring Daffodils (*Miss J. V. Hopkins*).—The flies which you inclosed are quite harmless in gardens and so are their grubs.

Do water-snails eat water-plants? (*Mrs. Knox*).—I do not think the water-snails would injure your water plants, or they would not be kept so frequently as they are in aquaria for the purpose you mention, but I cannot say how many would be required to keep your pond clean, but I should imagine some hundreds.—G. S. S.

Sweet Peas attacked (*Alerta*).—We cannot hazard a guess as to what the worms are that have killed your Peas without seeing them. We should be pleased to see specimens and name them if you would kindly send some.

A Mexican Butterwort (Pinguicula caudata).—Irrespective of flowers this Mexican Butterwort is very pretty, as the leaves form a dense rosette, with the tips slightly incurving. As the season advances, however, they spread out flat and present then a totally distinct appearance. It will grow well in a mixture of peat and live Sphagnum, and if in the company of Odontoglossums, should be in that part of the house that is not too heavily shaded.

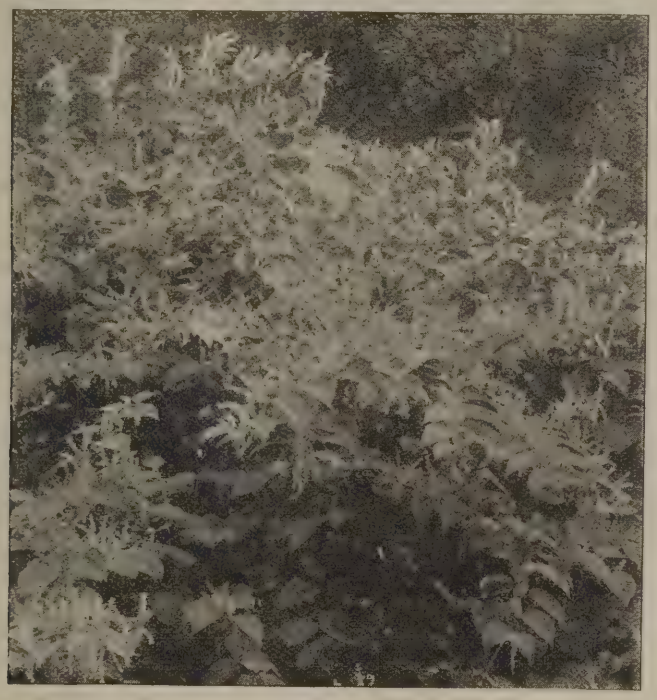
Schizanthus pinnatus and S. retusus.—I have always grown a few pots of these very pretty, half-hardy Chilian annuals. By sowing the seed in August and pricking out the plants as they increase in size one can get them to bloom early in the spring; they are light and graceful, and excellent for cutting.—D.

OUTDOOR PLANTS.

THE KNOTWEEDS.

The majority of the Knotweeds are of small account, but a few are very handsome in form, and should be grown for that reason. There is not the slightest difficulty as regards their culture. They are too weedy almost, and should, therefore, not have a place near flowers or where their rambling roots are likely to create mischief. The

Japan Knotweed (P. cuspidatum), of which an illustration is given, is, although a very beautiful object during its flowering season, and also by no means unornamental in the autumn, when its leaves turn colour (though in this latter respect it is not to be compared with P. sachalinense), should not be planted elsewhere than in the wild garden, it being of rampant growth, and is as difficult of eradication when once established as is Coltsfoot. If, however, space can be afforded it where it may flourish undisturbed without usurping the territory of other less predatory neighbours, it will during the summer and autumn months form an effective picture, and group well with its surroundings. The accompanying illustration depicts a portion of a clump 18 feet in length



A group of the Japan Knotweed (Polygonum cuspidatum).

and over 7 feet in height, which is growing in an open glade on the margin of a small tree-encircled lake. In the immediate vicinity huge tufts of Pampas Grass bear aloft their tall plumes, and in the shaded groves near by the Lady Ferns, revelling in the moisture and rich soil, assume giant proportions. When in flower this kind is delightful; it bears a wealth of creamy-white flowers on its graceful stems. P. compactum is a smaller, more compact variety of this.

P. sachalinense is a noble kind, sometimes as much as 12 feet in height. Its leaves are bright green, and over a foot long, whilst the greenish-white flowers are carried in drooping racemes. This is a splendid kind to group by the waterside, where its noble form can be well seen.

Other good Knotweeds are P. affine, which is suitable for damp positions on the rock garden. It bears rosy-red flowers in dense spikes in the autumn. Rock Knotweed (P. vaccinifolium) is a very hardy and distinct kind, and is pretty on the rougher parts of the rock garden. Its leaves are like those of the Whortleberry, and the flowers are rosy in colour. P. sphærostachyum has dense spikes of crimson flowers, and is one of the most handsome of the dwarfer kinds. I think it is a little tender, and needs a well-prepared soil, no place being more suitable for it than a rather sunny one on the rock garden. C.

THE MIXED BORDER.

I think some of the remarks contained in the interesting article under this heading in a recent issue of Gardening are apt to mislead some who may be thinking of starting a mixed border. I quite agree with the writer that it should be our aim to clothe the brown earth with flowers that reveal themselves as season follows season, but in point of fact this is impossible for the whole twelve months. It sounds very nice in theory to have the whole surface of the border covered with creeping plants, but in practice it hardly answers, though no doubt it can be done to a certain extent.

The writer says, in such a border plant Daffodils, Crocus, Chionodoxas, etc., but he does not say where they should be planted. All the hardy bulbs which can take care of themselves may be planted in clumps amongst the taller perennials at the back and in the middle of the border. I say may be planted there, but, of course, they can and ought to be planted in front as well. These will include, besides those enumerated above: Scilla præcox, Grape Hyacinths, Scilla campanulata, Narcissus Horsfieldi, Emperor, Sir Watkin, and other equally strong varieties, Dog's-tooth Violets, Anemone Robinsoniana, apennina, and ranunculoides, Camassia esculenta, Sylvestris, Gesneriana and Breeder Tulips; to which may be added Primroses (especially the varieties of Primula Sieboldi), Forget-me-not, Aubrietia, Arabis, Alyssum, and Dusty Millers. As the latter perennials grow they will cover up the leaves of the bulbs which are always unsightly after the flowering season. This system will leave more room in the front of the border for dwarf flowers which require rather less rough and ready treatment, such as Iris reticulata, some of the finer Narcissi, Anemone blanda, fulgens, alpina, Dwarf Campanula, Tufted Pansies, and many dwarf alpine flowers.

The writer of the article referred to advocates planting in a bold way, but I have never been quite able to make up my mind if this is the right way or not. It is, of course, more effective when the groups of plants are in bloom, as we all like to see a fine mass of Larkspurs, Pæonies, Alstromeria, or Oriental Poppies; but when the flowering is over and the leaves begin to wither, large gaps are made, whereas if one or two good specimens of each plant be grown the colour effect of the whole border is never spoilt. At the back of my borders I have a rough wooden trellis, about 5 feet high, on which I grow Roses, Clematis, white and pink Everlasting Peas, Honeysuckles, Sweet Peas, and Tropæolum canariense; and at the back of this I plant large clumps of Delphiniums, Helianthus, and Cephalaria, and by the time these have flowered the Clematises and Tropæolum have taken possession of the withering stems, so that these, instead of being an eye-sore, become beautiful objects when covered with the trailing plants.

I cannot agree that annual digging is either unnecessary, hurtful, or stupid. It should be done with discretion, no doubt, but a heavily cropped mixed border is all the better for an annual forking up of the surface and the introduction of some manure and leaf-mould. I use a three-pronged fork for this purpose, and have never found any harm done by it.

Then, again, I find it absolutely necessary to stake the majority of my plants, and a great labour it is, for in my borders there are many hundred of stakes, principally iron ones painted green and Bamboo, and nearly all the plants have to be tied up two or three times during the summer. The great thing is to stake early then the plant will soon adapt itself to the tying. Most plants have three stakes and some a great many more. For instance, large clumps of Lilium testaceum, Pentstemon barbatus Torreyi, and Eryngium alpinum. I use half-a-dozen stakes, attaching a few stems loosely to each, and so showing off the plant to the greatest advantage, whereas if left to their own sweet will they would be lying flat on the ground and their flowers splashed with mud after every shower of rain. For Pyrethrums I use Pea-sticks, bent over the plants in the spring, through which the shoots grow, and when in bloom no one could possibly tell they had any support at all. I also use stronger wooden branches in the same way to support a splendid plant of Dielytra spectabile, 9 feet through by 5 feet high.

There is an immense amount of labour connected with a properly kept mixed border which is bright for nine months in the year, and let no one run away with the idea that a border once planted will go on for ever. There is probably quite as much labour as there would be with the same amount of bedding out, but, on the other hand, mixed borders should be gay for nine months, and bedding out lasts only about three months. A border should be dug up entirely every four or five years, everything being taken up except the Pæonies, Liliums, when they are doing well, and Dictamnus Fraxinella. Even then there are many plants which are better for lifting and replanting every two years, and Double Rockets should be replanted every year.

Besides this, there is the annual raising of Wallflowers, Canterbury Bells, Snapdragons, and other biennials and cuttings should always be taken of Pentstemons, Tufted Pansies, Coreopsis lanceolata, Gaillardias, as well as many other more or less hardy plants. Cuttings should also be taken in the spring of the best Phloxes, Delphiniums, Lychnis vespertina fl.-pl., as two-year and three-year-old plants always produce the finest blooms.

I can imagine a border a few yards long being bright for a few months—probably June and July, when every garden is bound to be bright—but not for longer—in fact, I hardly think mixed borders are suitable for very small gardens, and I believe the despised Pelargonium, Calceolaria, and Lobelia would give more satisfaction here.

M., *Northumberland.*

310.—**Drying wild flowers.**—The following is a very good way of pressing wild or other flowers. I suppose "Archie Ley" means pressing, as they are to be arranged in a scrap-book. Large sheets of thick blotting-paper should be procured and the flowers, Fern-fronds, etc., arranged on one of them, not close enough to touch each other. When this is completed put on top another sheet of the blotting-paper, and then place the whole between the pages of a book large enough to accommodate it, then place the book in a press or place a heavy weight on it. Let it remain so for at least a week, then examine it and take away all flowers, so that they are free from moisture. You may easily arrange them with good taste in a scrap-book.—R. F., *Kidderminster.*

—— In reply to your correspondent "A. Ley," he should obtain some botanical drying paper, which can be procured from any stationer or from the co-operative stores. If, however, there is any difficulty about getting it any paper

which is tolerably absorbent will do. Blotting-paper is, however, too absorbent. Grocers often have a rough sugar-paper which does very well. About 16 inches by 10 inches is a very good size, but that is not very important. A few boards about ½ inch thick and a trifle larger than the paper are also necessary. Sheets of thick mill-board will do instead, but boards are better. Take a board and lay it on the table, and place two or three sheets of paper on it, then take one of your specimens and lay it on the paper in as natural a position as you can, with the leaves laid out flat, if possible with some showing the upper sides and some the under, and the flowers in the same way. Then lay two or three sheets of paper over them, and put some more specimens in position, and go on in this way until you have used up all the specimens. Between every four or five layers of specimens place a board, and also one at the top of all. Then place the pile of papers on the floor, and put some heavy books, bricks, stones, or anything heavy on it. You should examine the specimens the next day, for then it is easy to put anything right if you find it is not in the proper position. It is often not at all easy to make the specimens remain in the position required while others are being arranged. When this is the case lay the plant at the bottom of the paper, and take another sheet, and as it were roll it over the specimen with the left hand, while you keep the latter in position with the right. A little practice will soon render this simple operation quite easy. Every two or three days, according to the moisture in the plants, they should be put into dry papers. The plants are fit to be taken from the press when on raising them from the paper they are found to be quite stiff. Some persons recommend a screw press instead of weights for pressing the plants, but though more convenient in some ways it is not so good, for as soon as the plant begins to lose its elasticity the pile shrinks, and unless the screw is tightened there is little or no pressure. When your specimens are dry you can, of course, fasten them into a scrap-book with gum or small strips of gummed paper, but it is better to use separate sheets of paper, as you can then arrange the plants according to their proper classification. Only one species must be put on the same sheet; the name and the locality where the plant was found should be written at the foot of each sheet, and also the date. The specimen should, if possible, show the seed, seed-vessel, and root, as well as the flowers and leaves.—G. S. S.

—— It is important to collect them and press as soon as possible afterwards, otherwise the plant will droop after being gathered. A good plan is to take with one a long wide box in which to put the specimens. Each should be carefully dug up by means of a trowel, the soil shaken from the roots, and when brought home carefully laid out between a sheet of thick blotting-paper, being careful to have all the parts straight, each leaf being spread evenly out as in natural growth. Then place another sheet of blotting-paper on the whole, and on the top a flat board sufficiently large to cover all. Then put any heavy weights on the top of this, and keep in a dry place. In from four to six weeks' time the specimens will be dry and ready for mounting. Each must be laid on a piece of thick paper or cardboard, and secured either by strong cotton or thin strips of gummed paper fastened over the stem here and there. A little gum is useful to fasten the leaves down. Each specimen should then be neatly labelled—viz., botanical name, natural order, where found, by whom gathered. —Constant Reader.

—— In answer to a question in your last issue, from "Archie Ley," wild flowers should be pressed in the required way between sheets of blotting-paper, and not taken out until quite dry. When mounting, they should not be gummed, but be put into a book with small strips of paper across them and gummed at the ends to hold them in a proper position. I found, however, the whole thing most unsatisfactory, as no matter how carefully one dried and pressed them they nearly always changed colour and turned brown.—R. J. S.

A JAPANESE WALL-POCKET.

The wall-pocket in soft grey Japanese ware (here figured) contains a graceful arrangement of one flower only—*i.e.*, the finest of the Ivy-leaved Pelargoniums—namely, Souvenir de H. Turner, the brilliant blossoms of which are of a clear rose colour, inclining to carmine, semi-double, and very large, each pip being from 2 inches to 3 inches across. A special advantage which this beautiful plant possesses is that it produces blossoms all through the year, so that even in winter, when so few bright flowers are to be had, some trusses of bloom are still available on a good plant of this Pelargonium, while with the first sunshine of spring it is a mass of blossom. In cutting all flowers for decoration the longest stems available, without destroying buds, should be secured, and in this particular these Pelargoniums give no trouble. It is easy to shorten a stem where necessary to the exact height at which the blossom should be arranged, but without a long stem it is often necessary to add a straight wire (small bundles of which are sold for this purpose) to raise the blossom to its proper position. This rest-wire, such as is used for button-holes, etc., should also be at hand, for it may be necessary to attach the flowers to each other, or to the wall, if their weight should interfere with the design. The foliage used must be light and graceful. In the present instance Ferns (Adiantum cuneatum and Pteris cristata) are supplemented, with a little of the Pelargonium foliage and long sprays of a trailing Fumitory, which, though a wild plant, is most useful in all floral decorations, and a few seedlings of this Fumaria (officinalis) may be given shelter under glass in winter with much advantage for cutting. Either in the drawing-room or in the hall this wall-bouquet will be very effective, the pocket being easily suspended on a brass-headed nail, which is concealed by the flowers. I. L. Richmond.

Japanese wall-pocket filled with Ivy-leaved Geranium-flowers. From a photograph by Mrs. Richmond, Lustleigh, Devon.

SOFT-WOODED HEATHS.

The cultivators of old used to regard the different Heaths, or, at all events, some of them, as good tests of the gardener's skill, for constant attention is absolutely necessary to their well-doing, and none of the rough-and-ready methods too often to be met with nowadays in the cultivation of many plants are likely to prove successful with greenhouse Heaths, more particularly in the case of those belonging to the hard-wooded section. The group known as soft-wooded Heaths is, however, of easier culture, and while the others have almost dropped out of cultivation, some of these still retain their place, and a few of them are grown in quantity and brought into Covent-garden market during the flowering season. By far the most popular is Erica hyemalis, whose early history is, singularly enough, quite unknown. During the winter this may be met with in large quantities throughout the flower markets and shops of London and the provinces. There is more than one form of this Heath, and the colour of the flower also varies, according to the treatment given, some cultivators having the knack of turning out richer-tinted blossoms than others. A delightful variety of Erica hyemalis is alba, whose blossoms are pure white. In all other respects it is a counterpart of the type and forms a charming companion to it. The tiny-flowered Erica gracilis, which makes up in numbers what is lacking in size of bloom, is another kind that flowers during autumn and winter, while a good companion to it is the little white-flowered Erica Caffra. E. Wilmoreana must be regarded as the best of all Heaths for the month of March. Grown in the pot so popular with our market-growers—that, is the 4½-inch or 5-inch pot—this Heath is offered for sale in the shape of neat little bushes, each one carrying several fine spikes of showy blossoms. These flowers are a good deal in the way of Erica hyemalis; indeed, the plants of Erica Wilmoreana present a general appearance to that kind. Very free-flowering Heaths are E. persoluta and its variety alba. At the same time the beautiful yellow flowers of Erica Cavendishi were very conspicuous, and so was E. candidissima, whose pure white flowers are borne, as a rule, rather later in the season than this. As summer advances, the low-growing E. ventricosa, represented by several varieties, may be met with exposed for sale, and very pretty the neat, compact little plants are when thickly studded with blossoms. A significant fact, which shows to a great extent the reason that collections of Ericas are not much grown at the present day, is that the few which still remain popular include among their number all those of which effective specimens can be obtained in the shortest time, while such as E. Massoniana, E. ampullacea, and E. McNabiana, so dear to our forefathers, are now conspicuous by their absence. They belong to what is known as hard-wooded Heaths, and in their case the cuttings take much longer to root than those of the common kinds, while the after-growth is but slow. H.

Bermuda Oxalis (*A. M. J.*).—Give cool greenhouse treatment, and a rich sandy loam. Very little water is needed in its present stage.

THE KITCHEN GARDEN.

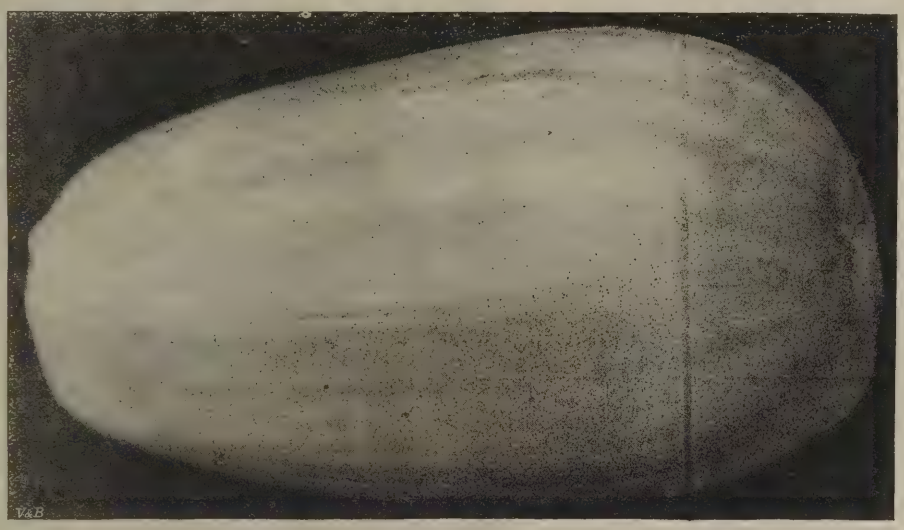
VEGETABLE MARROWS.

Amateurs as a rule take much interest in Vegetable Marrows, as the plants need so little attention if the grower gives them a fair start, and is not too good to them when they attain a large size. Many plants fail to fruit properly because too highly fed. Another point in Vegetable Marrow culture is to obtain sturdy plants from the start; also plant at a season when there can be no check. As regards

Varieties,

they are numerous. The one illustrated is called King's Acre Cream, and is doubtless a good selection of the well-known Moore's Vegetable Cream, one of the best Marrows grown, and noted for its medium-sized fruits. King's Acre Cream is also early, whilst the fruits are of good shape, fit indeed for exhibition and general use. There are others well worth a trial, and as this is the season the amateur should begin their culture to get good summer crops, it may be well to give a select list of those known to be reliable.

No vegetable loses quality so quickly as the Marrow when the latter is large; indeed, it stands to reason that any fruit attaining what may be termed the seed state is not so good for food. A Marrow to be at its best should be eaten before the seed is formed. Size means a woolly flesh, dry, quite devoid of flavour, and needing more cooking; but eaten in a young state it is a delicious vegetable. Some growers (gardeners included) think it robs the plant to cut fruits young, but the reverse is the case. Others form more quickly, and when plants are regularly cut over, and not allowed to produce seed fruits until the last stage, they bear much heavier crops and for a longer period. Those who like small Marrows, the round, Melon-like fruit of Pen-y-Byd is a splendid type, quite distinct, and noted for quality. This cut in a small state is excellent; a creamy white. The Custard is a nice vegetable, but requires using in a young state. It is almost worthless when allowed to get old. This is a good kind to grow in gardens of limited size, as the plant is a compact grower, and though less prolific than some, it has a peculiar flavour much liked by many.



Vegetable Marrow King's Acre Cream. From a photograph by Mr. Stevenson, Long Eaton, near Nottingham.

Another excellent variety is the Long White, which probably is one of the most prolific and profitable of all Marrows. It soon matures the fruit, the growths being short-jointed, and is of first-class flavour. It is one of the best for screens or to cover unsightly heaps. A good green is Long Striped, a companion to the Long White and much like it in growth and quality; it is of sturdy growth and noted for its hardiness. Prince Albert, a medium green variety, is likewise good. There are others well worth a note, such as the Bush or Cluster, a small compact grower, quite distinct, but inferior in quality if allowed to get large. There are both white and green varieties, and by some firms it is sold as the Chusan Marrow. The

Culture

depends much upon the cultivator's means and space. Plants are best raised in heat, and sown any time during April, will be ready to plant the end of May or early June. Being a remarkably fleshy seed no moisture is required until germination takes place. I prefer to sow a couple of seeds in a 4-inch pot. When the seedlings are above the soil thin to the strongest, and as soon as the plants have made three or four leaves remove to a cold frame or place under hand-glasses; it is important to get a sturdy growth. Some sow a good number of seeds in a pot, and when large enough transfer to single pots, with the result that much time is lost, the plant is weakened, and unless one has a good command of heat there is loss of plants. If potting up is delayed the plants become so drawn that they rarely make headway. After planting out, a little shelter is well repaid, and almost anything at command may be employed to cover at night until the plant is well established. Another matter often overlooked is site or position. Avoid planting in the shade or under trees, and in a mass of rank manures; the latter are the cause of so much barren growth. A little food is advantageous, but excess means leaf growth, and the fruits, though they appear, fail to set. Stopping the points of leading shoots is often neglected. This should be done at least once a week, and in dry weather give ample moisture after a hot, dry day. Watering overhead is most beneficial; also give liquid manure if the plants are fruiting well. As previously noted, never allow fruits to get seedy, but cut in a small state regularly, and by so doing a long fruiting season will be secured.

G. Wythes.

GREEN PEAS IN ABUNDANCE.

Tender and richly-flavoured Marrow Peas are universal favourites. Having had to provide large quantities of these as early and late in the season as possible, it gives me much pleasure to endeavour to describe the method that I have found to be most successful in affording a supply daily for many weeks. Peas, to secure the best results, must have high-class cultivation, and I have proved for many years past that this can be achieved by adopting what I will here call the trench system. Let trenches be marked from 18 inches to 2 feet wide, the same as for Celery, and from 2 feet to 20 feet apart, according to circumstances, for wherever the greater distance can be afforded between the rows so much the more abundant will be the produce, and I would strongly recommend that in large gardens rows be placed 20 feet apart, and dwarf crops grown between. But to return to the trenches; let them be dug out a spade deep, reserving the best soil on one side of the trench, and put into the trench several inches of good, well-decayed manure. Dig it in a spade deep, then well break the soil taken out of the trench and reserved to be put back again. Fill up the trenches with this to within 2 inches or 3 inches of their tops, and as this proceeds scatter in with the soil a moderate sprinkling of soot, bone-meal, ½-inch bones, or any of the reliable artificial manures now so plentiful. Rake the soil in the trenches evenly and sow moderately thick. Carefully and firmly cover the seed, place a few wooden pegs along the rows, and strain one or two lines of white worsted a few inches from the soil. This simple plan, if done previous to the plants appearing above the soil, has never failed in protecting them from injury by sparrows, which in most gardens make such havoc with them at this period of their growth. When the Peas are about 2 inches high thin them out to 2 inches or 3 inches apart, selecting the strongest and best. Draw a ridge of soil close up to the plants and place sticks to them, as these greatly protect from cold winds during the spring months. Let the soil between the rows be slightly pricked over, and mulch the surface with partly-decayed manure; this will keep down weeds, prevent excessive evaporation during very hot, dry weather, and greatly invigorate the crop.

Sow the first early crop the end of January or beginning of February, in boxes about 6 inches wide, 6 inches deep, and 2 feet or 3 feet long, the ends of which should be portable; the Peas can then be easily removed without injury to the roots, carefully placing them in the trenches. They will scarcely feel the check, and with a little protection from the sticks, with a few evergreen branches mixed with them on the cold wind side of the rows, this sowing should be ready early in June. A sowing should also be made in the open air at the beginning and the end of February. This should be repeated each month until the end of June. This method will afford a supply for about four months. I have known a dish gathered daily from the same garden for thirteen weeks without intermission.

Careful gathering of the crop is well worthy of attention. The stems should be firmly held by one hand, while the pods are plucked with the other; this prevents breakage or pulling them up by the roots. The crop should be kept closely gathered as the pods become fit, for if left on too long they deteriorate in flavour, and greatly spoil the crop on the upper part of the stems, and thus lessen the return.

Twelve choice varieties are the following: — First early: American Wonder, 1 foot; William Hurst, 18 inches; Dickson's First and Best, 2½ feet. Second early: Dr. McLean, 3 feet; Duke of Albany, 5 feet; Sharpe's Queen, 3 feet; Prince of Wales, 3 feet; Stratagem, 2½ feet; Perfection, 3 feet. Late crop: British Queen, 7 feet; Ne Plus Ultra, 6 feet; Omega, 2½ feet. For the latest sowing use American Wonder and William Hurst.

H. Ellis, *Bowdon.*

Rhubarb from seed.—Where the stock of Rhubarb is not satisfactory and planting crowns are not available good results may be had from seed sown now in a box or boxes of light and rich soil, which should be placed for the time on a gentle hot-bed where the seeds will soon germinate, and the young plants may be put out when ready in May or June at 18 inches apart in rich soil. Though seed that has been saved separately from the best varieties is offered by seedsmen, a mixed strain will probably result from any such, however carefully saved, but as growth developes the best plants can be selected and marked for planting on the permanent plot in spring. In selecting such, the three points to consider are quick development, substance, and colour, but as the young plants will scarcely show their true character during their first year from the seed, only those which are positively worthless should be destroyed. Seed may also be sown in the open, but size is gained by sowing in heat, provided the young plants are carefully handled in planting. Old stools will derive considerable benefit from a good mulching of short manure, before giving which the plot should be pointed over with a garden fork. In pulling for use it should be

borne in mind that crowns are greatly weakened by the loss of too many leaves, so, to keep the plants strong, a fair proportion of leaves must be allowed to ripen.

Aubergines.—These are very little grown for cooking in England, and are required in only a few places. It is, perhaps, just as well that this should be so, as they are only profitable as an outdoor crop in the hottest and longest summers; still they give variety, and when in fruit are both interesting and ornamental. That there is a demand for them in this country can be proved by a walk through any of our larger vegetable markets when they are in season. In their cultivation free growth at all times is altogether essential, as any starvation will develop insect pests in abundance; so, the plants being tender, the beginning of April is quite early enough for sowing the seeds. This should be done in heat, and the young plants pricked off as soon as ready into 4-inch pots, hardened off, and planted out early in June. Plant out in good soil, and in a position such as would be selected for Tomatoes—*i.e.*, under a warm south wall. Allow about 2 feet between the plants, and water well throughout the season with liquid-manure. No stopping or otherwise denuding the plants of foliage must be permitted. Where house-room is plentiful it pays to grow and fruit the trees in pots under glass, and earlier fruiting is induced in this way, but the plants, owing to their liability to insect attacks, are not good neighbours in a mixed company, besides which they get ungainly through the amount of pot room they require to develop properly. Of varieties, the New York Purple and the Long White are the most useful.

Use of Dandelion.—A row or two of the large French Dandelion may be sown. Where winter salads are largely used this will be found an excellent addition to the more commonly grown salad plants. Strongly grown roots produce the best crowns for blanching, so the seed should be sown in cool, rich soil, and thinned to from 10 inches to 12 inches apart. Lift the roots early in winter and treat the same as Chicory.

Plants on walls.—Mrs. Lewis (see Gardening, April 10th, p. 74) should certainly sow blood-red and sulphur-yellow Wallflowers on her delightful grey stone wall; also the wild yellow Antirrhinums and other cultivated sorts would thrive there too. In Berkshire a flower of this sort, but of a purple shade, used to grow on such walls. Tall Hollyhocks planted close to the wall have a most pleasing effect when in flower. Personally, I should sow in favourable crevices a few seeds of scarlet climbing Nasturtium, giving water if necessary to induce germination, after which I think they would be sure to grow, as the Nasturtium does well in a poor soil, and seems to require very little root space. If these were successful, they would furnish a delightful warmth of colour during the summer months, and well repay a little trouble. The Mountain Toadflax is also a pretty covering for walls, but does not make much show.—A. A. Cobb, *Bleak House, Cambridge.*

Begonia glaucophylla.—There is a great dissimilarity in habit between the various Begonias in cultivation; some, such as B. corallina, throw up strong Bamboo-like shoots to a height of 6 feet or more; others, including some forms of B. semperflorens, are of neat, compact growth and but a few inches high, while B. scandens climbs like Ivy. B. glaucophylla, the subject of this note, has long creeping stems, and is seen at its best when grown in a suspended basket, as the shoots, regularly furnished with distinctly undulated leaves of a glaucous green hue, will hang down for a considerable distance, while what is more, in an intermediate house temperature it will flower throughout the winter, and, in fact, during the greater part of the year. The blooms, which are borne in compact axillary clusters, are of a sort of salmon-red colour, an uncommon, yet attractive tint. It is quite an old kind, but is rarely seen, though for such a purpose as above indicated it stands out as one of the very best. Beside the specific name of glaucophylla, it is also known as B. undulata and Comte de Limminghe. Cuttings strike root very readily, and once established they grow away freely.

A GROUP OF GARDEN IRISES.

The following Irises represent a very distinct and noble group, and not troublesome to grow in gardens. One of the finest is

I. ochroleuca.—Like others of the spuria group, this is of a hardy accommodating nature, and although usually supposed to need swampy ground, few Irises will thrive better or give more satisfactory results in the ordinary mixed border; indeed, as a border plant it has few equals, the large showy flowers produced in great abundance, the luxuriant foliage and massiveness of the groups being extremely effective. I. ochroleuca gigantea has larger and finer flowers than the ordinary form, but differs in no other way. I. Kerneriana differs only in its smaller flowers and much narrower leaves, and may possibly be the wild original of the species.

I. Monnieri and I. aurea are closely allied species. The former is, in my opinion, the handsomer, and should be more generally grown than it appears to be at present. Its fine, full, golden-yellow flowers, produced freely, are very beautiful. It blooms later than most of the other species, in most seasons even after the varieties of Kæmpfer's Iris. It is a native of Crete, and a very accommodating plant.

A group of the Golden Flag (Iris aurea).

I. aurea, a native of the Himalayas, was said to have been first raised at Fulham in 1840 from seeds sent by Doctor Royle. It seems to do best in a moist spot, and, when doing well, flowers freely; the colour of the flowers is nearly the same as in I. Monnieri. The difference chiefly is in the plaited or crumpled margins of the falls.

I. Monspur is nothing more or less than a glorified I. spuria, and more nearly resembles the variety notha than any other Iris I know of. It is a seedling, raised by Dr. Foster, between I. Monnieri and I. spuria; a very beautiful plant, and well worthy of a place even in select collections. The variety notha differs from the typical I. spuria in being altogether a larger plant, considerably more rigid both in stem and leaves, and with a much longer spathe valve. This plant is said to be found in the salt marshes of Siberia, from whence it was introduced by Pallas about 1870. When grown well, which is by no means difficult in ordinary garden soil, it is a decided acquisition, and a most effective plant when in full flower.

Taking the group as a whole, they are well worth caring for, their free and graceful habits, long, arching, handsome green leaves, and variously coloured and marked flowers giving them a strong claim on the cultivator with a love for variety as well as beauty. D.

ORCHIDS.

THE BUTTERFLY ORCHID.

Oncidium Papilio is a well-known and beautiful kind, remarkable for its striking resemblance to a butterfly. It has roundish rough pseudo-bulbs, each bearing a solitary leaf that when the plants are in good order is very ornamental, being deep green, mottled with purple-brown. The flower-scape issues from the base of the bulbs, and produces many flowers successively at the apex. A good deal of variation will be found in the flowers, some being much brighter in colour than others, but all have a showy yellow lip, margined, as a rule, with chestnut-brown. It may be described as a constant flowering kind, the plants being rarely out of bloom except for a month or so in midwinter. Plenty of peat and moisture are requisite to grow O. Papilio, and it may be cultivated in a variety of ways. Blocks dressed with Sphagnum Moss, baskets, and small pans may, any or all of them, be used, the chief points being to ensure a sweet root-run, not to bury the roots deeply, and while giving moisture enough to maintain growth, carefully avoiding a too wet state of the compost. The Sphagnum, if grown on blocks, may be allowed to grow freely enough in summer. I have frequently had it hiding the pseudo-bulbs entirely, but some at least of this must be removed in winter, as it would hold too great a quantity of water. If reared in pans a little peat-fibre must be mixed with the Moss, also plenty of charcoal and small crocks. It is an old species in cultivation, having been introduced as long ago as 1823 from Trinidad.

H.

Burlingtonia fragrans.—It is somewhat early for Burlingtonias to be in flower, but several newly-imported plants of this species are now very pretty in the Cattleya-house. The plants in question were received early last autumn, and, as showing how easily they may be established, it may be mentioned that the pots are apparently filled with the roots and a good set of young growths has been made. I am convinced that many of the failures with Burlingtonias are due to allowing them to grow out of their pots or baskets, the elongating rhizomes carrying the pseudo-bulbs, and, therefore, the roots, out of reach of the compost. It is an easy matter to remedy this, for the rhizome may be notched and the base of the pseudo-bulbs brought into contact with the compost without checking the plant or doing any harm whatever, a little new compost being added to

fill up any bare places and to hold the bulbs in position. B. fragrans bears rather loose spikes of flower, semi-erect, and slightly arching. The individual blossoms are pure white, saving a blotch of rich yellow on the lip, which really enhances the purity of the sepals and petals. These last nearly a month in good condition, and all the time they are in bloom emit a pleasing fragrance suggestive of Hawthorn. If grown in pots these must be placed in a good light, or the plants may be wired to rather large blocks dressed with Sphagnum, this allowing of the pegging down of the pseudo-bulbs without cutting the rhizome. They require a regular and constant supply of water the whole year round, rather less being naturally needed when the growth is inactive than when the plants are growing freely. Their worst insect foe is a soft white-scale, that if it once gets a hold about the sheaths that clasp the pseudo-bulbs is very difficult to eradicate. Very frequent sponging is the only remedy, and this must be persevered with or healthy plants must not be expected. B. fragrans is a native of Brazil, where it is found growing on the tops of high trees, and was introduced in 1850.—R.

Phaius grandifolius.—The flower-spikes of this fine and useful old Orchid are rapidly advancing, and it may not be out of place to warn cultivators against letting aphides get the upper hand before the blossoms open. These insects soon ruin the appearance of the flowers, but if the spikes are examined every few days and a damp sponge placed over them, it will keep them clean. To get the best results with this Orchid it must have very liberal treatment, a sound rooting medium, containing plenty of plant food and yet not too heavy or close, with liberal supplies of water at the root and over the foliage while growing. The best time to repot is just after the flowers are past, and, unless the roots are in a really bad condition, it is unwise to disturb them much. There is often a great number of young shoots around the old bulbs, but these must not all be allowed to grow, the suppression of some of the weakest throwing more strength into those that remain. P. grandifolius thrives best in the Cattleya-house in a shady, moist position, and must be kept free from thrips and scale. During winter but little water at the root will suffice to keep it in good condition, and a temperature of 50 degs. is ample. The flowers are white externally, the sepals and petals being dark brown inside, the lip white, variously marked with crimson, brown, and yellow. It is one of the oldest cultivated species, having been introduced from China in 1778.

Oncidium Marshallianum. — This deserves the most careful treatment, and it is a great pity to see so many plants of it dying annually from want of attention. Too much cannot be said in its favour as a garden Orchid, and it is certainly about the most effective cool-house kind in cultivation. The superb spikes are crowded with flowers, which average 2 inches across, of the brightest golden-yellow, save a few spots of purple and brown about the sepals and petals. It thrives best in the warm end of the Odontoglossum-house, and may be potted in about equal parts of peat-fibre and chopped Sphagnum used in a rough, open condition, as the roots are fairly large and fleshy. Good drainage is essential and also plenty of charcoal in the compost, as this helps to keep the bulk sweet. This also does well on rafts suspended from the roof, but the plants will, of course, be taken down when in flower, as the spikes grow erect and would not show to advantage in such a position. O. Marshallianum is a native of Brazil, introduced in 1866.

The best Clivias.—Though there may be differences of opinion as to whether the correct generic name of these plants is Clivia or Himantophyllum, there can be no doubt, I think, that varietal names are bestowed far too freely. There does not appear to be any decided system of nomenclature adopted with these plants, for in some cases at least the names seem to be given according to the fancy of the exhibitor, and whether the particular plant is distinct from those grown by other cultivators is left to chance. A good deal of this confusion is owing to the fact that seedlings are raised in considerable numbers, and plants propagated in this way cannot be depended upon to perpetuate the characteristics of any particular form, and while some of the progeny may be equal to, or even superior to, the parent plant, the chances are that a certain number will be greatly inferior. Though varieties may be selected from the colour, size, conformation, and other features of the flower, yet even then the range is not great. —R.

THE CHINESE DATE PLUM OR PERSIMMON.

As we have received several queries lately about this plant, we give an illustration of it, as likely to interest those readers especially who have written about it. In Gardening, April 10 last, p. 82, we gave in reply to a query some account of this tree (Diospyros Kaki). As reference was made so recently to it, we refer our readers to what was there written about it. The true Persimmon is D. virginiana or Virginian Date Plum, which is a native of the United States, and grows to a height of over 50 feet. The fruit is over an inch in diameter, almost round, of an orange colour, and bitter in taste, which disappears to a large extent when exposed to frost. Persimmons are made into cakes with bran in the Southern States, and according to the "Treasury of Botany," p. 411, "by adding yeast and Hops to an infusion of the cakes, a kind of beer is brewed; or by fermenting and distilling them they yield a spirituous liquor."

Fruit of the Chinese Date Plum (Diospyros Kaki).

Flowers fragrant in the evening.—Those who require perfumes in the warm months near their dwellings should have an extensive bed of German Iris, Thyme, Mignonette, Violets, Lavender, Petunias (the large white single is the best), Pinks Mrs. Sinkins and Her Majesty, Matthiola bicornis (Night-scented Stock), Nycterinia, Nicotiana, Lemon-scented "Geranium," and Stocks of all kinds, a long trellis-work covered with Sweet Peas, a few bushes of Sweet Brier, and some select Roses. By making small, sunk hot-beds in a sunny border, clumps of Tuberoses, brought forward under glass, can be made to flower in the open air with a little attention. These are the strongest scent-yielding plants after sunset of any in cultivation.—W. H. L., *Cumberland.*

Azalea Deutsche Perle.—Of all the greenhouse Azaleas this is unquestionably the earliest, and being very free-flowering and pure white it is very valuable for early work. Those who have to supply cut flowers in any quantity must find it a most valuable sort for this time of the year.

Flowers for winter-blooming (*J. L. C.*).—Persian Cyclamen, Cinerarias, Primulas, Eupatoriums, Dutch bulbs generally, Freesias, Lachenalias, Spiræas—in fact, there is scarcely an end to plants suited for this purpose—Genista fragrans, Heathe, Epacris, Zonal Pelargoniums, Bouvardias, etc. But you do not say if you possess a greenhouse, or whether heated or not, or if you wish to know what plants could be grown solely in the ordinary living room; therefore we are at a loss to afford you a more definite reply. Please write again.

ROSES.

Picking off Rose-buds.—I have a number of standard Rose-trees (old trees), Gloire de Dijon, La France, Sultan of Zanzibar, etc., and they are covered with buds. I have been told they should be picked off, as they will do no good. Will you kindly tell me if this is right? I did not prune the trees until late in March. Also standards budded in summer of 1895 have the same buds on all the shoots. It seems to me very early for flower-buds. There were some small buds when I was pruning the trees.—Countess.

*** Your plants are certainly very forward. As to whether the buds come to maturity or not depends entirely upon the weather. We should not pick them off; if cold checks them, others will break from below quite as freely as if you removed those now borne.

Manure for Roses.—My Roses have been mulched with manure for some years, and I am advised to give them some raw bone-meal. Would that do instead of manure, and how should I apply it, and how much to each plant? Also should be glad to know if the sediment from a sewerage tank would do for mulching.—Rose.

*** Our correspondents are far too vague when asking advice respecting manures. You do not give any clue to the size of your Rose plants, nor how closely they are planted, or whether strong climbers, medium growers, or the tiny Fairy section. This makes it impossible for us to answer in safety, and we would recommend you to apply manure as usual, and leave the other two alone, seeing your plants are evidently thriving under present treatment.

Canker in Marechal Niel Rose.—Will you inform me through your valuable paper if Maréchal Niel Rose always gets canker, and how to avoid it? I planted one outside my greenhouse last autumn, and brought the branches in; but I am told it only yields one crop of flowers, and also that it gets canker after a time. Should I prune the branches of my Maréchal Niel when it has flowered? Is Catherine Mermet a good climbing Rose for greenhouse? —Mrs. Joe.

*** We know of many cases where Maréchal Niel has lived for years without developing canker. It is a disease not understood, and we cannot say how caused, except that excessive bleeding from heavy pruning while in full growth, and also working it upon an unsuitable stock, seem to bring on this disease in several cases. We hope yours will succeed. Catherine Mermet is not a climber, and seldom exceeds 3 feet or 4 feet as a bush Rose.

Rose shoot withered (*C. H.*).—The specimen sent was too withered to describe the disease which is attacking your Rose-trees. But judging from query the Rose-trees are mildewed through cold winds. Dust the affected parts with sulphur, or syringe with a solution of sulphur water on a dull day, using a quarter of a pound to two gallons of water. Keep well stirred when using. Continue this practice occasionally, or whenever the disease shows itself. Also cover the hot-water pipes with sulphur. Be careful as regards ventilation, especially at this time of the year, when cold winds are prevalent.

Lily of the Valley, Larkspurs, etc (*Two Children*).—Lily of the Valley enjoys a partial shade, but needs plenty of moisture when near trees and shrubs. Give this while they are growing freely, after the bloom is past. Larkspurs will succeed if you manure well with stable dung. The best flowers for cutting in a dry soil are Calceolarias, Arabis, Pansies, Cornflower, Nasturtiums, Phloxes, alpine Auriculas, Forget-me-not, Cherry-pie, Fuchsias, Lunaria, Columbines, and Sweet Sultans. We are always pleased to hear from young amateur gardeners, and your questions are put very plain compared to the majority that reach us.

FERNS.

VARIEGATED FERNS.

All Ferns whose variegated character is constant well deserve special attention, being attractive at all seasons of the year, but particularly so in the winter. Although not numerous, variegated Ferns must, for the sake of simplifying their culture, be divided into two sections—those which require stove-heat, and those which, even during the winter months, are perfectly satisfied with cool treatment.

Stove Ferns.—Of these the popular East-Indian Pteris argyrea may justly be considered to be one of the best representatives, as it is a robust grower, with gracefully-arching fronds, which under liberal treatment often attain large dimensions, and also on account of its variegation being particularly well defined and striking, the silvery-white in the centre of the fronds and pinnæ contrasting in a pleasing manner with the lively green by which it is surrounded in every other part of the plant. Although it is sometimes recommended for growing in a cool-house, where it does very well in summer, it evidently requires a higher temperature in winter, as under cool treatment it almost invariably shows tendency to assume a brownish colour, thus clearly indicating its dislike to cold. Then there is the charming Pteris tricolor, also an East-Indian species, but, unfortunately, one which is generally considered to be somewhat difficult to manage; indeed, it is only now and then that it is seen in good condition, and yet seemingly without any special point in its culture being noticeable, in reality its well-being seeming to depend more on local or climatic influences than on even skilful treatment. As a proof of this it may be stated that in some places, where for years it only contrived to exist, it occasionally makes a sudden rush, and for a certain time afterwards grows apace.

Doryopteris nobilis is another good plant requiring a stove temperature, and it is one well worthy of a little extra attention. This Brazilian Fern produces fronds which in their young state are simple or sagittate, but which, as the plant gains strength, become palmate, when they then sometimes measure from 12 inches to 18 inches in height, and nearly as much in width. Their colour is bright green, and the centre of the fronds or of the segments is ornamented throughout with a broad, white band, which becomes gradually fainter as it approaches the edges. Several Adiantums have also at different times shown some indication of a strong predisposition to variegation, and one of the most striking features of variegated Ferns is that with scarcely any exception they faithfully reproduce themselves from the spores (seeds). There is a variety of Adiantum formosum, the fronds being of a light green ground colour, dotted and splashed over with pale yellow. This is very pretty. The most admired, however, amongst these variegated Adiantums is an extremely pretty form of the West Indian A. macrophyllum. This has preserved its erect habit, and its fronds attain from 12 inches to 18 inches in height. When young the fronds are shaded with a delicate pink or red colour, splashed over freely with yellow. With age the ground colour of the fronds changes to a bright green, and the yellow markings then predominate, and remain, as long as the frond lasts, perfectly distinct and prominent.

Greenhouse Ferns.—Amongst these may be found some finely variegated kinds. The one which reasonably claims to be the most distinct, and at the same time most generally useful, is the widely-spread Pteris cretica albo-lineata, from Japan. It is a very popular plant in Covent-garden Market, and many thousands of it are sold there every year. The well-deserved favour in which this Fern is held is undoubtedly due as much to its enduring character as to the beauty of its variegation. It is particularly well adapted for dwelling-room decoration, where, provided it receives careful treatment, it will remain for a long time in perfect health, the broad silvery bands which occupy the centre of its fronds and the bright green colour peculiar to their edges being very attractive. This species differs from other Pteroises in that the barren and fertile fronds are dissimilar, the barren ones furnishing the body of the plant, while the fertile ones, erect and well above the others, give it a highly ornamental appearance. Pteris nemoralis variegata is another greenhouse variegated Fern, but, as in Pteris serrulata cristata, the variegation, though constant, is not very distinct. In Lastrea cristata variegata we have a fine Japanese variegated Fern, and one of the most enduring for a cool-house. There are two more greenhouse species, which are, perhaps, not strictly variegated, but dotted all over with white, producing quite a variegated effect. These are the South American Nephrodium albo-punctatum and the Australian Gymnogramma Muelleri, beautiful but now rare plants. The Japanese Athyrium Goringianum tricolor is nearly a hardy plant in some parts of England. As its name indicates, it has fronds of three colours—green, white, and claret colour. The colours are not so bright as in those of Pteris tricolor; but it is much more easily cultivated, and therefore to be recommended. It will succeed in an ordinary greenhouse, and, as before said, in the open fernery in some warm and sheltered parts of this country.

S. H.

TREES AND SHRUBS.

EVERGREEN WALL SHRUBS.

We have an almost unlimited choice of shrubs suitable for clothing walls, but many of them are deciduous, and in some positions this is a decided drawback, hence those only that retain their foliage throughout the year are required. In making a selection of the best the following are all worthy of notice—

Ivies.—No mention of evergreen climbers would be complete without the Ivies. The leaves of all are so handsome and the forms are so numerous and so varied, that a wall can be made very beautiful by growing a collection of Ivies thereon, when, apart from the ornamental qualities of the plants, they will be interesting as showing the many dissimilar kinds, that is if the varieties have been well chosen.

Camellias.—It is generally recognised that among evergreen plants for a greenhouse wall the Camellias stand in the very first rank, but the fact that they are hardy, at least in many districts, and may be employed for clothing a south wall out-of-doors is frequently overlooked.

Garrya elliptica.—This Californian evergreen is usually regarded as tender and requiring the protection of a wall. Though this is not the case, yet it is a very ornamental wall shrub, and possesses the great advantage of being nearly indifferent to the aspect it occupies. When a wall is completely covered with its deep green leaves, and veiled by the long pendulous catkins which are so freely borne, a good specimen of this Garrya is then wonderfully distinct and pleasing. The male plant is that which produces these showy catkins, the female form being very rarely met with.

Cratægus Pyracantha.—The Fire Thorn is too well known to need anything said as to its value for clothing walls, as its brilliantly-coloured berries are to be seen lighting up many a dwelling-house during the winter months. Some forms of this are superior to others, that known as Lælandi being one of the best.

Magnolia grandiflora.—This is the only evergreen member of the family that we have to deal with, and being naturally quite a tree, it is of course available only for lofty walls. It is in some districts a favourite plant for training to a dwelling-house, and in the case of a gable-end facing the south a large plant may be allowed almost unrestricted range. The solid-looking leaves are always handsome, and serve as an admirable setting to the massive, pure white, fragrant blossoms.

Escallonia macrantha.—The dark-green, very shining leaves of this Escallonia are always bright, while in the summer the red blossoms are freely borne, and then a thriving specimen is really charming. It is one of the best of a very attractive genus of plants, and also one of the hardiest. In the more southern part of England I have seen the uncommon E. montevidensis do well as a wall shrub. This is a vigorous grower, and bears its white blossoms in terminal clusters.

Myrtle.—In districts where the Escallonia will thrive the common Myrtle is also a capital wall shrub, as it is in the first place a universal favourite. The rich mass of foliage it presents when in a thriving condition contrasts markedly with the pure white blossoms. The narrow-leaved form is also grown, but as a wall shrub, at all events, the common kind is superior.

Euonymus japonicus.—It is as a fine-foliaged plant that this Japanese shrub, represented in our gardens by several varieties, claims recognition. The leaves are of a bright glossy green and in some forms are beautifully variegated. The golden-leaved variety, whether on a wall or as a bush in the open ground, needs watching for any shoots bearing green leaves only, as they are much more vigorous than the variegated portions and will quickly gain the supremacy. The smaller-leaved Euonymus radicans will also clothe a wall with a dense mass of foliage. Of this the variegated variety is that most generally met with, and very pretty it is when in good condition.

Berberidopsis corallina, a native of Chili, is an ornamental climber, quite distinct from anything else in our gardens. It needs the protection of a wall facing either the south or west, as in such a position the wood will be thoroughly ripened and it will then flower freely. The leaves are dark green, leathery in texture, and spiny at the edges. The pendulous blossoms, which are not unlike those of a Barberry, are borne singly on long stalks, and present a strikingly beautiful appearance when seen in quantity. Their colour is bright crimson.

Choisya ternata (the Mexican Orange-flower) will clothe a wall of moderate height, and in early summer when in full flower it is particularly effective. The flowering depends to a very great extent upon the wood being well ripened, hence plants of this trained to a wall bloom, as a rule, more profusely than those in the open ground.

T.

Destroying Elm-trees.—In answer to the question No. 370, asked in your most obliging paper of April 10th, as to the best way of destroying Elm-trees, I can give my experience under practically similar circumstances. I had an Elm-tree which threw up rootlets all over my lawn. I cut the tree down last year and bored a hole, about 4 inches deep, with an auger, in the heart of the stem, into which I poured paraffin-oil, and I kept on filling it up as the oil sank in. The tree is now quite dead, and, as far as I can judge, the roots are dead also. I should also like to mention that in renovating lawns I find that by covering newly-sown Grass-seeds with matting they germinate much more quickly, and are well protected from the depredations of the sparrows.—Nauticus.

Lilacs for early forcing.—These are always much appreciated, and most people who frequent good florists' shops during the winter season are conversant with the quantity of these that are taken to market. In private gardens they are not grown to the degree they ought to be, considering the little trouble that is needed to obtain them early. If plants are kept in pots and well cared for they can be had in bloom from Christmas onward with little forcing, provided that when the blooming is over the plants are protected by glass, so that the young growth is not injured. We have some plants always in flower for Christmas that are growing in 14-inch pots. These plants have been used for this purpose for eight years in succession, and every year they give us an abundant crop. Our method is to bring the plants in under glass before severe frost comes, about the end of October, placing them in a cold house. About the middle of November we put these in a vinery, where the Grapes have been cut, and which is kept at a temperature of 45 degs. to 50 degs. Here they soon start, and are well in bloom by Christmas. As soon as the flowers are all cut, the plants are cut into shape, and allowed to remain here for a month or so, when they are taken into a cold greenhouse. As the days lengthen we remove them to a cold orchard-house till we can place them out-of-doors for the summer. They need but little potting if kept well fed with liquid and other manures during the growing period.—John Crook.

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately, three-halfpence, post free, from this office.*

HOUSE AND WINDOW GARDENING.

TABLE DECORATIONS.

Flowers for Artificial Light.

In making a selection of flowers for the purpose under consideration it is necessary, if the richest and brightest effects are to be obtained, that only colour of the proper kind should be used. Thus, for a display under artificial light, select possibly a shade of colour altogether different to that chosen for a display during the day. The majority would look decidedly pretty under both lights, but at the same time it is possible to make such a selection that even dainty displays would be in a measure spoilt and bright arrangements considerably dulled by the gorgeous array of colour. The richest shades of colour for artificial light are scarlet, crimson, pink, orange, and yellow; purple and magenta shades are also seen to advantage under similar conditions. Warm white with either of the latter colours always provides a pleasing contrast.

Harmony of colours.

The proper association of colours is probably the most important point in the arrangement of cut flowers, and, judging from results seen at many exhibitions, and more particularly in the homes of those really interested in making a display on their own dinner-tables, how very often have the results been anything but pleasing? Colours are frequently associated which give neither a proper blending nor a pleasing contrast. Many collections of flowers are utterly spoilt by the haphazard way in which the colours are placed together. This may be avoided in all cases where those arranging the tables have a variety of material sent to them to deal with. Instead of setting up the flowers indiscriminately, without any regard to the proper blending of the colours, the different colours may be placed together and small vases or other suitable receptacles filled with flowers of one colour. In finally disposing of them upon the table it may be possible to place the colours in such a way that pleasing contrasts, if not actual harmony of the colours, can be brought into effect. Such a dilemma often presents itself early in the year, when the supply, perhaps from one small greenhouse, can only provide a limited quantity of a number of different families of flowers—altogether a very miscellaneous lot. But by dividing up, however, the blossoms in the manner I have just described, it is possible to make an interesting display. To arrange a dinner-table successfully, one must understand which colours should be placed together so that they each can give an account of themselves, and also lend additional charm and richness to the other colours with which they are associated. In arranging cut flowers artistically no complicated system of associating the colours is necessary, as the best effects are simplicity itself. Those which are known as warm colours are easily placed, the most pronounced being scarlet, crimson, pink, orange, yellow, and cream or warm white. From these selections of colours it is possible for the simplest novice to get a happy blend. One of the best selections of this set, and for evening decorations in particular, is the association of yellow and orange, rather more of the former than the latter, and the careful use, not too freely, of scarlet or bright crimson. This is probably one of the most popular blends of colour with floral artists, and if a proper quantity of each colour be brought together, the result is very beautiful. These colours are well represented in the Iceland Poppies, the Japanese Chrysanthemums, and some of the choicer forms of the Daffodils, those with the rich orange perianth, sometimes edged bright crimson, lending themselves splendidly in this association of colours. The single flowers of the Tuberous-rooted Begonia are well represented by these colours, and if arranged satifactorily with suitable foliage the display under artificial light is very rich. With these so-called warm colours there are also many intermediate shades to select from, and to be used for blending with other tones somewhat similar should the supply necessitate it. Thus flowers of orange-scarlet, crimson-scarlet, salmon, rosy-pink, buff, terra-cotta, bronze, and amber may be used in conjunction with those somewhat similar in shade. Another chaste and refreshing trio would be pink, blush, and white. An equal number of these three colours would produce a delicate colour effect, and would also be a pleasing combination for a change. With the warm colours, too, some rich contrasts may be obtained, such as an equal number of rich crimson flowers in association with those of deep yellow, or a vase of each colour in close proximity to each other will give a beautiful contrast of colour. A somewhat unique contrast may be obtained by the association of flowers of bright rose-pink with those of a buff or fawn colour. These colours are seen in large numbers in the Tuberous-rooted Begonias. Before leaving the consideration of the warm shades of colour for those of, perhaps, a less interesting kind, too much emphasis cannot well be laid upon the importance of using these colours freely, and for providing a variety in arrangement to fill vases with flowers of one colour only, and placing these in such a way upon the table that each one shall lend additional warmth and beauty to its neighbour. By these means it may be possible to have a sequence of the proper order of colour. The colours which rarely find favour are those of purple, magenta, lilac, and mauve, and many, no doubt, wonder where a place may be found for them, and in what association. Both purple and magenta flowers are seen to great advantage under artificial light, and when used in conjunction with lilac and mauve they make a rather singular combination, and a welcome change for a dinner-table display. Under the same conditions a contrast may be brought into effect by using either white or pale yellow flowers with those of purple, magenta, or lilac. White flowers may, of course, be used everywhere, and are never seen to better advantage than when arranged with rich tan or copper-coloured leaves White and yellow flowers are a pleasing association, especially when those of the latter colour are of deep, rich yellow. White and Yellow Tulips are a splendid illustration of the usefulness of these two colours, and may be used both day and night, but are seen to greater advantage under artificial light when associated with plenty of greenery. There is one other colour which is surely deserving of recognition, and that is blue. For use during the daytime flowers of this colour may be used with advantage either alone or in association with others of a white or yellow shade. Violent contrasts with flowers of a blue colour must be avoided, and only those of a delicate kind employed. This may be achieved by using warm or cream-white and soft yellow flowers, when a soft and restful combination will result. It is useless to attempt to arrange these colours for an evening display, as the blue shade is lost, although when using the other flowers in contrast some little effect is gained.

Wild Cherry-flowers and Larch in a vase. From a photograph by Mr. S. W. Fitzherbert, Lanscombe House, Torquay.

The illustration shows a very simple but beautiful arrangement: Wild Cherry-flowers and the feathery shoots of the Larch—an arrangement one seldom sees, but in every way pleasing.

D. B. Crane.

Making a bungalow gay.—Would you kindly advise me about my flowers? We are building a bungalow on the north coast of Cornwall, climate mild, winds and gales trying for plants. I shall have a greenhouse facing south (without heat) and an open verandah facing north and east, getting morning and evening sun. I desire to bring on in the greenhouse strong hardy plants to keep the verandah bright with flowers from March to November. We shall be away during the winter months, in which case when we left I should put the hardy roots in the garden, and those needing shelter in the greenhouse; but beyond a little water I fear they would get no attention until we returned the following spring. Could you kindly name any plants and climbers you think suitable, and the best kinds of Carnations, Roses, early-flowering Chrysanthemums, Violets, Lilies, and single "Geraniums," Calceolarias; no rare sorts, but bright, hardy kinds. Would Austrian Briers grow up the verandahs?—Bungalow, *Newquay, Cornwall.*

*** We fear you are expecting [illegible] of your greenhouse and garden, [illegible] such little attention as it will evidently receive. There are no bright flowers that would do for the exposed verandah so early as March, while November would probably be a trying time for a north-east aspect when fully exposed. We

should be very pleased to name several subjects if we knew a little more of your requirements, bnt as you really cannot leave a variety of plants uncared for and still have them in beauty from early spring to early winter, we recommend you to look around you to take note of what hardy subjects are thriving best in your locality. Clematises and Roses are hardy, the Austrian Briers particularly so; but you are certain to secure better results in your case by taking local advice and planting what proves to do well in your locality, bearing in mind how very exposed your bungalow will be. Perhaps some readers of Gardening in the neighbourhood would help our correspondent.

INDOOR PLANTS.

PROPAGATING TRADESCANTIAS.

There are no more easy plants to propagate than these, provided one can give them a warm and moist temperature, nor are many subjects of greater beauty and usefulness for the rock garden and beneath the benches of greenhouses. Around the edges of the conservatory-walks, also for pots, hanging-baskets, etc., they are showy, quickly grown, and seldom affected by insect foes. Many of them are beautifully variegated, and if cuttings be placed around a 4-inch pot they rapidly form a useful edging to groups and stands of plants in the hall or corners of our rooms and conservatory. Our illustration shows the best form of cutting, but the points may also be used. Insert in a sandy compost of leaf-soil and peat, water well, and simply keep them sprinkled and free from bright sunshine for a few days. Tradescantia virginica, the common Spider-wort, is one of the most useful of hardy plants, and thrives well in and near towns. This is easily increased by division of roots or cuttings.

Tradescantia-cutting.

CALCEOLARIAS.

These very showy subjects require more than ordinary care to ensure success in their culture. This is proved by the fact that, although thousands of packets of seeds are sold annually, one seldom meets with a well-grown and flowered batch. More destruction occurs amongst Calceolarias through the attacks of green-fly than from any other cause, the pest being encouraged by keeping the plants in too dry an atmosphere, and allowing the roots to become dry. I am told that Calceolarias do much better, as a rule, in Scotland than in England, climatic influences no doubt accounting in some measure for this, a naturally moisture-laden atmosphere, yet free from stagnation, seeming to suit them best. When the grower finds the margins of the leaves hanging with dewdrops in the morning he may rest assured the plants are at home. Care is needed in preparing the pots or pans for the seed, this being so minute, that if more than just covered with soil or sand it has no chance of germinating. The best way is to drain the pans to at least one-half their depth, and to place a good layer of fibrous loam or some Moss over the potsherds, filling up with a compost consisting of finely-sifted loam, leaf-mould, and silver sand, pressing it firmly and taking care to secure a perfectly level surface. In sowing it is best not to attempt to take the seed between the finger and thumb, as not unfrequently it falls to the ground in the attempt, but to open the end of the packet containing it and gently tap it with a small label, moving the hand regularly over the pan at the same time. After scattering a little silver sand over the seed and pressing the surface with the bottom of a small pot, the pans should be removed to a shady part of the house having a night temperature of about 50 degs. I have sometimes placed a layer of fresh, clean Moss, free from insects, over the soil, first sprinkling with a fine rose, and finally putting a pane of glass on the top. If sufficient shade is given, it is seldom any more water is needed until the seedlings appear. The end of May or beginning of June is a capital time to sow the seed for producing a batch of plants to bloom at the same date the following season. When plants bloom later in the season they are not generally satisfactory, the atmosphere then being too hot either for the proper development of the foliage and flowers or for continuing in good condition over a normal period. As soon as the young plants appear the Moss and glass must be removed and shade still continued.

Watering such tender subjects is delicate work, and I have found it the safest and best plan to dip the pan in a tin of water and hold it there for a few minutes, taking care that it does not float over the rim; the water will thus gradually rise up from the hole at the base and moisten the roots. When the second pair of leaves has formed, the plants may be potted carefully into very small pots, being gently raised from the soil with a piece of pointed stick. The compost should not be sifted this time, but merely rubbed down finely with the hands. Some recommend a percentage of peat, but I prefer light loamy soil containing abundance of fibre, with the addition of leaf-mould, well-decomposed cow-manure, and coarse sand or even road-grit. After potting, remove the plants to a frame having a north aspect, standing on a hard ash bottom and tilting the lights over them until well established. Total exposure must then be practised in fine weather, but on no account must heavy rains be allowed to sodden the soil. A slight fumigation with Tobacco-paper should be given every three weeks, even if green-fly cannot be detected, as if once the pest is allowed to get a footing the severe measures needed to dislodge it are apt to disfigure if not ruin the plants. On warm afternoons a spray from the syringe will be beneficial, and by the autumn the plants will be ready for their final potting. Pots from 8 inches to 10 inches in diameter will accommodate the largest and best, the smaller ones being given a 6-inch pot. It is best to leave the plants in the frames as long as possible; indeed, if the pit has a pipe running round it, and just enough heat is turned on to exclude frost, they may with safety remain in the frames till spring. A friend of mine once had a grand batch of plants which he left in the frames, building up linings of leaves and litter, and covering with mats and Bracken during severe frost. At one time they were kept in darkness for a fortnight, and when uncovered were not in the least injured. They must not be set close to front lights that are opened for admitting air, as draught is injurious to the soft, tender foliage. Watering with weak liquid-manure made from sheep-manure is highly beneficial, and if as soon as the plants come into flower they are removed to a north house, or even a frame, and plenty of air given, they will remain a long time in good condition. J.

SHRUBBY CLEMATISES.

Since the introduction of the Chinese and Japanese Clematises, C. patens and C. lanuginosa, the many beautiful old species that were so much prized in the past have been somewhat under a cloud. For the past thirty years, the beginning of which period the glorious race of Jackman hybrids came into existence, a recognised successful intercrossing of the Eastern C. lanuginosa and C. patens with the European C. Viticella and the existing hybrids of C. integrifolia, popular favour has run in the direction of the new race of climbers, leaving the old garden species to take refuge in botanical collections in order to escape extinction. Among these was that fine old border plant,

C. integrifolia, a native of Central and Southern Europe, that had been for many a generation a treasure to the gardeners who then did not have such an embarrassing multitude of good things to choose from. It grows 4½ feet high, and bears dark violet velvety flowers each from 3 inches to 4½ inches across, with yellow stamens. It blooms continuously from the end of May till the middle of October. Although this is, I believe, the only recorded instance of a hybrid between C. integrifolia and C. lanuginosa, there are other hybrids between C. integrifolia and the European C. Viticella, the first being the beautiful old C. Hendersoni, raised between these species in 1835. This is a beautiful variety with deep purple-blue flowers, not so large as those of Durandi, and it is still in nurserymen's lists. Another hybrid integrifolia was raised between C. integrifolia and C. recta, the old small white-flowered, sweet-scented border species. This was called C. cœrulea odorata, but is now named at Kew C. aromatica. It has a profusion of rather small purple flowers, which take the perfume of C. recta. Probably the Continental-raised varieties bearing the names of C. intermedia rosea and C. diversifolia cœrulea have much the same origin, and there may be others, but, so far as I have seen, none can compare in beauty with C. i. Durandi.

The other shrubby Clematises are few. Besides C. recta (or C. erecta) and its double-flowered variety, a beautiful plant, which on account of its fragrance is worthy of inclusion in the choice herbaceous border, there is C. lathryifolia, now considered a variety of C. recta. It is, like C. recta, a profuse flowerer, and grows from 3 feet to 4 feet high. A very fine plant is the Chinese C. tubulosa (now called C. heracleæfolia) and its variety C. Davidiana. These are vigorous plants, with broad, deep green foliage, and produce about the end of summer and autumn a profusion of clusters of curiously-shaped tubular flowers of a purplish blue. Davidiana is the best variety, and when this is established as a specimen 5 feet or 6 feet through it is an uncommonly fine object. Both are quite hardy, but for some reason or other both seem very partial to the shelter of a sunny wall. It is a plant I should recommend everywhere, for it is not particular, though it evidently delights in a sheltered, moist, deep, and light soil. C. integrifolia and its hybrids, though strictly herbaceous, are, I think, best suited to a place where their stems when in bloom can fall about in their own way, not tied up like a broom. The flowers are large and seem to be too much for the slender stems, as there is a drooping tendency in the flower-stalks.

Such strong-rooted plants require a deep, moist soil, but not heavy, and of moderate richness. Like all Clematises, they revel in a moist climate, and one sees the finest plants and flowers after a wet summer. As hybridists seem to have reached the limit of large-flowering climbing Clematises, let us hope that they will turn their attention to other species, and it is within the range of possibility that we may yet have a purple C. montana to enrich our gardens with colour in April and May. W.

Sloe gin.—I enclose another recipe for Sloe gin, which is simpler than the one given in your paper a short time ago. To a gallon of gin (Plymouth gin) in a 2-gallon jar put 3 quarts Sloes, ½ oz. bitter Almonds, blanched, 2½ lb. white sugar. Let it be well shaken twice a week for three months, then strain and bottle. Cork tightly or it will lose its colour.—G. C.

BULBOUS FLOWERS.

These subjects give little trouble, the chief considerations being suitable soil for the more fastidious kinds and care in planting them at [illegible]iate seasons. More bulbs are ruined In ma[illegible]nattention to these simple matters than [illegible]ther cause. Bulbs with the embryo flower in their centres, throbbing as it were with life, cannot survive bakehouse-bread treatment, stewed in a hot cupboard, and left without their earth-covering until weeks have sped by from the correct planting season. Carelessness and ignorance of simple gardening details wreck the welfare of a thousand plant lives. Always group them if possible, and get a good selection, such as the finest of the Windflowers (Anemones), not forgetting the quaint and splendidly-coloured Poppy Anemone, Chionodoxas, Crocuses, Dog's-tooth Violet, Fritillaries, Snowdrops, Galtonia candicans, Gladioli, Snowflake (Leucojum), Scillas, Grape Hyacinths (Muscaris), Tiger-flower (Tigridia), Trillium grandiflorum (White Wood Lily), Star-flower (Triteleia), Montbretias, and Mariposa Lily (Calochortus), very beautiful in warm, rather dry borders.

The Daffodil

is in beauty through the latter days of March and the opening of April, but of recent years by the acquisition of hybrids and "finds" in Spain and elsewhere the season of the fair flower has been prolonged. It is the "Lily" of Spring, the Spanish Pallidus præcox, an early form of our beautiful but bashful Daffodil, opening its pale lemon blossoms to the weak February sunshine. From thence onwards the procession begins, the dainty Narcissus cyclamineus, N. minimus, and a few others carrying on the time of Daffodils to the bold Trumpets, the Star Narcissi, and the many splendid groups, each filled with rare treasures and each christened with a distinctive name. In May, the month of blossom, the Poet's Narcissi make gleaming white colonies of blossom in the garden, the double white, like a Gardenia in form, ending the triumphal march of a glorious race. I know one beautiful garden in which the Daffodil has been naturalised in the broad meadow-lands. Near the lake-side Horsefield's Trumpet Daffodil lifts its bold chaliced flowers above the Grass, with its sister "Empress" in close succession. On bank and in mead the Poet's Star Narcissi (incomparabilis) are a picture of flowers and increase year by year, the bulbs forming themselves into natural colonies with age. It is interesting to see this change in their position, asserting themselves in a natural way. Gleaming like silver in the evening are the colonies of the Poet's Narcissi, sometimes seen clustering at the base of an Apple-tree, but more beautiful winding about in the hollow of some sloping meadow. Large gardens, of course, are necessary to thus plant the many Daffodils, but those who have an opportunity should use in this way one of our fairest flowers. The smallest gardens should have its Daffodils and its

May-flowering Tulips

too—a splendid garden flower to make a group of, the larger the group the richer, of course, the crimson colouring. Gesner's Tulip should be made note of by all flower gardeners; it is tall, strong, the flowers of superb colour, and they appear in May after the softer-toned Daffodils are over. T. fulgens, T. elegans, and T. macrospeila, forms of the T. Gesneriana, are so sumptuous in their colouring that I am never tired of writing of them to get flower gardeners to plant them in quantity, according to the space. T. vitellina, T. retroflexa, T. Greigi, earlier than the others, and the quaint Parrot Tulips, may be named too. C.

THE FRENCH HORTICULTURAL SOCIETY OF LONDON.

This society, which has now been at work steadily but most successfully for some time, is founded for enabling English and French gardeners to exchange situations, by which means they are enabled to improve their knowledge of each other's language and to extend their acquaintance with horticulture. The society is largely patronised by eminent horticulturists on both sides of the Channel; and the president, Mr. Geo. Schneider, is to be complimented on his untiring and zealous labours to promote good feeling between the gardeners of this country and those of the Continent.

The present volume of the society's Bulletin records the progress made during the past year, and contains a capital portrait of Mr. Schneider as a frontispiece, a list of officers and members, annual report, balance-sheet, and much other interesting matter. A large portion of the book is occupied with the text of the papers on various subjects read at the society's meetings.

There is also a full account of the annual meeting and dinner held last January, when Mr. George Nicholson, of Kew, presided. The Bulletin is an interesting record of the work for 1896, and will be perused with feelings of satisfaction by the members, many of whom occupy important posts as directors of botanical gardens, nurseries, and gardens in all parts of the world. C. H. P.

GARDEN WORK.*

Conservatory.

Pelargoniums, if well-grown, will be a special feature now, and should be arranged thinly in groups with a few Ferns or other green-leaved plants among them, as the Pelargonium is rather an ungraceful plant and wants something to relieve the mass of colour. The usual way of propagation is to strike cuttings when the plants are cut down in August, after exposure in the open air to ripen the wood, but cuttings of the young shoots will strike now; in fact, market growers often steal a cutting or two off each plant before selling the plants. I am referring now to the old-fashioned or show Pelargoniums. The fancies seem to have almost disappeared, which is a pity, I think, as the colours were more delicate. Fuchsias, unfortunately, are not so popular as they were thirty years ago, but a well-grown Fuchsia is a graceful object in the conservatory, especially when planted out and trained up the rafters. The Acacias have been charming. Those who want to see how beautiful Acacias are should go to Kew end of March or beginning of April, when many of the plants will be in bloom. After flowering is over what pruning is required to keep the plants symmetrical should be done, and if the plants are grown in pots any repotting required should be done as soon as the growth begins to move. Some day there will be a rush after these and other hard-wooded plants again, and it is well to keep in touch with their culture. Acacias may be well grown in good yellow loam lightened a little with good peat or leaf-mould and sand. This is a good season to plant those very beautiful cool conservatory climbers, Lapagerias rubra and alba. Must have a well-drained bed of peat with a few rough bits of turfy loam and some sand and charcoal to keep the soil open and sweet, as during the growing and flowering season abundant supplies of water must be given. Thrips are rather fond of the hard, smooth leaves, and if permitted to get established will soon do serious injury, but sponging with an insecticide will keep them down if it is not convenient to vaporise with nicotine. Groups of Lilium Harrisi and longiflorum will be charming now. They look best arranged thinly among Ferns. I need not say green-fly must be kept down, or the flowers will be spoilt. As Azaleas go out of bloom warm them a bit in a close pit or house to get the growth well started, syringing freely with pure water. Any plants which require repotting must be seen to now. Never pot a plant with a dry ball. Use only the best peat and clean sand, ram it as firm as possible, and keep the collar of the plant fairly well up—in other words, do not bury any part of the collar.

Stove.

The new growth of Caladiums and other foliage plants will be coming away freely now, and a light shade will be necessary on bright days, but use as little shade and for as short a time as is consistent with the object sought. Sufficient moisture may be given to the atmosphere by syringing floors, stages, etc. It is not well to be always syringing the plants overhead. A light dewing over twice a day is desirable if the water is pure, but the floors on bright days may require frequent damping. Gloxinias may be propagated from leaves when these can be spared. Saintpaulias may be increased in the same way, as may also all the fine-leaved Begonias of the Rex type. These are beautiful things for the amateur's stove, being easily managed, and they last in a good condition for some time in the rooms if carefully managed and the leaves not damaged by contact with anything. The Impatiens Balsams and Rivina humilis are charming little plants when well grown in 5-inch pots for room or table decoration. Cuttings of both will root quickly now in bottom-heat, and seedlings of the Rivina are easily raised; in fact, where the plant is grown there are usually plenty of self-sown plants about the stove. Cissus discolor makes a charming basket plant in summer. I have often used it for draping Fern-baskets, especially broad-fronded Ferns, such as Phlebodium aureum and Asplenium bulbiferum. Train the young shoots of Allamandas and Dipladenias up into the light.

Orchard House.

Thin the young wood on trees in pots so as to permit of free circulation of air among the foliage. In disbudding leave a young shoot as near the base of each branch as possible. The young shoots of Plums may be pinched when five or six leaves have been made. Treat Apricots the same as Plums, but Peaches should be allowed to make more growth. Figs in cool-houses will only bear one crop, so need not be pinched, if the growth is kept thin so that the wood may ripen. Ventilate carefully so as to avoid cold draughts. Close by half-past three o'clock and syringe on bright days, but on mild, calm nights give a chink of air along the ridge. See that the trees get water enough to moisten all the roots. When the fruits are swelling freely, top-dress with old turf and manure, and give liquid-manure occasionally.

Early Peaches.

When stoning is finished and the fruits commence their last swelling give a further sprinkle to the borders of some quick-acting stimulant. Peaches will pay for liberal treatment. Keep the young shoots neatly tied in, so that the sunshine may reach the fruits to impart colour. Ventilate early in the morning when the sun shines, beginning with a small opening along the ridge, increasing it as the sun gains power till full air is on, and close not later than half-past three o'clock in the afternoon, syringing to keep the leaves clean.

Stopping and tying down laterals.

This must be done promptly. Young shoots up against the glass are easily injured. The length of growth to be left beyond the pinch must be regulated by the space between the rods. When the rods are trained near each other one leaf has to do. When there is more space two or even three leaves may be left. Rub off all laterals below the bunches, and stop all above to one leaf. Do not crowd the foliage. One well-developed leaf is of more use than two small, puny leaves. Be prompt and careful with the ventilators, and keep a little warmth in the pipes.

Window Gardening.

The plants are now growing freely, and their wants in the matter of water will be more extensive, and all plants with pots filled with roots should have a little stimulant in the water twice a week. A good deal more might be done with window or room plants than is generally attempted. Every enthusiast should provide himself with a small case for propagating by striking cuttings and raising seedlings.

Outdoor Garden.

Let Sweet Peas be neatly staked before the tendrils are thrown out. In new gardens patches of Sweet Peas may be planted round such trees as Mountain Ash, Laburnum, Weeping Birch, etc., and as they grow may be tied up to the stems. Canary Creeper and Convolvulus major may be used with effect in the same way. Plant more Gladioli. These are charming things for brightening up the borders in summer. This is a good time to buy a few new or rare hardy plants. The new things are usually kept in pots, and are very often—if at all popular—very small when they come to hand, and if planted in a crowded place would probably be overgrown and disappear. All new things should be sown the first season in a reserve bed, where proper attention can be given to them. Have them properly labelled or else numbered, and the numbers entered in a book. The number system does well in a nursery, but in a private garden the name of the plant should be really written on a label large enough to be seen. Hardy Primulas are charming things, and if a collection is grown a special site should be prepared for them on a shady part of the rockery. Primula rosea is bright and showy just now on the north side of a rockery sheltered and shaded by large stones. Mulch Carnations and Pinks. Old Moss-litter manure will do for this, also for Pansies and Violas. Dahlias, Hollyhocks, and Phloxes must have liberal treatment. Look over Roses to clear away suckers from the stocks. Insects will soon appear, and should be promptly dealt with. Water the newly-planted things. Of course, mulch should be used.

Fruit Garden.

Cold winds and frosty nights have latterly been rather trying, but in our own immediate neighbourhood scarcely any damage has been done, as during the coldest nights the blossoms were dry. Those who have used heavy curtains to protect the blossoms should uncover every fine day, and replace covers at night. There are plenty of ripe Strawberries under glass now. To give flavour they must have a free ventilation to finish the fruit. Strawberries do well on shelves near the glass in span-roofed Tomato-houses, and the ventilation which suits the Tomatoes will suit the Strawberries. Green and possibly black-fly will soon appear on Peaches on walls, especially if the trees were much infested last year. The best remedy is Tobacco-powder, and it is easily applied. There is more trouble in mixing washes, and they are more expensive. A shilling tin of Tobacco-powder will go a long way if used promptly, but a shilling spent on liquid-insecticides will not have much result. But whatever the cost, insects must be kept down now. If insects appear on stone fruits under glass the vaporiser is the best and cheapest remedy, and it makes clean work, which is more than fumigation with Tobacco-paper usually does. Mealy-bug is a terrible pest on Vines, and even where an effective winter cleansing has been carried out, there will be a few stray bugs left, and when the sun shines—if the Vines are examined—the bugs may be observed moving about, and should be promptly destroyed. I have had to deal with bugs on Vines more than once, and know how important is close watchfulness in the early spring months, for if only one insect is left in the house they breed so fast that the Vines will soon be fully stocked again, and then there will be no good, clean Grapes.

Vegetable Garden.

The thinning of young crops of vegetables will soon require attention. It is best to do this work before the plants get large, as it makes less disturbance of the soil round the plants left. Run the Dutch hoe through between the drills when the thinning is done. A loose surface is of great advantage to growth. Plant French Beans on warm border for early crop. We generally plant an early kind and Canadian Wonder at the same time so as to form a succession. For main crops there is nothing better than Canadian Wonder. Scarlet Runners may be planted about the first of May. Sometimes a few Runner Beans are started in boxes under glass, and transplanted for early crop. The Climbing Beans of the French type are heavy croppers, and nearly every gardener grows them more or less, but they will not altogether take the place of the Scarlet Runner, as the pods of the latter do not get tough so soon if left hanging a few days too long. Vegetable Marrows are a necessary crop in every garden. Many amateurs spoil their chances of a good early crop of Marrows by planting them in manure. It will be better to plant in good loam and use the manure as a mulch afterwards. The same treatment applies to Ridge Cucumbers. There would be fewer complaints of fruits turning yellow at the point and refusing to swell if treated to less manure. This is the time to sow plenty of Marrow Peas for the end of July. Do not use too many seeds. Draw 6-inch drills, and plant the Peas regularly 3 inches apart over the bottom of the drill. E. Hobday.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from April 24th to May 1st.

Pricked out Stocks, Asters, Zinnias, Phlox Drummondi, and Marigolds in boxes. We grow a good many White Asters for cutting—Comet and Mignon being the principal varieties. "Geraniums" and other bedding plants have for the most part been moved to cold frames to harden. Chrysanthemums also are now in cold pits with the glass off all day and on mild nights. All the plants intended to produce specimen blooms have been shifted into 6-inch pots, and will soon be placed on coal-ash beds outside; probably many of them will be there before these lines appear in type, as we do not believe in coddling. We always spend a few pounds in new varieties every season, as we want the best, and though some of the new kinds are not heard of after the first year or two, still a few good new flowers come to the front every season, and one must have them to keep abreast of other growers. Thinned Hamburgh Grapes in second house, and top-dressed borders with bone-meal and guano, lightly turning it in. The roots are near the surface, so the pricking over with the fork has barely covered the dressing; but the watering will carry down the essence of the manure. Peach-borders have received the same treatment. To have fine Peaches the trees must be well nourished, especially with quick-acting stimulants. After the crop is set and thinned, and if the crop is heavier, a further sprinkling of some good easily soluble manure will be given after the stoning is completed. Top-dressed Cucumbers in warm houses. Staked and tied Tomatoes in large house where the plants are set out in rows across the borders. Potted off Tomato plants intended to plant against south walls. In our house, where we thought a change of soil was necessary, we are growing them in boxes. Shifted on young Palms and Camellias. The loam from this district is not suitable for Camellias, Chrysanthemums, or Pelargoniums; it contains too much lime. Looked over Standard Briers intended for budding, to rub off surplus shoots, leaving about three shoots near the top. Early Potatoes showing through the surface on the early border have had some soil drawn well over the stems to shelter them. Sowed Wallflowers, Hollyhocks, Campanulas, various Pansies, and other hardy things. Stirred the soil among young crops of vegetables with the Dutch hoe. Thinned the early sown hardy annuals, and started Sweet Peas. Mulched beds of Pæonies with short manure. These are rather gross-feeding plants, and require support in dry weather and in hot soils. Divided a lot of Princess of Wales and Marie Louise Violets; these also have been mulched. The red-spider are fond of the leaves. Prepared beds for Stocks and Asters. Planted more Marrow Peas.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

430—**Flowers for shady border.**—Will you kindly give me the names of plants that will flower freely in a border facing west, overshadowed by trees, and not getting any sunshine, even in summer, till long after midday?—FARM.

431—**Water plants for fresh-water fish.**—I have a large aquarium in which are a number of fresh-water fish—roach, dace, etc.; running water is supplied by means of a pipe from town supply, which water is very hard. I have a bed of sand and small gravel at bottom. I think, though, I ought to have some water-plants growing from the bottom to supply more oxygen, and also would look much better. Kindly say what water weeds or plants would be suitable and how I should be able to get them to grow, and where such can be obtained?—CONSTANT READER.

432—**Maltese vases for growing Ferns**—Would you kindly tell me where I can get these vases for growing Ferns on the surface? I believe they are porous, but I cannot get them anywhere, although I have tried many places?—K. T.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

433—**Hoya carnosa bearing seeds** *(M. G.)*.—Yes; the plant occasionally bears seeds, but propagation is, as a rule, done from cuttings.

434—**Unsatisfactory Vine** *(Constant Reader)*.—Your Vine is mildewed. See reply to "A. B." this week, and follow advice given. Use sulphur freely, and give air carefully. You would do well to give better ventilation.

435—**Fern** *(Mrs. H.)*.—The enclosed specimen is a greenhouse Fern known as Davallia humata Tyermanni, or commonly known as the Bear's-foot Fern. It is easily grown in light, loamy soil, and requires a fair amount of water, especially when growing.

436—**Pæonies** *(Burleigh)*.—There are many kinds of Pæonies, some from China and Japan, others natives of Europe. The Tree-Pæony to which you probably allude is a native of China, and P. officinalis, which represents the herbaceous kind, is a native of Europe.

437—**Gloxinias for show** *(A Constant Reader)*.—Gloxinias should be started now for show in August. If the plants are young give a second shift in June. The Stephanotis will start now also. If the flowers come too soon remove to a cooler house. They can easily be kept back.

438—**Greenhouse blinds** *(Bs)*.—Our correspondent's note seems to us perfectly plain and simple. Use the reel and cord exactly similar to any ordinary blind to your windows. The size of the reel and roller are naturally larger on account of quantity and thickness of the shading material used.

439—**Tecoma Smithi** *(H. G. Thomson)*.—This has disappointed a good many. The flowers drop so soon. It should be grown in the open air in summer in a sunny spot to get the wood ripened. The flowers come in autumn. Should be struck from cuttings. Seedlings are gawky things, and do not flower freely.

440—**Treatment of Tuberous Begonias** *(X. Y. Z.)*—You will find this fully described in GARDENING, Jan. 16, p. 647, and Jan. 23, p. 655. As this subject has been so recently gone into we cannot again refer to it at any length. You would do well to read the articles referred to.

441—**Treatment of Chrysanthemums** *(Reader)*—Yes; if you want very dwarf plants. But why not head the shoots at that time, and again late in July? You would get a better furnished plant. Chrysanthemums vary so much in the treatment needed that we wish you had given names of a few varieties.

442—**Moving Carnations** *(Vic)*.—You will have no difficulty in removing both the Carnations and Zonal Pelargoniums. Keep them in the house under the same treatment as at present; but you will find it better to take them with you than dispatch by parcels post, quick transit and new planting being a great object.

443—**Shading Peach and Nectarine-trees in orchard-house** *(Nectarine)*.—We do not think with ample ventilation any shading will be needed in a Peach or orchard-house. If you found such necessary and the trees are blistered, use light scrim canvas during hottest part of day. We do not, in any case, advise a permanent shade.

444—**Sweetwater and Black Hamburgh Grapes for unheated house** *(J. Elgood)*.—Either of the Grapes you name are good, and the best for your purpose. The Sweetwater is white, the other black, and the latter is the better for a cool-house. It rarely fails, and is a good grower; the Black Hamburgh is also of excellent quality.

445—**Hot-water pipes** *(W. Carston)*.—We do not see why your plan should not work, but you do not say the height of the floors, and we think it better if you consulted some practical fitter in your locality. Nor do you say size of or strength of your boiler or greenhouse already heated. It would need a powerful boiler if your greenhouse is large.

446—**Eighteen Pompon Dahlias** *(C. Allen)*.—Achilles, Crimson Beauty, Lady Blanche, Bertha, Hercules, Dora, Eccentric, Cecil, Eurydice, The Mikado, Vivid, Hindoo, Lilian, Hector, Hilda, Gem, Little Duchess, and Glowworm are all very showy and neatly formed. Read an article on the subject in present issue (page 101). We think it will interest you.

447—**Vine flowers dropping** *(W. M.)*.—You have forced your Vines too much. The top growth is far ahead of the roots, and until you get increased root-action your Vines will do badly. Give 55 degs. to 60 degs. at night; 10 degs. higher by day. Close early, and syringe twice daily, and get a stronger growth. Shade during hot sunshine to get a better growth and prevent flagging.

448—**Preventing clubbing** *(J. Andrews)*.—The club cannot prevent the seed germinating. It must be from other causes. Club attacks roots. Our advice has been given repeatedly for weeks on this subject, and the best remedy is to use gas-lime freely in winter. We fear you cannot do so now—at least, we only advise a very light dressing, forked in as soon as possible before planting crops.

449—**Unsatisfactory Vine-leaves** *(A. B.)*.—Your Vines are badly mildewed. Use flowers of sulphur freely, and dust over affected parts; also reduce all moisture for a time. Maintain a warmer atmosphere, and give air carefully. Avoid cold draughts. Unless the spreading of the pest is checked your Vines will suffer greatly. Lose no time in applying the sulphur, and maintain a buoyant atmosphere.

450—**Avoiding knotty Pear-growths** *(F. K. B)*—The previous reply to your question should have read *hard* pruning (not bad pruning). With freer growth the swollen knobs will disappear. It is caused by hard cutting of young trees. The latter part of the answer fully explained that in time the growths now swollen will disappear. Of course, espalier trees need hard pruning; but cannot you give more extension to the leading branches? That would assist them also. Pinch in summer and then do the pruning at two seasons. There is less check to the vigorous wood.

451—**Treatment of Clivias** *(M. F. H.)*.—If the Clivias are very much pot-bound and have finished flowering give them a shift at once. Turn the plants out of the pots and divide them, or pot on into larger pots if required for specimen plants. It is easy to divide Clivias by simply pulling or breaking the roots apart. Pot the roots singly into 8-inch pots, or into a 10-inch one if they are very large. Clivias do not require a light soil to grow in, turfy loam and sandy peat being essential, but pot firmly. After the plants have been disturbed stand them in a stove temperature for a time to give them a start. Syringe several times a day and keep shaded. When the plants have made fresh growth and have recovered from the check return to their permanent position. These plants require an abundance of water when well-rooted and in health.

452—**Shrubs for wall, etc.** *(Constant Reader)*.—You cannot do better than plant shrubs, but we do not know whether they will all succeed, as your details are rather meagre. However, try Pyrus (Cydonia) japonica (crimson flowers in spring), Forsythia viridissima (yellow), Mezereon (spring-flowering, purple, very sweet), Euonymus japonicus variegatus, Mock Orange (Philadelphus), Lilac, The Yulan (Magnolia conspicua), hardy Azalea, Berberis Darwini, Pyrus Malus floribunda, Spiræa ariæfolia, Hydrangea paniculata grandiflora, Olearia Haasti, Guelder Rose (Viburnum), Weigela Eva Rathke.

453—**Tomato fruits setting badly** *(Beginner)*.—Your house may be too moist, or you may feed too freely. You do not say anything as to culture. We advise you to leave a little air on the top ventilators at night. It dries up the moisture and assists setting. On the other hand, food given at the setting causes too much leaf growth and flowers drop. You do well to fertilise, and your night temperature appears good. If you can give us any other particulars with regard to culture we could advise you more fully. Do you give air freely in fine weather to dry the pollen? That is better even than artificial setting.

454—**Treatment of Fig-trees** *(Teufel)*.—Figs visible to the eye of the previous year's growth should be removed. They are useless. Only the small ones at axils of leaves are wanted. We are unable to say if much pruning is needed, but if in a neglected state cut out a goodly portion of old wood. Cut back old spurs and lay in healthy young wood at upper portion of tree. It is a favourable position and should fruit well. By old spurs we mean the useless knotty growths at some distance from the wall. Lay in strong wood, but do not shorten the latter. Do not give any more manures. Figs often grow barren through being fed too much.

455—**Dahlias to give fine flowers** *(Dahlia, Bewdley)*.—Under any circumstances the main stems will get a good start before the side shoots get away. Most growers let the side shoots break as they please, selecting four of the best placed when they are ready, and put a stake to each. Some varieties will require more thinning than others, and if fine blooms are wanted, disbudding must have attention. Most growers take the terminal buds, and rub off the others as soon as they are visible. Dahlias—from the time they show buds till the shows are over—require daily attention, and flower-pots with a little Moss inside should be placed on the sticks very early after the plants are set out to attract the earwigs.

456—**Knobs on Apple-trees** *(S. Green)*.—Your Apple-trees have been attacked by American blight, and this eats up the young wood, feeding on the new bark. The wood sent is quite free. Are other parts of the trees in a like position? If so, your lime-washing and soap are the cause of the trees being clean. You did well to dress, but you will find the pest reappear this summer, and will not be affected by vegetable crops if the weather is hot. We find soluble petroleum the most effective remedy. This, used at the rate of half pint to a gallon of tepid rain-water, is effective. Raw petroleum is not good, as the oil does not mix with water freely; if used it should be beaten up in soft-soap to make it soluble.

457—**Advice about rock garden** *(Reader)*.—The Primula you name is hardy, and will do in the open border; but the Tree Carnations need a cool greenhouse. Yes, you could scarcely choose better subjects for the base of your rockery than the Sedums and Stonecrops. These are so numerous we cannot name for want of space. Send to any of the firms advertising various herbaceous subjects in our columns, and you will get a fully descriptive list that will give you prices as well. They vary so much in price, and you give us no idea of how far you would like to go in this matter. Ferns, Tropæolums, Ranunculus, alpine Auriculas, and heaps more would do well in the centre; all of which you will find named in any good list.

458—**Arum Lilies touched with frost** *(Constant Reader)*.—Stand the plants in a cold-frame with protection from frosts, and as you have cut the foliage off we advise you to be sparing with the water. Do not allow them to become too dry. As soon as the plants commence to make fresh growth—which will be in June or July—shake them out and divide singly. Obtain as much root as possible. You may pot the plants singly into 6-inch or 7-inch pots. Arum Lilies do not require a very rich compost. Use turfy-loam and leaf-soil in equal proportions with the addition of a little sand and broken mortar-rubble. Place back in the frame and water as required. Syringe twice a day, and allow plenty of air, or have no covering at all, keeping entirely out in the open till September, when place inside.

459—**Plants for greenhouse** *(C.-cum-H.)*.—You cannot obtain sufficient heat to maintain a temperature for Ferns and greenhouse plants during the winter months, as you suggest. You could not keep out the frost. Ferns require a temperature of not less than 50 degs. to thrive well, and greenhouse plants 45 degs. to 50 degs. Use a heating-stove during the cold weather, or carry a 3-inch flow and return pipe round the house to prevent failure. By consulting our advertisement columns very useful boilers can be obtained suitable for the work required. The following is a collection of greenhouse plants, and are all of easy cultivation: Aralia Sieboldi variegata, a useful and effective plant with variegated foliage; Aspidistra lurida variegata (Parlour Palm); Azaleas, of which there are many, such as Deutsche Perle, double white; Crassula coccinea, large red wax-like flowers, and very sweet-scented; Ficus elastica (the India-rubber-plant) is a useful plant for decoration, being very ornamental; Cytisus racemosus, a yellow sweet-scented flower, and useful for cutting; Eupatorium Weinmannianum, white, very effective; Solanum Capsicastrum, a pretty little ornamental plant with bright crimson berries; Sparmannia africana, which has from twelve to eighteen flowers on a spike, white and yellow, and very effective. Then there are Carnations, Camellias, Pelargoniums, Arum Lilies, Fuchsias, Cannas, and Chrysanthemums for the autumn and winter months. There are many climbers to select from, and the majority are of easy cultivation. We can recommend you the following subjects: Solanum

jasminoides, Habrothamnus elegans, Lapageria alba or rosea, Passiflora cœrulea (Passion-flower), and Plumbago capensis.

460—**Troublesome mice and guinea-pigs.**—1, Best way to get rid of mice? 2, Will guinea-pigs hurt Cucumbers and Tomatoes? I have two houses, 30 feet by 12 feet, joined side by side, ventilators and air passage between, but each house distinct. In January I lost 180 Tomato plants, 2 inches to 3 inches high, through mice. Now they have left. In the other house I have Cucumbers with plenty of fruit, 5 inches to 12 inches long. The pests the last two days have eaten eight Cucumbers. Some were gnawed half down, others down to the neck. I have tried poison, they rather like it, and vary it with green Cucumbers. What digestions they must have!—J. Bart.

*** *First as to get rid of mice; why not poison them if they have done so much mischief? Traps we fear would be useless in your case. Can you not keep a cat at night in the house before resorting to poison? Yes; guinea-pigs are most injurious, and they bring in other vermin in search of food. We certainly would not combine the plant growing with keeping these animals. We trust you will soon get rid of the pests you are troubled with.*

461—**Woodlice in Mushroom-bed.**—Will you kindly advise me the best way to get rid of Woodlice which infest my Mushroom-bed, which is inside and under the stage of greenhouse, and is covered over with hay, which sometimes gets rather damp and mouldy? Would this cause them to come?—Vigilans.

*** *We do not think it is the mouldy hay which breeds the woodlice—probably old wood. Pour boiling water in the crevices, mixing a wineglass of ammonia to a gallon. This will destroy many others. You may trap with Potatoes hollowed out, or pieces of Carrot in empty flower-pots, the pests being emptied twice a day into water. They will leave the bed for the bait named.*

462—**Bed for Asparagus and Seakale.**—I want to plant in my garden 100 Asparagus plants (Conover's Colossal), 24 strong Seakale, and I should be obliged by your letting me know in your paper what sized beds I would require to make for them, and how to prepare them? —Birr.

*** *Plant your Asparagus in lines, 2 feet apart or more each way, in well-manured, deeply-dug soil. Plant Seakale at 2 feet between plants, and 3 feet between rows. Well cover Asparagus roots with soil when planting.*

463—**Value of gas-lime.**—I have gas-lime given me by the gas company; they cart it on my land. Can you inform me whether it will do for dressing as it is? If not, what is necessary to make it so?—X. Y. Z., *Horsham.*

*** *You may use the gas-lime for digging in during winter, or a light dressing from now to September, as the crops are cleared, but our advice is to place in bulk and use it freely in winter. For Grass land it is an excellent dressing mixed with a good quantity of loam, but you must use sparingly on garden land now.*

464—**Long spurs on Black Alicante Vine.**—I have an Alicante Vine that has been so trimmed year after year that the spurs are 6 inches and 7 inches long. They have now on each spur from four to six strong sturdy shoots with bloom. Could I utilise more than one of these shoots, if I feed well? The soil is full of bones and loam. An early answer would oblige.—T. T. J.

*** *You may grow a couple of shoots, but one is quite enough if the Vine is allowed free extension in other ways—indeed, one bunch to a shoot is sufficient for the most healthy Vine to carry. Next winter you would do well to cut back a portion of your spurs. This would give you new wood nearer home, but it is not wise to do the work in one season, but in three. Your Vine-rod will then have strong shoots and fewer buds.*

465—**Tree Ferns.**—A collar of Sphagnum or other Moss is often placed round the trunks of these Ferns and kept moist. Is it advisable to have an air space kept between the collar and the trunk, or may the Moss be fastened round the trunks direct?—H. F.

*** *You may fasten it around the whole of the trunk. The moisture of the Moss is a great help and more or less roots are formed in it.*

466—**Treatment of Freesias.**—My Freesias, repotted each year, did exceedingly well for two years. The third year they grew remarkably well, but not a bloom did they produce; the same happened the fourth year, which is the last year. Will anyone tell me the cause and remedy of this? All the years they were treated alike, the only difference was that this last year some broken bones were put at the bottom, and the roots that reached them looked yellow and stained.—H. C. P.

*** *Either you used smaller bulbs, or the bone-manure was too powerful. We prefer a compost of rich sandy loam with no artificial manures. When repotting these bulbs, select into two sizes, and only pot the largest for flower, placing the others in a fairly deep pan of the same compost, when they will make grand bulbs for the following year.*

467—**Pinching Carnations.**—I have some Carnations which are running up much taller than the others If I pinched the drawn stems off, would that make the plants more bushy? And should I get more flowers thereby?—A. B.

*** *We presume yours are Tree-Carnations. In that case do not pinch off any shoots. The taller ones will flower first, and soon be followed by the side growths. This is the natural habit of the plant.*

468—**Voles.**—How are these pests to be got rid of? They have attacked a large bed, burrowing and nipping off the shoots of Mrs. Sinkins Pink.—C. S.

*** *We do not know which of the voles you are attacked by—the short-tailed or the long-tailed species; but the last has more than once been very troublesome among our Carnations, even venturing under glass this last season, and are difficult to trap. Where safe from children and domestic animals a mixture of phosphorus, lard, and flour is very deadly. Or you may place a few rather large flower-pots in the ground, knocking out more of the bottom and inverting them to form a pit-fall. If you can discover their run, an ordinary pair of mouse clams may be carefully sunk and cunningly hidden with a little light soil, over which place a few Peas or a little Corn. The vole has given us more trouble than the house mice, and a couple work much havoc.*

469—**Artificial manure for pickling Cabbages.**—Could you recommend me any artificial manure to use for growing pickling Cabbages? I cannot without great expense and labour obtain dung. Soil, fairly light, deep but poor.—W. H.

*** *Fish manure would suit your soil applied freely in showery weather; failing that, good guano.*

470—**Yews.**—A Yew hedge, 4 feet to 5 feet high, planted autumn '95. The stems, owing to sinking of the bed, and subsequent additions of soil, have got buried 3 inches or 4 inches. Will this hurt the Yews? They are doing very well, and it is inconvenient to lower the bed.—C. M. F.

*** *This will not harm your Yews, but we would endeavour to avoid any further raising of the border soil.*

471—**Japanese Irises not flowering.**—A friend of mine has plants of the Japan Iris Kæmpferi, growing in light lime-stone soil, dry, and in a sunny but exposed position. Could you tell me why they do not flower, although growing well?—R. J. S.

*** *The Irises do not get sufficient water. These flowers are always aquatic and very beautiful when in a deep, moist loam. They are delightful by the wate side. You must give plenty of water.*

472—**Plants for a cold greenhouse porch.**—Would you kindly let me know what plants would you advise for a (cold) porch? Greenhouse with a south-east aspect. Will Musk that was allowed to die down during winter be of any use for baskets this year? I should like particularly names of plants for hanging-baskets for the greenhouse?—Amateur.

*** *There are no prettier subjects than the Campanulas, but you could use several Ferns, cool greenhouse Mosses, and the Eupatoriums. Yes; the Musk will be useful again. Take up the fleshy roots and place them in a basket at any time now.*

473—**Pruning Azaleas**—Kindly inform me if Azaleas require much pruning? And if I do not repot must I shake away part of old soil and give new, and oblige?—Azalea.

*** *You need not prune your Azalea. If you do not repot—and this is not necessary every year, or even two seasons—give a dressing of coal-soot on the surface, about a quarter of an inch thick. You will need be careful as regards water supply, the soot being rather deceiving. Syringe freely while in growth, and let the pots stand upon a cool bottom in preference to a dry bench.*

474—**Ferns fading.**—Would you please tell in your next issue of Gardening what is the cause of my Ferns fading at the tips? I have had them for the last two years in a shaded window. Should I have pinched back young fronds that came up in the winter? Please let me know, also their names, and do you think they require repotting? —Amateur.

*** *We think your Ferns have been nipped by a cold draught, or perhaps a slight frost. You should never pinch back a Fern. The frond sent that has long ribbon-like segments is Pteris serrulata; the other Asplenium Fabianum. We cannot reply about repotting; you do not mention their size nor the dimensions of the pots.*

475—**Dwarf evergreen plants.**—Please let me know in next issue the name of this plant, and the best and dwarfest evergreen plants for carpeting and covering unsightly places?—Treorchy.

*** *Set alpine Auriculas, white Rock Cress (Arabis albida), Alyssum saxatile, Aubrietias, Wallflowers, Primroses, double red and white Daisies, Erica carnea, Hellebores, both Christmas Roses and the beautiful Lenten Roses (H. orientalis vars.), Forget-me-nots, Omphalodes verna, Mossy Rockfoil (S. hypnoides), the handsome heart-leaved kinds, also called Megaseas, Stonecrops, and Pansies. These are not all evergreen, but very charming in positions such as you describe.*

476—**Beet and Carrots.**—As my ground has been dug and manured, I find, regardless of crops, will you kindly say if it will be best to sow Carrots and Beets in fairly rich ground manured this spring, or to put them in a plot that was not manured last year—rather a stiff, clayey piece of ground? Which of the two would do best in the manured piece?—T. Shortlands.

*** *Ground recently manured is not suitable for root crops such as Beet, Parsnips, or Carrots, as the fresh manure causes the roots to fork badly, and render them almost valueless. We would certainly advise planting or sowing the roots named in the plot that was not manured, and stiff soil is good if well worked. Of the two we would grow the Beet, but sow later, say in May, in the heavy soil; but get a fine surface by forking over and raking previous to sowing.*

477—**Several plants in a pot.**—A Palm, or India-rubber-plant, some Ferns, a "Geranium" or two, all put together in a very large flower-pot. Would they do?—Sneyd.

*** *This plan would not answer at all. The plants would soon fail.*

478—**Use of cold-frame.**—I have a two-light frame, which I am using at present for sheltering my boxes of seedlings, etc. As I have no knowledge of the use to which such a frame can be put, I shall be glad if you would give me a few hints as to the best means of using it through the summer and winter—bearing in mind that my sole object is to grow homely flowers, with perhaps a few Tomatoes, if the frame is suitable for such a purpose? —Philip Stanmore.

*** *You must give up the idea of Tomatoes. Your present use of the cold-frame is excellent. Alpine Auriculas might be grown in it, and such half-hardy bulbs as Ixias, Sparaxis, Freesias, and others; but if you do too much of this you will not have available space for your seedlings and cuttings next spring and winter. When these come out, put a load or two of stable manure in for slight heat, and grow some frame Cucumbers.*

479—**Pruning Rhododendrons.**—I have a fine collection of Hybrid Rhododendrons growing in rather an exposed position, and they are getting too high. I shall be much obliged if you will tell me the right time to prune them, and how?—H. H.

*** *No better time than the present.*

480—**Vine border.**—I am having a greenhouse put up, unheated, but in a very warm and sunny aspect, I wish to plant outside the house next autumn three Vines. Will you kindly advise me through your valuable paper as to the preparation of the border for them, and the best sorts of Grapes? Our soil is naturally a very deep, rich loam.—Constant Reader.

*** *A little artificial heat is a great help to Vines, and prevents disappointment in damping, shanking, and unfinished condition of the fruit. We would confine ourselves to the old Black Hamburgh variety in your case. It is a reliable and well-flavoured Grape. Move your outside border deeply, and place some ½-inch bones in the bottom. You need not afford much drainage upon your soil, and it will be better to take out a border so that fresh loam may be added as the plants progress. This is a great help, and feeds from time to time.*

NAMES OF PLANTS AND FRUITS.

*** ***Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of Gardening Illustrated, 37, Southampton-street, Strand, W.C.***

Names of plants.—*H. J. Metcalf.*—The specimen you sent before was wrongly named. It came in a much withered condition, hence the mistake. The true name is Celsia cretica.——*Longforgan.*—Sparmannia africana.——*Roc.*—1, Escallonia sp.; 2, Cryptomeria japonica; 3, Pinus insignis; 4, Anemone apennina. We are unable to recognise the species of Escallonia (No. 1). It is so nearly dead that the foliage is quite out of character; but is a native of South America.——*Utica.*—You have sent too many. Six is the largest number we name at one time, but as you apparently were ignorant of this, we name the following: 1, Cyrtomium falcatum; 2, Selaginella Wildenovi; 3, Nephrolepis exaltata; 4, Asplenium sp.; 5, Adiantum cuneatum; 6, Nephrodium molle; 7, Pteris serrulata; 8, Selaginella Kraussiana; 9, Cyperus alternifolius; 10, Euonymus japonicus aureus; 11, Asplenium bulbiferum; 12, Adiantum pedatum; 13. Bird's-nest Fern; 14, Pteris sp.; 16, Same leaf; 17, Begonia manicata: 18, B. metallica.——*Mrs. Marshall.*—Queen Anne's Double Jonquil (Narcissus odorus plenus); Crucifer unfortunately had shrivelled.——*E. Y. W.*—Narcissus Barri conspicuus.

BOOKS.

"THE DAHLIA."*

A small book by several writers treats of the Dahlia: its history and cultivation. The history of the Dahlia has been written so often that it seems almost superfluous to write it again, but, presumably, it is necessary to do this in order that the book may be complete, and in justice to the writer we are bound to say it is a very complete history, and will be interesting to Dahlia fanciers who have not read it in other books and periodicals.

The history of the plant has been well dealt with. The writer is probably right in supposing that the numerous forms of single, double, Pompon, Cactus, show, and fancy Dahlias have all been developed from a single wild form, probably D. variabilis. The cultivation of the Dahlia has been written by one who has a good knowledge of his subject, and the matter is fully dealt with from the time of taking the cuttings until the flowers are produced.

The exhibitor will find in it much useful information as to thinning out the blooms, "feeding" the plants, and shading. Exhibitors must ever be on the alert to protect their choice blooms from insect pests, slugs, etc., and this pamphlet will give them just the information they need.

Those of us who can remember the time when there were no other class of flowers to be seen at exhibitions except the show and fancy types, arranged on stands in long, formal rows, can appreciate the infinite variety of the Pompons, Cactus, and single-flowered varieties arranged in bunches with their foliage. The show and fancy varieties are still exhibited as they were forty years ago, and no hint is given in the book of any other way. The wooden cups are there, the plugs to fix the flowers in the cups, "with a slice of Rhubarb or Turnip," and "the stands painted green and varnished."

The unsatisfactory part of the book is the long list of names. There are twenty-seven pages of names, and we counted thirty-five varieties on one page, which would give about 900 varieties. Dahlia analyses are also given, but the amateur wishing to purchase gets bewildered. He does not require 900 varieties, nor even ninety. One or two dozens in each class might have been selected in preference to publishing the contents of six or seven nursery catalogues.

* Macmillan and Co., Limited, Publishers. Edited by Mr. Cuthbertson, of Messrs. Dobbie & Co., Rothesay, N.B.

BEES.

Management of hives (*Cyprian*).—The Bees, having established themselves and passed the winter in the roots of an Ash-tree, they have, of course, a number of combs, and are by now rearing brood, so that it will be impossible to get them out without cutting away some of the roots, but this will not injure the tree if done carefully. You will not, in any case, be able to secure the Bees unless you remove the combs they are on. Having removed sufficient earth and roots to enable you to get a good view of the combs, they should be taken out one by one, the Bees brushed off into an inverted skep (a cloth being thrown over it to keep them in), and a bar-frame, having been placed upon a piece of soft material, the comb must be fitted into it, tied secure with two pieces of tape, and placed in the hive, the same process being gone through with all the combs that can be secured. The Bees must then be shaken from the skep into the frame-hive, and the whole covered up as quickly as possible with the quilts. The combs containing brood should be placed in the centre, and kept as warm as possible during these operations. You will have to use smoke freely to keep the Bees under subjection, and will find it good policy to cover the face with a veil. If the hive be placed over the spot from which the combs have been removed the flying Bees will be secured, as they will join their companions in the hive, which can be gradually removed (2 feet or 3 feet daily) to the site it is to occupy permanently. As to putting on sections, it is best that the hive should contain not less than eight frames of combs before doing so; if, however, your hive is not very full of Bees when the honey flow begins, and you have difficulty in getting them into the sections on the top of the hive, you will find that work will be commenced in them readily if they be placed in a broad frame and hung in the hive at the side of the cluster. Then as soon as the Bees take to them they can be placed in the crate on the top of the hive, other Bees will thereby be induced to go up and help to fill them. You can re-queen at any time between May and the end of August. Queens are easily introduced to swarms, and a stock will readily accept a queen if, by driving, it be reduced to the condition of a swarm, or if a hive is left queenless, a queen-cell may be inserted. If a queen is introduced to a hive that has been some time queenless it is a good plan to cage her upon a comb of hatching-brood from another hive, and release her at the end of three days.

POULTRY.

Death of hens (*W. P. H.*).—Your Fowls are suffering from some form of liver disease, and I should consider it a certainty that it is inbred in them, so that by breeding from such stock you are sure to perpetuate a disorder which is practically incurable. I see no good in attempting a cure, for it is impossible to eradicate the disease so long as breeding is carried on. I would therefore recommend you to kill and bury the present stock as fast as they are noticed to be ill, and in August or September buy some March and April hatched pullets of some sound strain.—Doulting.

SPECIAL OFFER.

FLOWER SEEDS.—25 packets, in distinct and lovely variety, 1s. BEGONIAS, tubers, 2 years, sound bulbs, in splendid variety, 3s. doz; 12, extra fine, 4s. doz., carefully packed in Moss and boxes and carriage free.—TOWNSEND BROS., The Nurseries, Bloxham, Oxon.

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GARDENING ILLUSTRATED.

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ROSES.

GROWING ROSES UNDER DIFFICULTIES.

The fickleness of our climate is proverbial, and by none is this truth more thoroughly remembered than by the ardent Rose amateur. The cruel May frosts have caused many to despair of Rose cultivation altogether until the June time has come, and then one has resolved to make another effort. With the desire of assisting amateurs to successfully grow Roses in unfavourable parts of the country, I will explain my method of cultivating them in earth pits, a method I have found thoroughly reliable and very satisfactory. My plan is to mark out the ground in portions of about 16 feet by 6 feet, and remove soil to depth of 2 feet. Into the bottom put 3 inches or 4 inches of clinkers, crocks, or brick rubbish, and on to this some good sod or turf. This sod has been one year previously stacked with a fourth part its bulk of cow-dung. It is now in splendid condition for Roses. If all the Teas are to be grown, a little sharp sand might be advisable, but this depends upon the loam or turf, as sometimes it contains sufficient sand for all practical purposes. To form the walls, commence to build about 6 inches below the surface of surrounding ground. The back wall should be about 2 feet high, sloping southwards to about 1½ feet in front. To strengthen this wall a few stakes should be driven down at intervals. The lights should be about 5 feet 6 inches long and 3 feet 9 inches wide outside measure, and glazed on the modern plan without outside putty. I assume that the Roses will be planted out—a plan I much prefer—but of course they can be grown in pots in the same pits, but instead of the loam in bottom, coal-ashes, old tan, or Cocoa-nut-fibre would suffice to plunge the pots into. By adopting some such pits as these we may not only protect our Roses at a critical time in the spring when they have well started into growth, but we can also accelerate the plants by two or three weeks to those grown without such protection. Even supposing we adopt such pits for some very choice varieties only, we should amply be repaid for our trouble. Excepting near large cities turf is cheap, and a handy man can make his own lights. I prefer turf walls to wooden ones, being less liable to harbour insects.

Perhaps a short summary of operations would be useful, and I will therefore assume that the pits are erected and the plants planted in the autumn. The lights must be kept off night and day until severe weather threatens. Give air at every favourable opportunity, and about the end of February or beginning of March prune the plants. Keep the lights off now during the daytime, but put them on every night, so as not to be caught napping. The slower the Roses break into growth the better it will be for our plants, and much finer blooms will be the result.

Watch carefully for the small maggots that so soon injure a prominent shoot. As growth progresses the green-fly will appear, and here again we have an advantage over the outdoor plants, as we are now able to fumigate them. Very often a house of Roses is ruined by faulty fumigation. A very safe plan is to obtain some good Tobacco-paper. Invert an 8-inch pot, put a red-hot piece of coke on floor of pit, and put on to this about two handfuls of Tobacco-paper, then cover with the inverted pot. One such pot should be sufficient for three lights. It is better to keep the smoke in the pits a good time than to fill them rapidly. The green-flies do not then get a chance to live. The operation should be repeated the second night, as many flies will hatch out the second day. Careful watering is most essential. If plants are planted out, or the pot-plants well plunged in the fibre or tan, very little will be required beyond the beneficent rains which they should at all times obtain. By the end of May many of the plants will be showing bud. These can have some weak liquid-manure about once a week. When the middle of May is passed it will generally be safe to remove lights altogether. Keep them near at hand, as they will be very useful to protect flowers from heavy rains. If Tea Roses and Bourbons are grown the lights will again be invaluable when the chilly autumn appears and the cool, damp nights retard the buds from developing. By this slight protection clean, beautiful Roses may be obtained almost up to Christmas. N. E.

Treatment of dwarf plants —I should like to ask you a favour on Rose-growing, as I am quite a novice on the subject. I bought five dwarfs in November, 1896. My reason for asking you is I do not quite understand your notes on Rose-growing. Should I cut them down to within an inch or so to where they are budded, or how should I treat them? I want them for a local show about the end of July or August. They are Mrs. J. Laing, Comte Raimbaud, Jean Soupert, Alfred Colomb, A. K. Williams. They are all looking well. Thanking you in anticipation, I remain—In a Fix.

*** You cannot have read our notes closely. We advise the "cutting down of stocks upon which Roses were budded last season," not Roses themselves. However, you must prune your newly-planted Rose-trees very close this first season, and follow the usual lines next.

Celestial Sweet Brier.—I am not aware of any Sweet Brier named Celestial; but the Maiden's Blush sometimes goes by that name, and it is also applied to a Rose much resembling the Maiden's Blush, but with a bluish foliage, and by no means so strong a grower as the Maiden's Blush.—A. Piper.

Rose-buds rotting *(Rose)* —Your Rose is suffering from canker, which is causing the flower-buds to drop off. Maréchal Niel Roses are very subject to canker, for which, unfortunately, there is no remedy; but do not grub the plant out, as it will probably send up new growth from the base.

The best twenty-four true Cactus Dahlias. — Will any amateur grower give names of the best twenty-four true Cactus Dahlias? Only those that bloom freely on stems thrown well above the foliage (with twisted or pointed petals), as I find many described in growers' catalogues of such habit after many years' trial cannot be relied upon, and only bring disappointment after the expense and labour.—Amateur Dahlia-grower, *Chiswick, W.*

DAFFODILS IN THE GRASS.

Very beautiful are Daffodils naturalised in the Grass, and they are adapted for planting in quantity in the Grass in suitable positions, where they may escape the mowing-machine or the scythe, at least until their leaves wither in hay-time, or say June and July. We are not recommending a novel practice, for the naturalisation of Daffodils is an accomplished fact to-day in many places. Poet's Daffodil (Narcissus poeticus, varieties ornatus and recurvus), N. incomparabilis, or the Star Narcissi in variety, and several of the trumpet Daffodils, and especially N. obvallaris (Welsh or Tenby Daffodil), and N. princeps (so-called Irish Daffodil), are suitable for naturalising.

The essential practical points are first the obtaining of good sound bulbs in quantity early in the season, and not later than August if possible. The golden rule is to plant only the best and strongest kinds, and to use these boldly by the thousand. Then they must be well planted 5 inches or 6 inches deep in bold clumps or masses, and not dotted about singly or planted in lines or any set pattern. If several groups of the same kind are planted, the groups should themselves be arranged in relation to one another, with one group larger and bolder than the rest, so as to give more mass towards the centre on which the eye may rest, and not be led to wander about, as it inevitably will do if several adjacent masses are of equal importance. As in colour inequality means brilliancy, so in groups or masses inequality means an added interest, but one point in a line or in a group should always be denser and bolder than the rest, or it will never satisfy. The very best rules on compositions of this kind are those in Ruskin's "Elements of Drawing," which should be studied by all who attempt the planting of flowers or trees. In all large gardens Daffodils should be naturalised.

Planting itself is best done with a spade or draining tool, and in hard ground or among tree-roots a pick or axe may be necessary. Loosen the soil to a depth of 12 inches to 16 inches if possible, and if leaf-soil and sand can be added in the planting, so much the better. Two or three labourers with a cartload or two of sand and mould well mixed will soon put in a few thousand bulbs, but there should be some supervision, unless the size and shape of the groups be marked out beforehand, as they were by one friend of mine with the lawn-tennis marker! After planting the turf is relaid, and all after culture consists in giving the annual top-dressing of soil and manure usual for meadows early in the year. In a word, the naturalisation of bulbs in meadows is not in any way inimical to their due and proper use from the home-farmer's point of view. Mowing does not take place until after the leaves wither. Then they may go to swell the bulk of the fodder without injury, even if not with some slight advantage, since we read and heard of the cows in Scilly being fed on Narcissus leaves during the drought of 1895.

What we especially plead for is a greater general extension of bulb planting in Grass in all suitable positions. Once well done, results are

good for many years, and, as we have shown, the art of the gardener and planter often survives after that of the builder is decayed or swept away. It is no new hobby, but has long been practised in the best of old country places, until in some cases quite a character has been added to domains, and bulbs on the Grass constitute the essential charm. F.

ORCHIDS.

Foxbrush Orchid (Aërides Fieldingi).—The long, curved racemes of this Orchid—from which it takes its popular name of Foxbrush Aërides—are now very attractive. They are each about 2 feet in length and thickly set with flowers, these being whitish, with spots of a bright rose. The leaves are thick and leathery, of a deep glossy green when the plants are healthy. It is perhaps the most popular kind in the genus, thriving well in an intermediate or Cattleya-house temperature. Small plants do well in wood baskets suspended from the roof, while larger specimens are better accommodated on the stage in large baskets or pots. Clean, freshly-picked Sphagnum Moss and charcoal are all that are needed in the way of compost, and the plants in all cases thrive better in a large, roomy house than a smaller and narrow structure. A light position is necessary, but the growth must be screened from bright sunshine.

Lælia cinnabarina.—This is a gem among Lælias, and a really charming Orchid, the long, many-flowered racemes of bright orange-scarlet flowers being without a rival at this season. It is very easily grown and also blooms freely. On the stage of the Cattleya-house, in pots, or suspended from the roof in baskets, it is sure to flourish if reasonable care is taken in its culture. Owing to the length of time the flowers last it makes a capital plant for exhibition, and is, in fact, one of the most useful kinds in existence. It is a native of Brazil.

Lælia flava.—This pretty and very distinct old Orchid deserves more extended cultivation. The blossoms are produced a good many together on erect racemes from the top of the cylindrical pseudo-bulb, and last about a month or nearly so in good condition. The segments are all narrow and of a pretty bright yellow. It should be grown in pots, and likes a rather thin compost over effective drainage, equal parts of peat fibre and Moss, with plenty of rough crocks and charcoal, suiting it well. I have also seen it doing well in baskets suspended from the roof, but it can hardly be recommended for this mode of culture. It is a native of Minas Gernes, in Brazil, and has been in cultivation since 1839.—R. T.

Odontoglossum prænitens.—Although small, the shining yellow flowers of this Orchid are very attractive. They are produced on erect racemes something after the style of a small O. triumphans, and each bloom measures about 2 inches across. The sepals and petals are both blotched with brown, the lip being probably distinct from that of any other Odontoglossum, white at the base and margin, yellow in front and suffused with reddish brown. This is probably one of the natural hybrids, of which so many exist in the genus, and most likely O. triumphans is one of the parents. It varies considerably in the colour markings and also a little in shape, and will be found to thrive under the usual cool-house treatment.

Cheap and easily-grown Orchids (*W. G. M.*).—The following Orchids, which require stove treatment, are invaluable either for cutting or decorative purposes, generally lasting several weeks in good condition—viz., Calanthe Veitchi, C. Veitchi alba, C. vestita, C. rubro-oculata, C. luteo-oculata, and many improved varieties which have been artificially raised during the past few years; also such species as Dendrobium nobile, D. Phalænopsis Schroderianum, D. Dearei, D. Freemani, D. Wardianum, Phaius Cooksoni, P. grandifolius, Zygopetalum Mackayi, Z. crinitum, and Cypripedium barbatum, C. Lawrenceanum, C. Harrisianum, C. Sedeni, C. œnanthum superbum, etc. A few Cattleyas are always useful for cutting purposes, as C. Trianæ, C. Mossiæ, C. Mendeli, C. Lawrenceana, and C. Bowringeana. They require the coolest position available in the warm-house. The well-known Cœlogyne cristata and its varieties, being remarkably free in flowering, should also be included in the above list. For the cool greenhouse the following species are particularly suitable for your requirements—namely: Epidendrum vitellinum, Ada aurantiaca, Cattleya citrina, Cymbidium Lowianum, C. eburneum, Cypripedium insigne, C. Spicerianum, C. Leeanum, C. villosum, C. Boxalli, Dendrobium Jamesianum, D. infundibulum, Lycaste Skinneri, L. plana, L. cruenta, Miltonia cuneata, M. candida grandiflora, Pilumna fragrans, Sophronites grandiflora, Odontoglossum crispum (Alexandræ), O. triumphans, O. Halli, O. Pescatorei, O. Rossi, Oncidium Marshallianum, O. macranthum, O. varicosum Rogersi, etc. Apply to the Secretary, Royal Horticultural Society, 117, Victoria-street, London, S.W., who will be pleased to give every information about the society.

PROPAGATING THE MYRTLE.

It is not at all difficult to propagate this popular plant, either from seeds or cuttings. The latter is the method most generally adopted, and we give a full-sized cut of a slip suitably prepared for this purpose. Select wood that is about three parts matured. Take this off close below a joint, or have the slightest portion of older wood attached to form a "heel" to the cutting. Insert very firmly in a compost of coarse sand, fibrous turf, and leaf-soil in equal

Myrtle cutting.

proportions. If you can keep the cuttings close for a time in the ordinary greenhouse there is little risk of failure, but they will root without this, and also in a slightly heated frame. M. communis is a universal favourite, but M. Ugni is not so well known. The fruits of this variety are borne freely, and when ripe are not only high flavoured, but emit a most agreeable perfume of Myrtle that pervades the whole house. It is not so hardy as M. communis.

PROPAGATING BEGONIAS.

This is so simple an operation that we see no necessity for an illustration. When the tuberous section commence growth it is an easy matter to divide a corm into two or three, each portion of which will make an equally useful plant, as would accrue from the original bulb or tuber if left intact. Place the tubers upon a sandy compost, burying them about half-way and standing the frame or box in a warm temperature with plenty of light. By the time eyes push out from the crown a few young roots will also be formed. Now lift the tuber, shake away a little of the compost that may cling to the base, and carefully divide by passing a sharp knife clean through it, leaving one or more eyes to each portion of the corm, and endeavouring to have a portion of root attached as well. Pot up the divisions into a light and sandy compost, place in heat once more, and grow on in the ordinary way.

Hampstead Heath Protection Society.—The residents of Hampstead seem determined to fight for the preservation of the natural beauty of this precious open space, and, we think, with reason. The County Council evidently have no people of any taste or artistic feeling in charge of their open spaces, which are disfigured by the most ignorant gardening in Europe, especially upon the point of view of design. When men of this sort come to deal with a naturally beautiful space like Hampstead Heath, their only idea is to drill it into the London square or park conception of a paradise—that is to say, everything hard, garlanded with iron railings, and flattened out so that nothing at all remains of what natural beauty the surface ever had. We wish all success to the society, and have only to add that it must not be content with doing nothing, for it is possible to do good work in such a place as Hampstead Heath, and every effort should be made to keep up the heath's natural adornments of Furze and Birch and other native trees and shrubs. The vast series of noble gardens that have come into the Council's possession have been left to the tender mercies of surveyors and people with no training whatever in the knowledge of trees or plants or artistic gardening, and a change is urgently called for in this respect.—*Field*, April 17th.

TREES AND SHRUBS.

Trees of quick growth to hide stabling.—As a subscriber to your valuable little paper, I write to ask you what trees you would advise planting in the following situation—on a side lawn, close to a house, and with the object of keeping out the view of the stables, etc.? Also, what kind of tree would you advise planting in the centre of a village? The latter is to be a commemoration tree of this year.—E. M. Birch.

*** It is late to move trees, but a couple of Lombardy Poplars might move safely, and would soon hide the stables. These are not evergreen, however. If you wish for evergreens use the Cupressus macrocarpa, and have fair-sized plants from pots. So many trees are suitable for the village commemoration—Oaks, Chestnut, Yew, etc.—but you will have to get them in pots if delaying planting until commemoration day. A Chestnut would grow the quickest, and seems about equally suitable as the Oak. So much depends upon space available that we can give no definite reply.

Propagating Lilacs.—I have two French Lilacs in bud, and I think they are grafted on the common Lilac. But I want to know can I root cuttings, and which is the best way of grafting?—Amateur Gardener.

*** There is no difficulty in getting the Lilac on its own roots. Cuttings root readily in a gentle heat, also in the open ground, under the same conditions as the common Privet. Grafting, fortunately, is not practised now so much as hitherto. The stocks used for grafting are Syringa vulgaris, Oval-leaved Privet, etc. The Lilac is propagated very largely by budding in summer on the above-named stocks.

Trees for certain positions (*Robin Hood*).—Cupressus Lawsoniana ought to succeed where you have planted it. As you are anxious to plant two sorts of Conifers on the other sides, the following will answer your purpose: Cupressus Nootkaensis (Thujopsis borealis), free-growing and very graceful. Thuja gigantea is a vigorous grower and of erect habit. The Lombardy Poplar thrives well in nearly all positions. One of the best Apricots for general purposes is the Moorpark variety; its large fruits are juicy and very luscious. The two Pears we should recommend you to plant would be Doyenné du Comice and Marie Louise. It is too late to plant fruit-trees this season.

Robinson *v.* Ward, Lock, & Co. (Ltd.)—The Plaintiff in the above action, the Proprietor of this paper, on the 2nd day of April inst., obtained from His Lordship Mr. Justice Kekewich, in the Chief Division of the High Court of Justice, an order perpetually restraining the Defendants from printing, publishing, selling, or disposing of, and from advertising, offering, or exposing for sale any Newspaper, Periodical, or Publication by the name of "Gardening Illustrated," or by any other name so similar to "Gardening Illustrated," as to induce the public to believe that such Newspaper, Periodical, or Publication is this paper.

HARD-WOODED PLANTS.

Croweas, with their pink flowers, are bright and beautiful late in the year. The Oleanders have flowers little inferior to Carnations; they will withstand almost any kind of illusage, and yet they are now seldom met with. Pleroma elegans, one of the grandest plants ever introduced, having flowers of an exquisite purple colour, should be a prominent object in every collection, but it is however by no means often seen. In addition to the foregoing there should be in every greenhouse some of the Polygalas, which are almost as easy to manage as Fuchsias and equally free in the production of flowers; likewise the different varieties of Statice, such as S. Holdfordi, imbricata, and profusa, all of which bloom for months together; Epacrises, which are amongst the finest and most cheerful-looking of all spring-flowering plants. Even Daphne indica, which is prized by everyone for its matchless perfume, is now so little grown that one may go through a score of greenhouses without meeting with it. The above is by no means an exhaustive list of plants which any ordinary greenhouse should contain, but their general absence is enough to show the barrenness to which the cultivation of greenhouse plants has been reduced. These plants do not require much training—in fact, if duly stopped in their early stages of growth they give but little trouble in this respect. Generally speaking, hard-wooded plants do best in a soil composed of turf, peat, and in some cases loam also may be used with advantage. Plenty of sharp silver-sand should be mixed with the soil, and abundance of drainage should be placed in the pots.

H. B.

Phlox stellaria.—A useful member of the alpine section of Phloxes, more particularly for its early flowering. It is not nearly so showy as the well-known Nelsoni or the varieties of setacea, which may frequently be seen quite a mass of colour. P. stellaria this year was in flower at the end of March, and has continued blooming since that time. The plant is of very distinct habit, its trails of growths thickly covered with linear-shaped leaves and sprinkled with snow-white starry blossoms. It makes a capital rock plant, and for this purpose as well as its early flowering is to be commended.

BORDERS OF FINE-LEAVED PLANTS AND FLOWERS.

In the illustration we see the result of boldly grouping various fine-leaved hardy plants, such as the Gunnera, with Cornflowers and other things. With the rich store of fine-foliaged plants from temperate climes at command, it is quite possible to have a beautiful garden of hardy plants alone, for such subjects as the Ailantus, Paulownias, and other fine-leaved trees make fine growth if cut down close to the ground every year like herbaceous plants. We have also the hardy Palm (Chamærops), the Yuccas, and graceful Bamboos. As regards the dwarf subjects suitable for edgings, we have such hardy plants as Siebold's Plantain Lily (Funkia), Acanthuses, and plants of a similar character. Amongst plants that are annually raised from seeds, and which merely require the protection of glass to start them, we have much variety between the stately Ricinus or Castor-oil-plant and the dwarf Centaurea or Chamæpeuce. It is by selection from the various sections that the best results are obtained.

A border of fine-leaved plants, chiefly Acanthus and Gunneras. From a photograph by Mr. S. Wyndham-Fitzherbert, Torquay.

Although tender plants in pots taken out of the houses for the summer are decidedly effective for special occasions in a general way, any plants that are not able to stand out-of-doors from the first week in June until the last week in September can hardly be called fit for summer bedding. Amongst the most suitable are several kinds of Palms, such as Seaforthia elegans, Chamærops excelsa, and C. humilis; Aralias of various sorts; Dracæna australis and D. indivisa; Phormium tenax and its variegated form; Yucca aloifolia variegata, Ficus elastica, and Eucalyptus globulus, the bluish-grey tint of which is unique in its way. Erythrinas make fine autumn beds; being very brilliant in colour, they are useful for lighting up sombre masses of foliage. Bamboos have such beautiful feathery foliage, that where the winter is too severe to trust them out they should be utilised as large pot plants for plunging out-of-doors in summer; they luxuriate on the margins of water, and look particularly well in irregular groups or clumps. Abutilons are particularly well adapted for open-air decoration, either planted or plunged; Abutilon Boule de Neige, Boule d'Or, and Darwini are all good; A. tesselatum and A. Thompsoni are also very effective, the markings of the foliage being rich and varied. The hardiest Tree-Fern (Dicksonia antarctica) looks well plunged in shady dells where a good canopy of overhanging foliage gives shelter and shade; and several varieties of dwarf Ferns, such as the Bird's-nest Fern, are admirably adapted as undergrowth to the above. Plants raised from seed will, however, form the majority in most places, from the lack of room under glass for sheltering many large plants. Of these the most generally useful are Cannas. If sown in February in strong heat they make fine plants for bedding; their foliage is lovely and the flowers rich in colour. The underground roots are permanent, and increase in size and strength every year. They may be taken up and wintered under glass, or securely protected in the soil by means of external coverings. The Cannas one sees in the public parks are generally protected in winter. The tall light green foliaged varieties make excellent centres for groups, as they mostly flower freely, and the dwarf bronze-foliaged sorts are good for edgings. Solanums are also very effective. The spiny-leaved S. robustum, the elegant cut-leaved S. laciniatum, and S. Warscewiczi make good single specimens or edgings to groups of taller plants. Wigandias, Ferdinanda eminens, and Melianthus major are likewise all good plants treated as annuals, and among dwarf subjects that can be raised with them I may mention Acacia lophantha, Amaranthus in variety, Cineraria maritima, and Centaureas, with their silvery, elegantly cut leaves. Bocconias, with their tall spikes of graceful flowers and noble foliage, make effective and permanent plants for isolated groups. The Pampas Grass and Arundo ought also to find a place in every garden, for they are beautiful at all times of the year, and on the margins of water are quite at home. Several varieties of Rhus or Sumach have very beautiful foliage, Rhus glabra laciniata being especially elegant. Aralia japonica is also well adapted for flower garden decoration, as are the Tritomas, with their fine Rush-like foliage and flame-like spikes of flower, the Funkias, the variegated Grasses; in fact, the material to select from is unlimited, even if we confine ourselves to fine-foliaged plants.

As to arrangement, in all cases beds or sets of beds of the simplest design are the best. Shelter from wind is also of the first importance, and

for this reason recesses in shrubberies or banks clothed with foliage form the most fitting background for beds or groups to nestle in. Avoid Musas or Caladiums, the leaves of which tear into shreds if winds cannot be entirely shut out, also plants that look unhappy on the occurrence of a cold night or two, and concentrate effort on subjects that grow and look luxuriant under nearly all conditions. If a dell or garden overhung by trees is at command, where ordinary flowering plants run all to leaf and refuse to flower, take advantage of it for fine-foliaged plants. It will form a charming change from brilliant bedding plants to come upon a garden where each plant spreads forth its delicate foliage. J.

HOUSE AND WINDOW GARDENING.

POLYANTHUS-NARCISSUS IN BOWLS.

I SEND to you a photograph of a bowl containing Polyanthus-Narcissus Jaune Supreme. The bulb is grown in water and kept in place with stones. It was a lovely picture of flowers for some time in early spring. Moss and Ivy were placed over the stones.

ERNEST LEWIS.
Fersfield, Newton Abbot, S. Devon.

Polyanthus-Narcissus Jaune Supreme, grown in a bowl. From a photograph by Mr. W. Leaman, Newton Abbot.

Sweet Peas.—These in the open should be staked at an early stage, and small twigs also inserted thickly all along the rows to act as a protection from cutting winds. An early mulch is advisable, and a little soil may be drawn up to the same—that is, if the Peas were not sown in trenches. In staking, whether for rows or rings, the sticks should be left nearly or quite the entire length. Given a favourable season, the plants attain a great height, and short sticks mean an early tumbling over of the haulm and the amount of flower indifferently displayed. I am again growing a fair quantity in pans for trellis covering, the display last season being very acceptable. The difficulty about this confinement in pans is that the plants are more short-lived than in the open ground. No amount of artificial feeding, however strong or persistently followed up, is sufficient to keep them on right through the season. One really wants a later sowing that will be ready by the time the first is over. Some rings of Peas may be placed at the back of herbaceous borders if any filling up is necessary. They never seem out of place, and also may, I suppose, claim to share with Poppies the honour of being more extensively used for ordinary vases and dinner-table work during their particular season than any other flower. Certainly a well-arranged table, whether on a large or small scale, consisting of Sweet Peas and the feathery panicles of Gypsophila, is bad to beat. If the herbaceous form of the Gypsophila is not to hand, a sowing should have been made of G. elegans; although not so large, it is equally beautiful.—T.

The May Tulips.—There is just now a strong desire to obtain and to cultivate all the old florists'-varieties that Cobbett tells us were sold at 5s. the hundred in 1838, when the first edition of his "English Gardener" was published. These old rogue or seedling Tulips are very abundant and beautiful in some Italian gardens, and can be bought at from nine to fifteen francs per 1,000. The Belgian or Darwin Tulips seem to be merely mixed seedlings of the Gesneriana race, but, like all Tulips whatever, are very beautiful in bold beds, groups, or masses. For rich colour effects the self-coloured kinds are best, such as the true crimson T. Gesneriana and T. macrospila, T. fulgens, T. elegans lutea, T. retroflexa, T. vitellina, and other similar kinds now well known.

PLANTS FROM SEED.

THE raising of plants of nearly all kinds from seed is a matter of much importance to gardeners of all classes, but to none more so than the amateur with very limited accommodation for such work. Commencing with bedding plants, besides the many that are usually propagated by cuttings, great quantities can be very easily raised from seed of good strains. This matter of seed sowing should receive attention at the end of February or very early in March. Where there are only small quantities of plants wanted from seed, a pinch of such as Lobelia, Pyrethrum, etc., sown in a small box or 8-inch pot, will generally be sufficient; but where large quantities are wanted the best way of raising them is to sow the seeds on hot-beds. This is a plan which I have adopted and found to answer admirably. The hot-beds should consist of about equal parts of stable-manure and tree leaves (Beech or Oak are the best). These hot-beds should be built up firmly to 3 feet high at the back and 2 feet in front. On this the frame is placed, and then soil suitable to the requirements of the seed to be sown is spread all over the inside of the frame to a depth of 6 inches. This is made firm and smooth on the surface, and then the seeds are sown afterwards, shaking a little soil over them through a fine sieve. A large-sized frame sown in this manner with Lobelia, Pyrethrum, Stocks, Phlox Drummondi, Tagetes, Verbena venosa, or other similar bedding plants, will contain many hundreds of seedlings, and when the seed is good and not sown too thickly the majority of the plants may be kept in the frames till bedding-out time has arrived. Air should be admitted by degrees as the plants grow and the weather becomes gradually milder, and about the end of April or early in May (if favourable weather) the lights may be removed from the frames altogether. Those who have only one frame may yet sow many seeds in it, making a little patch of each kind. The seeds germinate much more freely when treated in this way than when sown in pots, wherein there is always danger of the soil becoming dry, and thereby the seedlings are severely checked. The plants, too, grow much better when young in frames than in pots, and the labour saved in not having to shift them about is great, not to speak of the space thereby left vacant in other frames and houses owing to not having to accommodate such plants. I have found a fine loamy soil, with some old Mushroom-bed-manure or leaf-mould well decayed, with a little sharp river-sand, to be a good mixture in which to sow all kinds of small seeds, as the latter not only germinate freely in it, but the young plants grow well in it afterwards. In propagating by means of seeds, as many do in pots, it is necessary that the pots should in the first place be well drained, and over the drainage should be placed a layer of Moss or some other rough material before filling in the soil. Coarse soil may be put at the bottom of the pots, but it is necessary that fine soil should be on the top in which the seed is sown. To prevent the soil becoming quickly dry, it should be pressed down very firmly, and in order to insure quick germination, the pots may be plunged in a slight bottom-heat. Failing this, let them be set in a warm-house with the mouth of the pot covered over with a piece of glass. In sowing seeds in pots, as the spring advances it is a good plan to put a sheet of paper over the glass until the young plants are through the soil, when the paper should be at once removed. Chinese Primulas are as much benefited by this paper covering as anything I have tried. In raising plants from seed in small pots it very often happens that they are allowed to grow into a close mass before they are thinned out or transplanted. This ruins many by drawing them up with long stems, and checks them severely when planted out thinly by themselves. To avoid this and secure sturdy young plants from the first, at least one half of the seedlings should be carefully drawn out of the soil as soon as they are large enough to be handled, and planted at a suitable distance apart in pots, boxes, or frames. Fifty plants produced by this method of culture will be worth 200 of close grown ones at planting-out time. All seeds from which flower garden plants are expected should be sown end of February or very early in March. This remark also applies to Stocks and Asters, as these are very often sown too late to give them a fair chance of blooming fully before being cut off by frost in autumn. Early vegetable as well as flower-seeds may be all raised in the same way with much advantage. For Cauliflowers, Celery, Leeks, Radishes, Carrots, etc., nothing surpasses the old-fashioned hot-bed and frame. When seedlings that have to be planted out in the open ground are raised in pots, plant them out on a hot-bed as soon as they are large enough to handle, as they will grow more freely there than anywhere else, besides which, in a frame they are always near the glass, consequently they can be grown dwarf, and as air can be freely admitted at any time or in any quantity, they can be planted out as soon as weather and opportunity permit. H. B.

Iris paradoxa.—This little Iris is now in flower. So far as my experience of it goes, it grows freely in turfy loam and burnt clay mixed, these forming a very porous rooting medium. The one special thing it seems to want—at least in my climate, with its somewhat heavy rainfall and humidity from a low altitude and river valley—is shelter from wet from autumn to spring. A small sheet of glass for the last few years has quite met its wants. I mention these cultural points because I know so many have failed to keep the plant. I am sure it will stand our coldest winters if not in a wet state, and from such it may easily be kept by using the simple cover mentioned.—T.

Fuchsias as bedding plants.—It is a pity many of the varieties of the Fuchsia are not more often used for the summer. In the Regent's Park Gardens several of the beds of different shape are filled with an interesting lot of plants, one of the most striking last year being a bed of Fuchsia Mme. Cornellisen, prettily interspersed with Abutilon marmoratum, and for a groundwork a carpet of Lobelia. The bed was edged all round with Saxifrage.—D. B. C.

CHRYSANTHEMUMS.

Chrysanthemums for pots and outdoors (*John Wilson*). — Your list includes several of the best and latest introductions, but hardly any of them are suitable for culture in the outdoor border, especially so far north (Elgin, N.B.). For an outdoor display you should obtain a few of the semi-early sorts, as they would flower and keep the garden bright before the really severe weather sets in. From the varieties in your list you might try Mons. Ch. Molin, Mme. E. Capitant, Sarah Owen for outdoors. The best six of the remaining varieties for pot culture are Mrs. H. Weeks, which should be pinched at once and first crown-buds retained; Edith Tabor, first natural crown-bud; Mrs. Chas. Blick, first natural crown-bud; Mrs. J. Shrimpton, pinch at once and take first crown-bud; Lady Byron (not Mrs. Byron, as mentioned by you), second crown-bud; and Mons. C. Molin, the second crown-buds of this variety being the kind to retain.

Chrysanthemums for decoration (*Chry-s-mum*).—Yes; follow instructions given to "Stamp" in our issue for January 30th last, page 676. If your plants are nicely rooted pinch out the points of the shoots at once, and grow on the succeeding growths, treating these as prescribed in the issue referred to. We do not know H. albinus, and think you must have made a mistake in the name. Pelican is a late sort, white, tall, and you had better leave that variety for more experienced growers. The Tribune is yellow, of medium height; Alberic Lunden, crimson-amaranth, medium height; Excelsior, carmine - rose, medium height; Mons. H. Elliot, salmon-buff, dwarf, introduced 1885; and Enfant des deux Mondes (White Louis Bœhmer), white, rather dwarf. Each of these sorts flower about mid-November. We are pleased to know you find GARDENING so helpful.

Chrysanthemum L. Canning.—Complaints are frequently made that this variety does not grow with sufficient freedom to render it profitable. It has a way of coming to a standstill just when growth should be freely made, and the consequence is that a much smaller number of buds are formed than most kinds form in pots of that size. It is difficult to say what arrests growth in this manner; it certainly is not a question of roots, for it happens with me just as the pots are becoming well filled with healthy fibres. The leaves then take on a yellow tinge, and very little headway is made. When this occurs suckers begin to spring up freely, which does not happen in the case of other late-flowering kinds, some of which do not give cuttings before the end of January. If the plants are set out in the open ground in the way that market growers practise, to be lifted when growth is completed, the chances are that a great portion of the buds will fail to expand. The only really satisfactory way I have found of growing this variety is to keep the plants a second year. They may be put into the open air early in April in a sheltered situation, and about the middle of May the young growths should be thinned out to about half-a-dozen. During the growing season they must get an occasional top-dressing of some concentrated stimulant, for, of course, there is but little nourishment left in the old ball of earth. It is a good plan to put in some cuttings in May, flowering them in 6-inch pots. If these are shifted the following season into 8-inch pots and treated liberally they will make fine bushy specimens that are capable of producing three or four dozen good blooms. I have found that these two-year-old plants expand their buds much better than young ones.—BYFLEET.

Chrysanthemums out-of-doors.—I wish to plant Chrysanthemums in a garden facing south-east at Newcastle-on-Tyne. Privet-hedge on east and west, and house on north. Stiff soil. What sorts would be suitable? When should I plant? In what part of the garden should they be planted? About ¾ mile from the town.—THUJA.

*** The number of Chrysanthemums which are likely to succeed well in your garden so far north as Newcastle-on-Tyne is not very large, especially as your soil is stiff and cold. A position sheltered from cold winds should be selected, and the best time to put the plants out would be towards the end of May. The undermentioned varieties are useful for outdoor planting: Madame Desgrange, white and very free-flowering, height about 2 feet; Marie Masse is very fine, its lilac-mauve flowers being very conspicuous; Roi des Précocés bears a profusion of deep crimson flowers, height 3 feet; Frederick Pele, bronzy-red; Lady Fitzwygram, white, very good; Harvest Home has very distinct flowers, colour crimson and golden-yellow; Elsie, sulphur-yellow; Dr. Sharpe, crimson; and Ryecroft Glory, bronzy-yellow.

GARDEN PESTS.

THE TURNIP SAW-FLY (ATHALIA SPINARUM).

THIS is still another saw-fly which at times is very destructive to the plants it feeds upon, or rather it is the grubs which do the mischief. It is one of those insects which is by no means common every year; for some seasons, perhaps, they will be quite scarce, and then for a few years they will be very abundant, and do an immense amount of injury to the Turnip crop, and then again become scarce. This insect may be found in all parts of England, and is sometimes found near the shore in extraordinary numbers, from which it is inferred that they come to us from the Continent, where they are said to be very common. At Cromer, in Norfolk, many years ago they appeared in such swarms that they were seen to "arrive in clouds, so as

1, The Turnip saw-fly (about twice its natural size); 2, grub (natural size).

to darken the air," and that "they lay upon the cliffs 2 inches deep, and might have been removed by shovelfuls." The late Mr. F. Smith mentions finding them on the sand-hills at Deal in a huge swarm. He writes: "On nearing the hills I observed that they were partially obscured by a dense cloud, shifting in the sunlight, occasionally of a bright orange tint, and then became quickly of a bright, glittering silver hue as the sun shone on the wings of hosts of Athali spinarum; the cloud was borne seaward by a gentle south land breeze." Probably in the cases of huge swarms found near the coast the insects are bred on the Continent; but when found inland, particularly if not in very extraordinary numbers, they have more likely just emerged from chrysalides which have laid in the ground all the winter near where they were found. This insect is the true Turnip-fly, but this name is more often given to the small beetle (Haltica nemorum) which is so frequently injurious to the Turnip crop. This is, however, a great mistake, and should be carefully avoided. The grubs are known by the name of niggers, black grubs, black caterpillars, black canker, or black slug, according to the part of the country in which they are found. They are more often destructive on farm land than in gardens, but in the latter they will probably destroy the crop unless some means are taken to prevent them. They attack the foliage, entirely stripping the crop, leaving only the midribs and a few of the larger veins. Various methods have been tried for the destruction of these pests. The grubs particularly like dry, warm weather. Thunderstorms and heavy rains are most fatal to them, therefore watering them with liquid-manure or even with plain water is very beneficial, especially if a dull, cloudy day be chosen, as the moisture does not then dry up so soon as when the sun is shining, and it is better for the plants. Strewing soot, fine ashes, quick-lime, or powdered chalk over the leaves when they are wet with dew is very useful. Knocking the grubs off with a light bough or broom has been found very serviceable, for if the grubs are knocked off whilst they are changing their skins—an operation they perform about once in seven days—they are almost sure to die. Thick sowing has been recommended, as there are then more plants to bear the brunt of the attack, and the plants being closer together, the moisture, which the grubs detest, does not evaporate so soon. When the crop is removed the soil should be turned over well, so as either to bury the chrysalides deeper than they would be naturally or to expose them to the birds and weather. Rooks and other birds are very useful in destroying the grubs, and swallows kill large numbers of the saw-flies. Unfortunately few parasitic insects are known to prey on them. The saw-flies do not usually make their appearance until May, but they have been found as early as the end of March. As every female will probably lay at least two hundred eggs, it is important to destroy, if possible, the flies, particularly as there are sometimes three broods in the course of the season. The flies are most abundant in July, August, and September. The females make slits on the undersides of the leaves, in which they deposit their eggs. About twenty are laid on one leaf. In favourable weather the grubs are hatched in about five days, and soon pierce the leaves through and through with holes. They seem to delight in warmth, often lying curled upon the leaves in the full sun. When full grown they bury themselves in the ground to the depth of some 2 inches, and form a silken cocoon round themselves, within which they become chrysalides. The silk is rather sticky at first, so that little particles of earth adhere to it, therefore if the cocoons are turned up they look like little pieces of earth. The saw-flies do not emerge from the chrysalides of the last brood until the following spring. The males and females are very much alike, but the latter are larger and stouter in proportion than the males, which measure about 3-10ths of an inch in length, and ½ inch across the wings. In both sexes the head and feelers are black, the fore-body dull orange, with two black oval patches, one on either side, which join in the middle of the back, and two black marks at the base. The body and legs are of a dull yellow colour, the tip of the shanks and part of each joint of the feet black. The full-grown grub is often ¾ inch and sometimes 1 inch in length. The first three joints of the body are rather larger than the others. When the grubs are young they are nearly black, with a pale stripe on either side; later on they are slaty-grey, with a white stripe on each side, and are yellowish beneath. They have eleven pairs of legs, each joint being provided with a pair except the fourth. The cocoons are oval, about ½ inch long, and of a brownish colour.

G. S. S.

Cure for caterpillars amongst Gooseberries.—Having in the years 1892 and 1893 had my garden completely devastated by these pests so that not a leaf was left on the Gooseberries, I intended digging up the trees and throwing them away, as I had in vain tried the recognised remedies of lime, soot, salt, etc., and even hand-picking, when a friend advised me to try a plan that she had completely succeeded with—namely, to sow between each Gooseberry-bush a Broad Windsor Bean. I did so in the following March and each year since, and I have never since had a caterpillar on my trees.—VERBUM SAP.

Notes on recent articles. — As an amateur gardener of experience, I beg to suggest that "clothing the brown earth" in mixed borders, unless done with great care and much regularity, gives an unpleasing idea of untidiness suggestive of the wild garden. I find that borders or regular clumps of flowers, say of Daffodils, with Crocuses in front of them, around a bed, look better than when planted in the bed itself among Roses or herbaceous plants. I may add that Daffodils flower every season with me, not on alternate years as with your correspondent, Mr. Vokes. As an evergreen wall-shrub I have grown and flowered Camellias for many

years, but not on a south wall unless shaded by a tree. The foliage will not stand the sun in summer; an east wall suits them better.—E. M.

SOME USES FOR WIRE-NETTING IN THE GARDEN.

A few hours of bright sunshine after a spell of dull weather made it necessary to shade several seedlings in pits and frames. In this case we did not use mats, but wire-netting, among the meshes of which some evergreen twigs had been drawn. So very useful have several lengths of the wire-netting been when treated thus that I will describe some of these, and also how I prepared the netting. Coarse 3-inch-mesh netting is used, and the clippings of an Arbor-vitæ hedge drawn or weaved among the meshes. It is a simple operation, takes very little time, and if you draw them in so that one slightly overlaps the other an excellent substitute for mats is quickly made. Placed the right way upon a frame or over a rough woodwork frame minus glass, the rain is thrown off almost as if the covering was thatch. It does not rot like the mats, the wire coming in for use season after season, and the clippings serving their purpose all through the winter and until early summer. It is much firmer than mats, resists wind better, and is quite as easy to handle. For a rapidly-improvised shelter few things can beat wire-netting when so treated, and I shall certainly use it more freely in future.

Having a grave to dress with close evergreens around the sides, we thought some wire-netting would facilitate the fixing of evergreens, and were rather surprised to find how well it worked, the length of time Arbor-vitæ clippings kept fresh, and how exceedingly useful the whole proved upon an emergency as cover.

Another use for wire-netting is in covering a wall or bank in the back-yard. Fix some pieces of wood; what is known to carpenters as 3-inch quartering is excellent for the purpose. Against these nail the wire-netting, using the French wire-nails, and slightly clinching these over a strand of the wire-netting to keep the whole firmly fixed. Now place a rather coarse compost of turfy-loam, peat, and pieces of manure behind the netting. You will find the quartering afford just sufficient space to render this an easy matter. I prefer a rather coarse mesh. Between the meshes you can plant all kinds of hardy Ferns, Sedums, Creeping Jenny, the common Musk, and heaps of other subjects. It is only a matter of careful syringing, and one can have an unsightly wall made into one of the most charming wall gardens imaginable. The subjects suitable for different positions are so numerous and varied that I must perforce refrain from naming more in these notes. In the warm greenhouse or conservatory I have seen some grand effects from putting small plants of Pteris serrulata, the Maiden-hair, and other Ferns upon walls so treated. Indeed, the Maiden-hair thoroughly appreciates so natural a treatment, especially if a liberal use of the syringe be made. Many subjects suitable for wall culture under these conditions will readily occur to my readers, and as the expense is so small and the effect permanent I would recommend it over several of the greenhouse climbers that only have one brief period of beauty during the year.

Whenever it is used in the garden there is not the least necessity to have wire-netting in a bare and unsightly condition. The Canary Creeper, Tall Nasturtiums, Convolvulus, Maurandya Barclayana, Eccremocarpus scaber, Cobæa scandens, Sweet Peas, the Japanese Hop, and heaps of others can be utilised to give cover, and form a beautiful object of what would be otherwise more or less of an eyesore. In fact, the only place where wire-netting could not be so covered is around the fowl-run, and here, of course, we do not wish to shut out any light.

A rough frame, covered with coarse wire-netting, and quick-growing climbers planted around this, will form a pleasant arbour at the cost of a few shillings, and be an agreeable retreat during the first season. A. Piper.

Sussex.

THE PRIMROSE-COLOURED SUNFLOWER.

We alluded to the annual Sunflowers in Gardening, April 10 last, page 79, and there mentioned the pale primrose variety. Of this we now give an illustration. It is a more refined flower than the kinds commonly seen, the petals primrose in tint, with dark centres—a flower to bring into the more conspicuous parts of the pleasure-ground. Seed should be sown now. A group of this amongst shrubs would make a pleasing picture.

Group of the primrose-coloured Annual Sunflower.

DAFFODILS NOT FLOWERING.

I am much interested in the query of "A. F. B.," "Daffodils and Narcissus not flowering," in Gardening, page 81, April 10th, for I have been thinking of asking you the same thing myself. I have planted thousands of Pheasant-eye Narcissus, etc., and Single Daffodils all over the grounds, expecting a bright display, but have hardly had a dozen Daffodils and not one Narcissus, although a friend's garden close here is quite full of lovely blooms. We have Double Daffodils in the meadows, old roots we have not touched for years, and they flower beautifully. Some of my bulbs planted a year and a half ago flowered well last year, but not a sign of a bloom this. I also planted several thousands last autumn, and not a bloom have I had. They are planted all over the garden, in a dell, shrubberies, etc., and the early Jonquil, together with a star-shaped kind of Daffodil planted same time, are, and have been, flowering well. I am very disappointed, as none of the Narcissus or Lent Lily bulbs were at all cheap. Our soil is chalky, and we are on high ground in Hampshire. You have answered this week, April 17th, page 93, to "Abbey," but I do not understand about replanting. How would it be any better with same soil? It would indeed be a terrible labour, and especially as the Daffodils about 20 yards off in the meadow are so satisfactory undisturbed for years. R. W. T. Hinton.

*** It is difficult to assign the true cause of this in any particular case without having seen the soil and the bulbs, but a few generalities may be stated. When Daffodil bulbs are sold by the thousand it is reasonable to suppose that they have been dug up from crowded clumps or beds, in which last year they had not room for full development, so as to form the germs of flowers for this spring before they were dup up. It may be asserted of all Daffodils, and of most other spring-flowering bulbs, that if they do not form the germ or embryo of a flower for the following spring before their leaves decay and they go to rest in summer the best cultivation possible will not supply the deficiency and make them flower the next spring. Conversely, if the embryo of a flower has been formed before the bulb is dug up and replanted bad soil and bad cultivation will not prevent its developing the flower in some fashion. There are now in my garden probably a hundred crowded and neglected clumps of Daffodils of various kinds. The leaves are abundant and healthy enough, but the flowers are few—not 10 per cent. of the number of the bulbs. If left where they are, as most of them will be, the flowers next year will not be 5 per cent. compared with the bulbs. If I dig up 300 of them in summer and plant them 3 inches apart in the finest possible soil and situation, there will be no larger proportion of flowers—say, about 15 flowers on the whole lot—next spring; but in the following spring (1899) every one of these is certain to flower. This may indicate the reason why so few of the thousands mentioned in the above letter have flowered this year; but if the soil and situation are good every one of them will probably flower next spring. It is less easy to say why Daffodils which flowered well last year have not flowered this year, if they are in good soil and not crowded. They may have been planted too late in 1895, for if planted after the end of October, though they would develop the flower of which they contained the embryo when planted, they would not develop so healthy a growth after flowering as if planted earlier. Soil in which the common double Daffodil flowers well year after year must be sufficiently good to produce healthy flowers of ordinary Trumpet Daffodils as well as of Narcissus poeticus. But treat them as you will, some kinds of Daffodil are apt to be miffy and deteriorate steadily in some soils, whether planted in Grass or in border, and one of the most difficult kinds to please is the common wild pseudo-Narcissus, which will often refuse to thrive where the common large garden double Daffodil is permanently and successfully established.

C. W. D.

THE CAMELLIA.

The Camellia is a plant of vigorous growth, often forming a large head on a comparatively small-sized stem, but it is by no means a plant putting forth such gross roots as one might suppose. It is a bad practice to overpot Camellias, and that is why it appears strange such large plants occupy apparently small pots. It is quite true that small-sized plants are best potted every second year; but large plants in pots and tubs require attention of this kind once in five or six years, according to size, and some have been known to grow and produce fine blooms that were not repotted for a much longer period. One can reasonably suppose the constitution of the plant demands a comparatively low diet, for it is found by experience that if grown in too rich a soil the roots refuse to elongate or sub-divide themselves. On the contrary, if grown in a compost in good condition—that is, having proper drainage, a layer of some such thing as Moss of some kind to prevent the soil being carried with the water down into the potsherds used for drainage, and in tough fibry loam and peat in nearly equal parts, with a sprinkling of sand to render the whole fairly porous—both roots and branches, if the temperature be right, will be all one could wish for.

Spray of the single white Camellia. From a drawing by Agnes Cook.

It is only during the season of growth that a high temperature and plenty of moisture are necessary. During the season of rest the plants may be kept only two or three degrees above freezing-point, and they are better in such a temperature than in a house kept at a temperature exceeding 45 degs. They will even resist frost with impunity, and not be half so subject to bud-dropping as when kept in a high and dry heat. Numbers of plants growing in the open air in many parts of the country prove this. In the case of plants grown under glass, no temperature beyond 45 degs. is necessary until the plants have done blooming and the young growth commences. Then a gradual rise may take place, and a proportionate degree of moisture at the roots and in the atmosphere be maintained until the buds are swelling up to the size of small leaves. If this has been accomplished early in the season, so much the better will the buds be likely to remain on the plants and expand into bloom. When the plants have arrived at this stage, with their buds so far advanced, they may be placed either out-of-doors in a situation sheltered from sun and wind, or in a house without fire-heat and where plenty of air can be given. Some of the sorts will expand into bloom as early as November, and if the collection be well managed there should be no scarcity of flowers from that time on to the middle and end of April.

The three main elements of success in Camellia culture during the growing season are heat, shade, and moisture. Shading is very necessary, especially during the growing season; the young leaves are not only impatient of sun, but the old ones become scorched quicker almost than those of any other hard-wooded plant. Some have stated that Camellias need plenty of light; but there are, nevertheless, not a few instances of Camellias being most successfully grown in dark houses, such as some of the conservatories built a half-century ago, sombre-looking, lofty structures, with scarcely so much light at command as a picture-gallery. But overshading should be avoided.

Plants in or about to bloom should have a rather warmer atmosphere than those less forward. A little fire-heat every day, with the ventilators open at the top in favourable weather, and occasionally at bottom, is desirable. Such sorts as the old double white and all light varieties do best when a circulation of moisture and air takes place, as it is a good preventive to the iron-mould-like spots that often follow upon a close, moist atmosphere. The plants should never be allowed to become too dry at the roots, or else bud-dropping will sooner or later ensue, but it is quite as bad to have the roots saturated with moisture and equally destructive to the buds. A good medium is what should be aimed at. It is very bad practice indeed that causes the buds of sorts that have been early matured to fall off, but under the very best management during the flowering seasom the buds of those not put into heat soon enough or subjected to a uniform low temperature drop off. Liquid-manure or guano-water should be applied very sparingly, and never during the short days when the system of the plant is least excited. No fresh potted subject requires any artificial liquid, but such plants as have been growing for two or three years in the same pot, and the roots so compact that they could not be disturbed with the point of a stick, will be much benefited by a judicious application. There is now a large number of

Varieties of the Camellia, many of these very fine indeed, and it is not difficult to make a selection of some of the best. Of white varieties we have nothing better than the old double white, alba plena. The single white, of which we give an illustration, is very pleasing. Of blush varieties I can name Cup of Beauty and Romarensis, which sometimes has the slightest flakes of pink. Of pink varieties, Countess of Derby, soft pink, of excellent shape, and very pleasing; Mrs. C. A. Hovey, delicate blush-pink, small in size, but very pretty; Madame Ambrose Verschaffelt, delicate pink, with a distinct white margin to the petals; and Comtesse de Hainault, very delicate pink, shading to white on the petal edge. Of rose-coloured varieties, Il Commandatore Betti, pale bright rose, large and full; L'Avenir, pale rose-pink, much reflexed, very good; and Bella d'Ardiglioni, rose, with slight maroon shading, very fine. Of crimson and scarlet shades, Mathottiana, maroon-crimson, large and full; C. M. Hovey, bright crimson, of the finest shape; Marchioness of Exeter, rosy-scarlet, very fine petal and shape; and Archiduchesse Isabella de Toscana, deep red and rose, fine petal, and somewhat cupped; and of striped kinds, Archiduc Carl, deep reddish-rose, and flaked with white; Princess Clothilde, white, with rosy flakes; and Jenny Lind, white, striped with rose.

R.

SCENTED FLOWERS.

Those of us who are not sufficiently versed in the chemistry of plants to understand the different properties answerable for the production of perfume both in flower and foliage can yet admire the endless variety and wonder at the causes that give the different degrees of strength and the manner of dissemination. Where practicable, clumps of Nicotiana affinis and Heliotrope should always be introduced close to the house, and if there is no chance of planting out, a few pot plants of both, and indeed of anything else that emits an agreeable perfume, will be very acceptable. So far as the flower garden is concerned, provision should always be made for one or two beds of scented plants, and if care is taken in the planting the combination will be effective. Specimen plants of the Tobacco, of Aloysia, Eucalyptus citriodora, and Heliotrope will furnish the larger materials, and Pelargoniums in variety, Musk, and the gold and silver Thyme the carpet plants. Apropos of the Eucalyptus above mentioned, I noticed the other day, when pulling up one or two tiny seedlings not, in fact, more than an ½ inch in height, that the scent was quite as powerful as one gets from the foliage on old-established plants. In the case of Pelargoniums it is remarkable that this one family should provide us with such a variety of scents, peppermint, orange, lemon, almond, and something nearly akin to cinnamon all being included. The cultivation of these Pelargoniums has largely increased of late years. Many of the varieties with finely-cut foliage are very acceptable for the flower-basket. In the case of all scented Pelargoniums it is a good plan to put three or four cuttings into a 3-inch pot; they can be planted just as they are without any pulling to pieces, and will start straight away and furnish the beds quickly without any check. The variegation of Lady Plymouth will help with the glaucous foliage of the Eucalyptus to afford a pleasing contrast to the various shades of green, and a nice sprinkling of Heliotrope will help to give variety. Where the quarters occupied last year by Nicotiana affinis have been undisturbed the plants will in all probability come up thickly and strongly if the frost has not penetrated deeply enough to destroy the roots. If a supply of Stocks is at hand, or preparations have been made for securing the same, they can be presently used in connection with the scented foliage, the crimsons and purples with Lady Plymouth or variegated Prince of Orange, and the white flowers with the many different shades of green foliage both large and finely cut. If planted with the strongest of the Pelargoniums, care should be taken that the Stocks get sufficient room for the development of each plant. E.

Epiphyllums as cut flowers. — As cut flowers I find these very ornamental for the table in broad saucers filled with fresh, luxuriant wood-Moss, interspersed with a little Grassy foliage. However, they do not last long. Wet sand is better than water. I have often used the stalkless flowers of Balsams in the same way.—T.

USE OF FOLIAGE IN DINNER-TABLE DECORATIONS.

MANY beautiful arrangements of cut flowers may be embellished with appropriate foliage. In all cases where possible foliage of a hardy character should be used to associate with flowers similarly grown. And also, whenever possible, use in conjunction with the flowers of any given subject the plant's own foliage rather than adopt the practice of associating with them tender foliage, which also must in many instances be most inappropriate. No better illustration could well be given of the beauty of using foliage and flowers of the same subject than in the Daffodils. The leafage is peculiarly suitable to insert here and there among the flowers in vases, specimen glasses, and the hundred and one other receptacles which are now used. The yellow and orange tones of the flowers also form a charming contrast and specially effective under artificial light. The lovely whitish-green foliage of the Tulip is a most valued adjunct when arranging these welcome spring flowers. The foliage of the Rose cannot be equalled to associate with the flowers, no matter whether the blossoms be those of the Hybrid Perpetual or of the Tea-scented type. In the case of the Tea-scented Roses, the foliage is often of the richest description. Pansies, especially of the tufted forms, are pretty decorative flowers when foliage of their own is used with them, and a large number of delicate tints are seen amongst them.

There are also, however, many instances in which this cannot be done, so that the next best method must be adopted; therefore, during each successive season, select suitable foliage to harmonise with the flowers to be arranged. In doing this, bear in mind the most appropriate tints to consider. Foliage of a green colour will associate with almost every flower, though if too much be used the effect is deadened rather than enlivened. A few pieces of Maiden-hair Fern as an instance may make a charming finish, but if too liberally used the result is not pleasing. With white flowers green may always be associated, but for bringing out the full beauty of the flowers and their arrangement the rich contrast secured by the use of sprays of the Copper Beech, Mahonia Aquifolium, Prunus Pissardi, and any other foliage of a similar colour, is strikingly evident. Flowers of pink, rose, magenta, amaranth, purple, and mauve, and other intermediate shades are to be seen to advantage when pale green foliage is used, and more particularly that of a silvery kind. Sprays of the beautiful silvery variegated Maple, Panicum variegatum, Eulalia japonica variegata, the shield-like leaves of Caladium argyrites, and some of the best of the Arundos are a few of the choicest kinds of foliage for associating with flowers of the colours that have been mentioned.

With flowers of such warm tints as scarlet, crimson, orange, yellow, terra-cotta, buff, etc., many different kinds of foliage can be associated. Note should be made, too, of the richly-tanned sprigs of the Oak, Mahonia Aquifolium, Golden Privet, so valuable to relieve any apparent heaviness in a stand of flowers, and Ampelopsis Veitchi, so richly coloured in the autumn, for overhanging the sides of large receptacles, and in numberless other ways it may be utilised. Equally valuable also is the autumn-tinted Japanese Honeysuckle, more valued for use in epergnes and large vases. Some of the Brambles are also richly coloured in the autumn, and bright sprigs may be had for inserting among the flowers to give the necessary finish, and crimson-tinted and yellow-veined Croton foliage is invaluable at all seasons with flowers of rich and warm colours. The stove and greenhouse provide us with an immense wealth of greenery all the year round, such as the long, trailing fronds of the Asparagus plumosus and A. tenuissimus. The easily-grown Smilax is useful for trailing. Light green fronds of Adiantum cuneatum are always welcome. The list may be augmented at all seasons by a stroll through the country lanes, where an abundance of material may be met with on all hands.

An arrangement of white Poppies and Grasses.

ARRANGING THE FLOWERS.

An important point for all beginners to master is never to crowd the flowers in the different utensils which are being arranged. This advice may to some appear to be superfluous, but many beautiful combinations of colour are often spoilt by crowding the flowers in the vases. A large vase in the centre of the table would present a far better illustration of artistic skill if, say, half-a-dozen bold flowers were lightly arranged on long footstalks and a few pieces of Grasses, foliage, and other material standing out distinctly from each other, with a few pieces of trailing foliage overhanging the sides, than if the same vase had, perhaps, twice as many blossoms and an extra allowance of foliage, in which the beauty of each individual flower was not seen. A prettier arrangement may generally be obtained by using sufficient flowers and foliage for each to give an account of itself. Considerable assistance may be obtained by the use of nice green Moss, and as this may be purchased at a very cheap rate it should be in frequent request. Small flowers as well as large ones may be kept in any desired position by placing Moss in the opening of the vase. This prevents the flowers from falling on one side or the other of the utensils used. In large vases it sometimes becomes necessary to wire the flowers owing to the short length of the footstalks. When the flowers are wired the wires must not be seen. Small Hazel twigs are invaluable for heavy flowers such as Chrysanthemums, Lilies, Oriental Poppies, and others, as by their use they may easily be arranged in position. Hand-baskets, bowls, and other unique devices may be filled with moist Moss, which should be fresh and green, and if the flowers be wired singly they may be stuck into this material, and completed in a short time. Sand is often used for these last two receptacles, and this is covered with Moss. The flowers are easily fixed in this, and keep fresh for a long time. In the case of hand-baskets for travelling such arrangements would be at a considerable discount. Put two or three small flowers, with a small piece of foliage to stand between them, in the little tubes and specimen glasses which are usually arranged along the side of the more conspicuous ones on the table, or dotted about to suit the caprice or whim of the decorator. A frond to overhang the mouthpiece will make a nice finish.

Our illustration shows the beauty of white Poppies arranged with Grasses.

D. B. CRANE.

GARDENING NOTES.

CALLA ÆTHIOPICA still continues bearing many fine spathes, the plants flowering from October to present date. The little C. maculata is expanding its attractive foliage. C. Rehmanni is throwing up vigorous shoots. This plant requires as much hot sunshine as it can get to attain the proper rose colour. It is a native of the Transvaal.

MACKAYA BELLA, that charming little shrub from Natal, has reached a height of over 5 feet and 4 feet broad. Nearly every terminal shoot has a promising spray of buds, which will expand soon. I received it from a friend as a little rooted cutting about eighteen months ago. Pieces of leafy young wood strike readily, and grow quickly in soil composed of leaf-mould and sand; temperature 50 degs. to 60 degs. It is in a 10-inch pot, and the surface packed with thick wood-Moss. I keep the roots slightly damped in winter, but now it is watered daily, and stands on a sunny stage of the house. In the warm months I remove it outside against a south wall.

CRINUM MOOREI is still in great beauty, its tall, thick stems crowned with immense flowers of blush-white. I wintered C. Powelli in a cold-frame, and it has produced many vigorous offsets. C. capense (longifolium) was planted in the open border under a south-west wall, and is now making its first growth.

WATSONIAS, which refused to flower under glass, were put in the open border last autumn, and are now making new foliage after our severe winter. It had no other protection than a small heap of coal-ashes, which I find generally useful as a plant protector. Two tubs of Agapanthus, put in the frame in late autumn, are making strong growth.

THE NEW ZEALAND FORGET-ME-NOT (Myosotidium nobile) was put in the frame at the same period, and has not one decayed leaf. When frosts cease the pot will be placed under a half-shaded south wall and syringed often. The

GREENHOUSE is now very bright with the gorgeous blooms of Hippeastrums in various colours. One bulb has two thick stalks, carrying some ten immense flowers of a vivid scarlet, with white stripe. Niphetos and other pot-Roses have abundant buds, some expanding; a Maréchal Niel is crowded with mature buds. Frequent syringing is my rule, and I poison all green-fly with a feather dipped in an insecticide compound of my own concoction.

EPIPHYLLUMS put near the glass are now crowded with plump buds. The climbing Tropæolums are fast festooning the twine leaders on the rafters with fiery colours. The Epiphyllums have been watered once weekly for a month past. Abundant bloom is on the large Heliotrope in the house border. Grand clumps, now at their best on the stages, consist of Primulas obconica, Forbesi, and floribunda, just removed from the hot sunshine (which spoils their colour) to the half shade shelter of leafy plants. Seed seekers must now be vigilant. Watch the tiny capsules before they split in mid June. They can all be carefully shifted to form clumps in the spaces between herbaceous plants in a rich border.

They will need daily watering in dry weather. Mine of last season lasted well until the frosts, which are fatal to this class. Seedlings in pans must now be kept cool and shaded for next winter's display, but not put outside. Hoya bella has been making long shoots for many months, and is crowded with heavy foliage. Sixty degrees temperature seems to suit it well. Constant syringing with tepid water in warm weather appears to its liking (being a native of rainy Burmah), like all the family. I saw fifteen species collected in the virgin forests of Lower Assam, noted for its heavy rainfall and humid atmosphere, a perpetual drip in even the fine season falling from the trees, caused by mists.

Anomatheca cruenta.—I have seen the dry bed of a mountain torrent in South Africa red with these miniature Gladioli. They are quite hardy in the milder parts of England. A sandy soil well mixed with decayed vegetable matter should be used. Lately the foreign growers advertise a new variety double the size of the above under the name of "A. grandiflora," but it is very dear at present.

Globe Artichokes.—In North India I raised a quantity of plants from American seed and grew them on in a box until large enough to plant out; then I prepared deep beds of elephant's-dung and cow-manure, the first named product having a curious resemblance to fibrous peat, as it consists chiefly of semi-digested bark and branches of the trees used as fodder. I always propagated my stock from offsets, and in two or three seasons succeeded in obtaining enormous heads, substantial and thick-fleshed, large enough to cover a cheese-plate. When they had grown to half their proper size I drove a wooden peg through the stem close to the head, and I always disbudded at an early stage, irrigating frequently.

Cannas. — Having noticed the luxuriant growth of the common C. indica (*alias* Indian Shot) throughout South Africa, I wrote to my friend the Curator, Botanical Gardens, at Durban, Port Natal, recommending a trial of the many choice European varieties, and he has now a great show of sixty kinds, having obtained the tubers from Italy about two years ago. In India I planted my collection in a deep trench, daily replenished from the cattle-shed, and about twice a week filled to the brim from a water-course. Those plants attained 7 feet or 8 feet in height and were well-flowered. They dislike drought, and are strong feeders.

Winter Gladiolus (Schizostylis coccinea) has proved quite hardy in the most severe winters of the North of England, but its flowers are very susceptible of heat and cold alike. The early frosts usually stop its blooming. Only once have I seen it all right in November. My plan, therefore, is to pot a clump when making a well-budded spike, remove to a cold-frame, and place it in a house without fire-heat, near the glass. Replace in a sheltered border when it has ceased flowering. It propagates itself largely by underground runners. Soil: leaf-mould and sand or light loam. W. H. L.

Cumberland.

Narcissus Stella in Ireland.—I enclose a photograph taken in my drawing-room of Stella Daffodil. The Daffodils, though originally garden bulbs, have been allowed to go wild for 10 years, and they make a very fair display, and are also useful for the house.—Alice C. Lewin, *Castlegrove, Tuam, Co. Galway.*

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THE KITCHEN GARDEN.

CARDOONS.

I am pleased to see little known vegetables referred to in Gardening, and advice given to amateurs as to their culture. By the introduction of less known varieties there is greater choice.

Culture.

As regards the culture of Cardoons, more space will be occupied than in describing mere varieties; the latter are few. The illustration shows how well this plant can be grown, and, I may add, at no greater cost either of labour or seed than Celery. The stalk portion is edible. On the other hand, it is not so hardy as Celery, and though it may be kept good in a root store for months, it is soon injured by frost if well blanched, and unless so it is useless. This vegetable is much liked on the Continent, and it makes a very good early winter vegetable in this country. Our variable winters, however, play havoc with plants not fully grown. Anyone who knows the Globe Artichoke will see at a glance that the Cardoon is allied to it, the only difference being that one is cultivated for its flower-heads and the Cardoon for its leaf-stalk. Flower-heads spoil the latter, so that the cultivator must use every endeavour to prevent them, and get a long leaf-stalk. To do this the plant must get liberal culture. As regards

Varieties,

the Spanish Cardoon is the kind usually cultivated in this country. This is known by its smooth leaves. It is not the best in every way, although one of the largest. Its tendency to form flower-heads is so great that unless given the very best culture a loss is felt when the plants flower, as they then cease to make leaves. A variety called the Large Solid, a selection probably from the Continental varieties, appears the best, and though not so large as some, the leaf-stalk is more solid, hence its name. The Tours Cardoon is much liked and cultivated in France. I do not like it or advise its culture, as the leaves have very sharp spines. There are others with foreign names—a variety which has white foliage is good, and a dwarf kind—but as they are not grown in this country for sale it is not worth while to describe them.

Their culture is best when the plants can be raised under glass at any time during April. I usually sow three seeds in small pots in frames, and when a few inches above the soil thin to the strongest and grow on for a few weeks, hardening as the plants attain size, and planting out at the middle or end of May. All may not have glass to raise their plants, and must sow in the open ground. Here the culture is different, as the trenches for the plants must be prepared in advance of sowing the seed. As the plants have only a short time to make their growth, it is well to do this early in April and sow early in May. By doing the work in advance of seed-sowing, the ground is in better condition to receive the seeds. If large specimens are desired at least 6 feet should be allowed between the rows. This allows of ample soil to earth up the plants, which should have at least 2 feet between them, and to get the proper distance drop a few seeds at the distance named—say, three to five in a group. When above the soil thin to the strongest.

We now come to an important detail—the preparation of the trenches for the plants. These are best made after the manner of Celery trenches, with a good amount of decayed animal manure dug in. As the Cardoon is a gross feeder, at least 6 inches of manure are necessary in poor soil. In clayey, stiff soil give the plants or seeds some finer material to root into.

The Cardoon. From a photograph sent by Mr. Tallack, Liveremere Park Gardens, Bury St. Edmunds.

Old soil from a Cucumber-bed is excellent. So much depends upon the after culture of the plant that I may say it is useless for amateurs to grow Cardoons who leave them to take care of themselves. Few plants need so much moisture during growth, and to get perfectly blanched stalks give attention to moulding at the right moment. During the summer copious supplies of water are needed, as drought or a check of any kind causes the plants to form seed or flower, and leaf-growth ceases. Liquid-manure may be given in abundance—indeed, if the trenches are flooded once a week so much the better. Supplies of fish-manure or guano are well repaid during growth. In September or October the plants will be ready to blanch, and the best method is to twist hay-bands round the stalks to within a foot of the top and then thoroughly bank up, covering the hay-bands with soil, and beating it quite hard with the back of the spade to exclude air. The growth will be blanched ready for use in six weeks, and may be cooked as a vegetable or used in stews. They keep for some time if lifted with the bands round them and stored in a cool shed on approach of frost. If left in the open more soil or other shelter must be given. Dry Bracken is good, failing this, short litter, but in the case of fully-grown plants it is best to house to prevent decay. G. Wythes.

INDOOR PLANTS.

CHOICE BLUE FLOWERS.

PLUMBAGO CAPENSIS.

THIS, known also as the Cape Leadwort, is a most useful, free-growing, and easily-managed hard-wooded greenhouse plant. It is, however, now seldom seen. This is a great pity, for it will succeed equally well in a large pot as a trained specimen to twine round a pillar, planted out to clothe a wall, or to hang loosely from the roof of a cool conservatory, or confined to the limits of a 6-inch pot, in which way it will flower freely, thus forming one of the best possible window plants. To this size it may be restricted for years, occupying a very limited space in winter, and amply repaying the little attention it requires by flowering for weeks in succession. The flowers are produced from the extremities of the young shoots, and are borne in large bunches. Individually, the blossoms are like a small Phlox in form, but of the most lovely pale blue colour. There are few plants grown that offer such a pleasing contrast in both colour and form of flower to the generality of other greenhouse plants as does this Plumbago. There is no way that it can be grown in which it is more useful than in small pots for general purposes, as if a number of plants be at hand a portion of these, if desired, can be brought into flower in a little heat earlier, to precede such as are allowed to come on gradually in the greenhouse. By this means a succession of blossoms may be kept up for three months in summer and autumn. Being a strong-rooted plant it will succeed well in loam, as, in common with most things that will thrive in this description of soil, it has in it a greater disposition to flower than if it be planted in peat; but the loam should be good in quality, and contain plenty of vegetable-fibre, and have added thereto one-sixth part of sharp silver-sand. The pots should be well drained. Pot them moderately firm, and if the shoots are at all straggling shorten them back to about 8 inches or 10 inches in length, tying them well down so as to induce them to break back, in which way they will push almost every eye. Place them in a house or pit, where they can be kept in a temperature of about 45 degs. in the night, with a proportionate increase in the day with sunheat. Close the house early enough in the afternoon, while the sun is up, so as to raise the temperature, syringe them overhead at the same time, and as the season advances and the weather gets hot give a little shade, and use sufficient water under the stages and about the paths to keep the atmosphere in a moist condition, and so promote a free growth. All that will be required through the spring and early summer will be to pinch back any shoots that may show a disposition to outgrow the others, and tie to the sticks so as to keep them in shape. About August they will commence to bloom, and as soon as the flowers begin to open cease syringing the plants overhead. They may then be moved to the conservatory or any other place where flowering plants are required, where they will receive a moderate amount of light and air to ripen up the growth, no more of which for the season should be encouraged.

When the blooming is over give less water, and place the plants for the winter in an ordinary greenhouse temperature of about 40 degs. at night. They may then be cut back at once, or this can be deferred until nearer spring. The shoots of such plants as are intended to be grown on in the small pots should be cut to within a few eyes of where they were shortened to the spring previous. Again, about the end of March, before they begin to grow, turn them out of the pots, shake about three-fourths of the old soil from the roots, and then replace them in the same pots with fresh soil, and in every way treat as in the preceding summer; so managed annually they will last for years, flowering freely. They may, during the season of active growth, have manure-water given them once or twice a week, which will enable them to make stronger shoots and produce finer heads of flowers. Such as are intended for larger specimens should not be cut in nearly so close. The shoots may be shortened to within about 12 inches of where they were cut back to in the spring previous. If the plants have made satisfactory progress they will bear a 4-inch or 6-inch shift. Remove a portion of the old soil, and now use the new potting material in a more lumpy state than in the first potting. The after treatment through the spring and summer in other respects should be the same as the season previous. Attend to training the shoots as they progress. As the plants get strong they will make comparatively lengthened growths that will require the use of a wire-trellis, or a number of moderately strong sticks, round which to train the shoots. Do not tie in the points too closely, or they will have an objectionably formal appearance. After flowering they will again need cutting-back. Winter them as before and repot in the spring. They may be confined to the same sized pots, shaking away a portion of the exhausted soil and replacing it with new, or, if they are required to be grown into large specimens, they can have more root-room given them. So managed they will last for a number of years, and will be much assisted by the use of manure-water during the growing season. This Plumbago is an excellent plant for training to a conservatory pillar, where, if allowed to hang somewhat loosely, it has a fine appearance. In such a position it may either be kept in a moderately large pit, and the soil therein partially renewed every spring, or it can be planted out. When it is wanted to cover a back greenhouse wall or a considerable length of rafter, the most satisfactory plan will be to plant it out in a prepared border. This must have the usual sufficient drainage, and should be composed of 8 inches or 10 inches of good turfy loam, with enough coarse silver-sand to keep it open. In planting, see that the roots are not allowed to remain in the curled state which the pot has necessarily kept them in. When any plant of this description is turned out in an open border, and the roots are allowed to stay in such a curled-up position, they do not usually make satisfactory progress. Restrict the quantity of water to the roots until the plants have commenced growing freely, after which they will need a good supply of moisture both at the roots and overhead by the syringe. Attend regularly to stopping and training, especially in the first stages of growth, so as to furnish the plants regularly, cutting back every winter to induce the production of young flowering shoots over the whole space the plants are wanted to cover. When the soil becomes exhausted remove a few inches of the surface each spring and replace it with new, and still further encourage growth by the use of weak liquid-manure water. The plant is easily propagated by cuttings taken off in spring when 4 inches or 5 inches long. Put them singly into small pots of sandy soil and place under a handglass in a warm place, keep moist, and shade from sunshine. They will then soon root, and can have more air then and be potted on as required. Keep the plants well syringed to cleanse them from insects. B.

PLANTS FOR WARM AND COLD GREENHOUSE.

WE are often asked for selections of plants for various purposes and positions that the following lists may be of service to readers. It will, of course, be understood that this could be greatly augmented by other subjects equally, or almost equally, as suitable for each particular purpose; but we venture to think the present list will be ample for the beginner. In most cases of flowers and variegated-foliaged plants we have given the leading or predominating colours.

PLANTS FOR WARM GREENHOUSE, temperature 55 degs. to 65 degs. Foliage plants: Ficus elastica (India-rubber-plant), Pandanus Veitchi, Adiantum cuneatum (Maiden-hair Fern), Rex Begonias, Dracæna terminalis, Cyperus alternifolius (Umbrella-plant), Pteris tremula, Pteris serrulata and its varieties (the Ribbon Ferns), Abutilon vexillarium, and Asparagus plumosus and nanus.

CLIMBERS.—Lapagerias rosea and alba, red and white; Acacia Riceana, yellow; Clematis indivisa lobata, white; Cobæa scandens; Climbing Roses, such as Maréchal Niel, Climbing Perle des Jardins, Climbing Niphetos, and William Allen Richardson; Bougainvillea speciosa, mauve; Plumbago capensis, pale blue; Clianthus puniceus magnificus, bright scarlet; Tacsonia Van Volxemi and Habrothamnus aurantiacus, yellow. Flowering plants: Some of the best flowering plants are Tuberous Begonias of various colours, also B. Weltoni ensis, pink; and B. Carrieri, white; Genista or Cytisus fragrans, yellow; Acacia armata, A. Drummondi, and A. lophantha, yellow; Indian Azaleas, various colours; Bouvardias, white, red, and pink; Chrysanthemums, Lilies, Abutilons, show and fancy Pelargoniums, Cacti, Arum or Calla Lilies, Spiræas, Deutzias, Ericas, Epacris, Fuchsias, Cinerarias, Primulas, Pot-Roses, Vallota purpurea, Amaryllis; and such bulbs as Tulips, Hyacinths, Freesias, Lachenalias, etc. It will be obvious that we cannot well spare space to give the seasons each of these would be in full beauty. In the

COOL OR UNHEATED HOUSE one can select from the following, among others—Climbers: The common blue Passion-flower, also the white form known as Constance Elliot; Maréchal Niel and other climbing Roses; Plumbago capensis and Clematis indivisa. Foliage plants: Yucca aloifolia variegata, Chamærops excelsa, Aralia Sieboldi, Dracæna indivisa, the variegated New Zealand Flax, and Agave variegata; as well as the more tender of our variegated shrubs. Flowering plants: Primula japonica, Spiræa japonica, white; Primula obconica, pale lilac; Chrysanthemums, Christmas Roses, white; Agapanthus umbellatus, pale blue; Lilium auratum, Fuchsias, alpine Auriculas, Deutzia gracilis, and Dielytra spectabilis.

Sickly Asparagus.—For some reason or another we do not succeed in growing Asparagus here. We make one or two new beds each year, but the old beds die faster than the new ones can replace them. We have tried lightening the soil with sand, and also sowing salt. I send you a sample of some of the plants we took up this week; you will see that the roots have quite died away. Is it advisable to lay a covering of manure or leaf-mould over the Asparagus-beds during the winter, to be removed in the spring, and if so what thickness should this covering be?—D. R.

*** From your note we presume your land is heavy, probably wet also, as from examination of root sent the crown growth decayed before root action ceased. Length of roots also denotes fair rooting, and we come to the conclusion that it is decay during winter of the tender crown growth. Unfortunately, you give us little information as to your soil or culture other than you use sand to lighten what we should say is heavy soil. Your last portion of the note as to covering is the reason of your failure. Asparagus, and especially in heavy land, should never be covered in winter—indeed, we do not see why beds in any kind of soil should, as the plant is quite hardy. Covering tends to decay, as when manures are used as a covering the plants are kept wet, and the plants, having no top growth, cannot absorb food from October to May. Our advice is to feed in the growing season; not cover when the earth is cold and wet and thus make it colder. Salt is a great evil in heavy soil. We never advise its use. You added to the evil by using salt. You need not despair of growing good Asparagus. We have grown it in worse soil. Make raised beds—say, 12 inches above level. Use for the top portion of bed such aids as plenty of old mortar-rubble, burnt refuse of any kind, wood-ashes. Use sand or road-scrapings freely, and do not use salt or cover, but feed in summer with fish-manure, or guano, or liquid, and you will have few losses.

Plum Belle de Louvain.—This grows to a large size, and is one of the best cooking Plums grown. The fruits are oval in shape, dark purple in colour, with a firm yellowish flesh, which is juicy and of good flavour. The tree makes a fine bush, but, like many other Plums, must be lifted to induce early fertility. The tree is a most abundant bearer, and the fruit ripens towards the latter end of August.

Epigæa repens has flowered wonderfully well and long this spring, and now the new growths—red, fleshy, and pubescent—constitute another pretty feature by contrast with the old and somewhat hispid leaves. There can be no doubt that in our variable winters this creeping shrub responds to the kinder conditions of a cold-frame, though I have had for many years a big plant in the open. Besides, the flowers are so early and so soon soiled that it is a waste of labour to grow it otherwise than in some sort of shelter.—J.

FRUIT.

CORDON APPLE-TREES.

The cordon is an excellent form of tree for amateurs to grow. Cordon-trained Apples and Pears, if given a good open position and due attention be paid to their wants, are ornamental, and if the soil is studied and varieties planted which produce freely in a dwarf state, profitable. Horizontal cordons give a finished appearance to the fruit quarters, and as regards crop, it will be seen from the accompanying illustration the trees fruit freely and are most ornamental. I am inclined to attribute most of the success as regards fruiting to the stocks the trees are grafted on and the treatment in the way of pruning and regulating of growth during the first few years (say three) after planting, as after the foundation of the tree is laid the culture is simple and good crops follow. A few years ago I planted a great number of varieties to test fruiting qualities. Many I found not suitable. I do not altogether condemn them, as soil in a great measure influences the growth. Varieties which do well in certain soils may fail in others. Those who grow fruit for profit will find it advantageous to plant any kind sparingly till they see how it thrives. Trees trained upright on walls or fences have a better chance to ripen their wood. I have replanted as upright cordons trees which had failed to crop when trained horizontally near the soil, and in a better position they bore freely with more light and free growth. I have no knowledge of the variety illustrated. It evidently is a grand cropper and has been well trained. It appears to be a medium grower. This is important with trees trained in this way, as my experience with over 100 varieties is that the strong growers of the Blenheim Orange type are not suitable for cordons, as they do not fruit so freely in a young state as many others. It is surprising how grandly such kinds as Lane's Prince Albert and those which bear freely on the points of the shoots fruit when restricted to a single cordon growth. I prefer

Cordon Apple-trees in fruit.

The single cordon to the double, as the single growth may be allowed to extend. It is well to cover the allotted space in a few years (three to five), in after years relying upon feeding and root-pruning to maintain a healthy growth. I plant at 9 feet apart and the branches are 15 inches from the soil. In my case it was necessary to keep the branches low, but in gardens where the situation is low and damp I would prefer 18 inches or even 2 feet. If strong maidens are selected, they are more readily trained than older trees. In upright training less attention need be paid to this matter; indeed, for Pears I prefer trees that have been grown for two years and stopped or pinched to produce fruit spurs. As previously stated, the best results are obtained from the dwarf stock. To prevent gross growth, I find lifting every three or four years early in the autumn necessary. Many growers of cordons have become dissatisfied with these trees owing to some producing a poor crop. I have seen trees after a few years' training allowed to grow wild and then produce freely.

I grow both kitchen and dessert Apples in the cordon form, as the trees give such fine fruits. No matter what kind is grown, every attention must be given to the summer pinching of the shoots and thinning of crowded spurs in winter, mulching in May and October. To prevent borders getting too high, it is an easy matter to rake away the old soil before applying the new mulch, during the summer giving moisture freely, liquid-manure being most beneficial. For kitchen use, such

Varieties as Warner's King, Bismarck, Ecklinville, Frogmore Prolific, Lord Grosvenor, Golden Noble, Sandringham, Lane's Prince Albert, New Hawthornden, Waltham Abbey, Beauty of Kent, Cellini, Gloria Mundi, Mère de Ménage, Alfriston, Golden Spire, and Lord Suffield give very fine crops and large fruits. This is a light soil on gravel. On heavy, clay soil I would omit a few of the above. For dessert there is even a wider selection. The most prolific variety is Baumann's Red Winter Reinette. I have never known this variety fail, and the fruits are of excellent quality. Cox's Pomona is likewise excellent for the purpose named, and rarely fails to give a heavy crop. Emperor Alexander is also very fine grown thus and of superior flavour. The Melon Apple, an American variety, is most prolific and of good quality, but requires a warm soil. On a clayey soil I do not advise its culture. With me the handsome Peasgood's Nonsuch is not a free cropper. Sandringham is excellent, and Wealthy, an American variety, very free. To the above I must add the Queen. Most of the Russets are fair croppers. Lady Sudeley is a regular cropper. King of Pippins, Cox's Orange Pippin, and Sturmer are all noted for crop and quality. Beauty of Kent, Ribston Pippin, Reinette du Canada, Braddick's Nonpareil, Margil, Lady Henniker, Duchess of Gloucester, and several of the Calville section also do well as cordons.

G. W.

Strawberry soil.—I have seen this favourite fruit bearing abundantly on land totally different in character. In the red ferruginous loam of Central India the crop was very abundant, though the berries were medium-sized yet full flavoured. In a very hot part of Upper Bengal a persevering horticulturist raised plants of the best kinds from seeds collected by friends in England. He was noted for his large cultivation and remunerative results. He obtained several cartloads of burnt residue from the brick kilns (containing a large percentage of potash); this he used as a top-dressing with great success. He not only obtained manurial benefit for his plants, but repelled noxious insects, of which the white ant is chief. His crop was celebrated for quantity and quality. Being in that part of India some years subsequently, I recommended the above material to a public garden where they could not get Strawberries to bear; it was accordingly tried and found a good addition. I saw a fine crop growing on an artificial slope above a tank, from which water was raised by a machine into a channel above, whence the irrigation streamed over the beds in dry weather. Here I have used a garden-engine, sprinkling the surface during a drought. On the grassy slopes of mountain valleys in Kashmir the "Alpine Strawberry," with unusually large, high-flavoured fruit, can be got in any quantity. I used to pay the cowherds to bring a supply daily to my camp.—W. H. L.

GARDEN WORK.*

Conservatory.

Climbers are now growing freely, and Tecomas and other strong-growing things should be well thinned and regulated before the young shoots get entangled together. Acacias and other strong-growing things planted out in borders should be pruned into shape. When Japanese and Ghent Azaleas go out of bloom clear off faded blossoms and move to another house to complete and partially ripen growth before plunging outside. The same remark applies to all forced plants if they are to be of any further use for forcing. Double Primulas have now pretty well done flowering for the season, and should be mulched with Cocoa-nut-fibre to induce the formation of roots round the collar for the purpose of increasing stock, or the plants may be cut up and cuttings inserted singly in small pots in sandy peat, and plunged in hot-bed for a time; but the former method is best and yields more and better plants. Good habited Fuchsias are suitable for baskets for summer work; the flowers show to better advantage when suspended above the line of sight. The early-flowering Cyclamens should now be gradually dried off on a shelf in a cool-house. The same treatment will suit Freesias. A group of Amaryllis mixed with Ferns will now have a brilliant effect. Vallota purpurea may now be repotted, if necessary; but if the plants are in good condition repotting may not be necessary, as, like the Eucharis Lily, they resent much disturbance of the roots. Years ago we used this Amaryllis in the stove, but they do better with cooler treatment. I have seen good specimens grown in cottage windows, and our plants are all turned into cold-frames in the full sunshine to ripen growth—very often with the lights off. Lilium longiflorum will now make charming groups mixed with Ferns or foliage plants. This bulb seems to have a better constitution than its variety Harrisi. Strong bulbs will produce three spikes of bloom in 5-inch and 6-inch pots. Hydrangeas japonica and Dr. Hogg are very showy now and are among the easiest things to grow. Pot in good loam and old manure, and prune into shape after flowering. A blue tinge may be given to the blossoms by mixing a small quantity of iron filings with the soil. Cuttings of the ends of the young shoots will strike in sandy soil in a little bottom-heat, and each little plant will carry one large head of bloom next spring in a 5-inch pot. Tea and other Roses are now very beautiful under glass; the blossoms come so clean and fresh. Roses in a cut state require only their own foliage when arranged in the vase, and should not be crowded. Palms, Dracænas, and other foliage plants should be repotted now, if required. Any plant which may have been overwatered during winter should have the old washed-out soil removed from the roots, and repotted in sweet, fresh, turfy compost.

Stove.

This house will be very interesting now with so many plants making fresh young growth. Rhynchospermum jasminoides is a sweet thing just now in a cool stove; may be grown in a cool-house, but it looks so much fresher and nicer where warmth is given. There will also be plenty of colour where Crotons and Dracænas are grown. Young shoots of Crotons will strike now in a brisk bottom-heat in peat and sand. Old plants of Dracænas should be cut up for increase of stock. Every joint of an old well-ripened stem will make a plant in due time, as there are dormant buds in each joint which only require a close, brisk bottom-heat to start into growth. Divide the variegated form of Cyperus alternifolius. This makes a charming table plant when well grown; but, like that other nice little decorative plant, Caladium argyrites, no one seems to have enough of it. Sow seeds of Asparagus plumosus, and work up stock by other means. If possible, a few plants should be planted out in a warm-house to supply trailing shoots for cutting. There is also a demand for cut Smilax, which ought to be met. This is a tuberous-rooted plant and is easily raised from seeds sown in heat now. May be grown in a warm greenhouse; but to obtain long sprays quickly for cutting give it heat. See that nothing wants for water, but be careful with newly-potted plants, as if the soil gets soured at the start the plants cannot thrive. A thin shade will be necessary probably on bright days, but do not use it till the plants appear distressed with the sunshine. Ferns will want a little shade, but Crotons and Dracænas will not lay on colour in the shade.

Vinery.

It is a misfortune if the vineries have now to be full of plants. Not only does their presence tend to make the atmosphere stuffy, but there is often a difficulty in moving about the house and giving the necessary attention to the lateral growth, and where this is allowed to extend some

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** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

check may be given in its removal, and, besides, when the main leaves are crowded with laterals they cannot get that leathery texture which a free circulation gives. Every effort should therefore be made to clear out most of the plants now. Bedding plants may go outside into temporary shelters. This will give an opportunity to get at the borders, and water and top-dress when necessary. Thinning the berries should not be delayed when large enough to show which berries are taking the lead. Be cautious in giving front air. Cold draughts are one of the causes of the presence of rust and mildew. If there is the least fear of mildew rub a little sulphur on the pipes, if the pipes are not likely to get hot enough to fume the sulphur; but this very rarely happens. Keep fire-heat in late houses till the summer is fairly established, which is seldom before July is well in.

Melons

will stand a good chance in frames now if the beds have been well put together. Years ago every man employed in a garden understood the way to make a hot-bed that would produce a steady, lasting heat; but the case is different now, as in many gardens hot water has taken the place of the warm mixture of manure and leaves. Melons must have bottom-heat, and a bed to last should be made of well-fermented materials, and be of substantial size in proportion to the frame.

Tomatoes Under Glass.

Avoid everything in the nature of stuffiness, and keep up the circulation in dull weather by the use of moderate fire-heat. Plants swelling a crop should be mulched and receive liquid-manure. All side growths should be removed when small. Tomatoes do not require very rich soil at the beginning; gross plants do not set their fruit well. A sound loam, fairly firm, will always give good results. It is not wise to plant Tomatoes more than three years in the same soil.

Window Gardening.

It is interesting to watch the growth of young plants, hence those who raise seedlings and strike cuttings at home get more enjoyment out of their flowers than those who buy their plants in blossom, and the results are more lasting. A plant raised in a warm-house, forced with stimulants, soon fades when it changes hands.

Outdoor Garden.

Narcissi, Tulips, and Hyacinths have made a brave show. During the last few years most people have planted them in greater numbers, especially in the out-of-the-way places where they can remain from year to year undisturbed. The common single and double Daffodils are specially suited for planting under fruit-trees in the orchard or along the hedge side. Snowdrops may be treated in the same way. Tulips may be planted in good-sized patches in the shrubbery. I like to see them in separate colours, so that each variety may form a good patch of colour. Wireworms are very fond of Tulips, but do not care so much for Daffodils or Hyacinths. I was in a garden a few days ago where nearly every Tulip in several beds had been destroyed by wireworms, whilst Daffodils and Hyacinths in the same garden had escaped. The insects had bored into the bulbs and induced decay. I was asked the other day how late in the season Roses might be planted. Roses may be planted out of pots any time, and where the plants are propagated at home under glass the spring-rooted cuttings or root-grafted plants may be turned out of the pots into well-prepared beds in June, and a useful autumn bloom obtained. Where Roses are forced early the young wood, taken off with or without a heel, will strike in the hot-bed, and will make flowering plants the same season. Thin early-sown annuals. Use the hoe often among growing plants. Put sticks to Sweet Peas. Trap wireworms in Carnation-beds.

Fruit Garden.

Look well after insects on fruit-trees, especially Peaches. Tobacco-powder is the best remedy, and the cheapest and easiest applied. Remove coverings from wall-trees every fine day, and replace at night if heavy curtains are used. Of course, fishing-nets obstruct light and air so much, and need not be taken off till removed altogether, and it is wonderful how much even a single thickness of netting shelters the blossoms. For many years I have used nothing else for wall-trees, but it is hardly safe to take them away altogether till the third week in May, especially in cold districts. The bottom of the nets should be stretched far enough from the wall to permit of persons walking by the side of the trees under the netting to do the disbudding, and use Tobacco-powder when necessary; and at the beginning of the season there will probably be a few green or black-fly on the young growth, and if not destroyed the leaves will curl up and the insects more difficult to reach with the powder. Sir Charles Napier, when well done, is a fine Strawberry for late work under glass, but it is best confined to one good strong crown. Forced Strawberry-plants may be planted out for an autumn crop. Vicomtesse de Thury is a good variety for this purpose. If the plants are turned out of pots tread the soil firmly around them and mulch with good manure. Young Vines raised from eyes this season may be planted in new houses in good borders inside. Should have regular, steady warmth for some time, till end of June, at any rate. Moderate-sized wood that will ripen well is better than that which is overfed and gross.

Vegetable Garden.

Plant Scarlet Runners and French Beans freely now. Some of the climbing French Beans will be found useful. The tender herbs, Basil, Summer Savory, and Sweet Marjoram, may be sown outside in a warm spot. These are frequently raised under glass in heat and planted out towards the end of the month or early in June. It is important to get such things early. Plenty of Chervil, Tarragon, etc., is always a necessity. Brussels Sprouts, Broccoli, and other Winter Greens may be pinched out from seed-bed to get strong. They are often planted out straight from seed-bed, but very often where the ground is close cropped the land may not all be ready, and then the plants starve; besides, it is better not to set out all the plants at once. Pot on Capsicums to get strong. These are sometimes grown in spare frames, but if strong plants are set out in June on a warm site they will do very well. Set out any Cabbage, including a few of the Red Dutch, which may be left in the seed-beds; they will come in useful. Young Cabbages turning in will heart sooner if a strand of matting is tied round the leaves. Tie up Lettuces when large enough. Plant out Cauliflowers raised under glass. See that a good stock of Vegetable Marrow plants are raised. Sow Cardoons in trenches, prepared in the same way as for Celery, only a little further apart. The seeds may be planted in patches about 15 inches apart, three or four seeds in a patch. If all the seeds grow, reduce to one when the strongest can be seen. Celery may be sown in a prepared bed thinly for late planting. These plants will not run so soon in spring. Plant out Leeks raised under glass. It is a good plan to keep a few young Cucumber-plants in stock now.

E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from May 1st to May 8th.

Prepared trenches for early Celery. We like to get these ready as soon as land is vacant, and plant the ridges with Lettuces, etc. Planted a cool-house with Tomatoes. Bedding plants are for the most part now hardening off in cold-frames and various other temporary structures. The beds devoted to spring-flowering plants are too bright to be disturbed yet. It is generally a week or two into June before the beds can be cleared, but there is not much lost by this, as the "Geraniums" and other plants for these beds are grown on in larger pots, and will be more or less in flower when planted out. We have a heap of charred vegetable refuse waiting to be worked into the beds when cleared. The plants grow very fast in it, and flower profusely. Something of this kind is required, especially on heavy land when broken up late. Planted Scarlet Runners. Planted a bed of Princess May Violet. This is a strong grower, and bears large flowers and long stalks. Our stock has been grown under glass for winter flowering. Shall try it outside this season. It seems to have Russian blood in it. Shifted on young Begonias and Gloxinias. What beautiful things Amaryllises are! We have just invested in a few fresh varieties, and hope hereafter to raise a few seedlings and work up stock. Everybody with a warm greenhouse should grow them. They are not much trouble, as they rest all winter and want scarcely any water till the flower-spikes appear. They are really gorgeous things, and such handsome collections as I have seen lately makes one feel covetous. Planted Green Windsor Beans and Marrow Peas. The hoe is very often at work now among growing crops in the kitchen garden. Peas are staked as soon as fairly up, before tendrils form. We grow Winter Spinach largely, and at this season cut it down with a knife and pick the leaves off after. It checks seeding, and a new growth starts away from the base and prolongs the season. Dusted a little Tobacco-powder among the young growth of the outdoor Peaches, as we do not want flies on the trees. Took the last batch of pot-Strawberries indoors. These will carry us on till the plants on the early border have ripe fruit on them. We grow a good many alpine Strawberries to come in after the large-fruited kinds are over, and the first flowers are cut off the alpines to give strength to the second crop of blossoms. These beds are always mulched rather heavily in spring with short stable-manure to keep the roots cool and moist and increase the size of the fruit. Potted off a lot of seedling Ferns from boxes. Will be kept close and shady till established. Sowed seeds of Aralia Sieboldi and Grevillea robusta in heat. Filled a lot of 5-inch pots with Club Mosses of various kinds. These make useful decorative stuff in autumn and winter. We also grow a lot of the beautiful variegated Grass Eulalia japonica. Divided in spring and helped on in heat some can be made useful.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

481—**Pot-pourri.**—Kindly give me recipe for making pot-pourri—a simple one, if possible?—COUNTESS.

482—**Glory Peas** (Clianthus puniceus and C. Dampieri).—I should be very much obliged if you would kindly give me full particulars as to the culture of each of these Clianthuses? My garden is rather exposed, near Reading. I have a cold greenhouse, or nearly so, facing south. —S.

483—**Hedgehogs.**—Can you or any correspondent help me in this? I have had both old and young ones, and find they die after about eighteen months. They have had bread and milk several times a week, and their winter burrow has been in a heap of dry leaves in a lean-to house, which never freezes hard. I keep them, as I find they clear off a large quantity of slugs, sowpigs, and insects.—CLIFTON.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

484—**Pinus** *(Montana).*—There can be no better soil for the Pinus than what you have, if a little leaf-soil and grit could be worked into it.

485—**Petunias** *(Novice).*—You could not have treated your Petunias better, and with brighter and warmer days they will soon make rapid progress.

486—**Perennial Japanese Hop** *(Forty First).*—We presume you mean the variegated variety of our common Hop (Humulus Lupulus variegatus).

487—**"Stalky" Ferns** *(J. C. Smith).*—The Ferns are evidently starved. Pot them at once, and keep them nearer the glass. A dense shade is hurtful.

488—**Male Aucuba** *(Antoinette).*—This has smaller, narrower, and more divided leaves than the female variety, which, of course, is the one that bears the berries.

489—**Disposing of heating apparatus** *(E. P.).*—We think the best way would be to advertise it, as you are almost sure to dispose of it in that way at a better price than if you offered it to a dealer.

490—**Hydrangea paniculata grandiflora not growing** *(G. W. Wells).*—Have you cut the plant down? If not, do so at once, and new shoots will come from the bottom. This is hardier than H. Hortensia.

491—**Hot-water pipes** *(Amateur).*—We do not know of such an apparatus. Cannot name individual makers. Apply to one of the firms that advertise in GARDENING; you will then get all the information desired.

492—**Seedling Cherry** *(A. Maze).*—Very few Cherries come true from seed; in fact, much time is lost in testing. We would advise you to bud in July, and if you do not succeed you could then graft in the early spring.

493—**Primulas** *(Novice).*—The coloured and the largest white Primulas are seedlings of P. sinensis. The smaller light-coloured flower appears to be P. obconica. This is a very pale lilac. If not, we fail to recognise the bloom sent.

494—**Rose of Sharon** *(Mary).*—This is Hypericum calycinum, and is a very handsome covert plant. It will thrive in any moderately shady place where the soil is fairly light. Its big yellow flowers are a pleasure to see. Apply to publisher about index. You can get it, no doubt.

495—**Cucumbers losing their fruit** *(Champion).*—Your temperature is not high enough. We fear it goes lower than you are aware of at night. Give more warmth, less air, and more moisture, and stop all shoots at two joints beyond the fruit; this assists swelling. We fear your heat fluctuates.

496—**Heliotrope** *(Novice).*—Your pot is large, unless the plant be also beyond the usual dimensions. We would not prune, but simply pinch out the points of young growth, and thus induce breaks lower down. A compost of leaf-soil and loam, with a little sand and decayed stable-manure, will do. Heliotropes enjoy a moist and rather warm atmosphere.

497—**Air-plant** *(A. E. Cotterill).*—We thought it was very probable that your so-called Air-plant was nothing of the kind. The leaves sent do not belong to Aërides, the genus generally spoken of as Air-plants. Yours is one of the Hoyas. It needs a sandy loam and peat in equal proportions, a warm greenhouse temperature, and frequent syringing. Do not over-water, and if possible turn out into a narrow border and grow upon a wall.

498—**Narcissus poeticus not true** *(L. A. Russell).*—It is impossible that bulbs of N. poeticus can have changed into single yellow Daffodils. If your flowers of N. poeticus have borne seeds from pollen of yellow Daffodils it is possible that the yellow seedlings have appeared unknown to you. It is often assumed that one plant "turns into another," but the assumption nearly always is the result of ignorance or erroneous conclusions from imperfect observation.

499—**Cactus not flowering** *(Failure).*—You are treating your Cactus right, but you cannot force them to bloom. The plants seem healthy, and if you could give them a warm greenhouse during winter, keeping them rather dry at the roots, there is little doubt but what plenty of bloom would result. As the red variety flowers with you, the white will probably do the same in time. Although they will live in a room all winter, to do them well necessitates a greenhouse shelter at that period.

500—**Thrips on Vines** *(Anxious).*—You need not be afraid of thrips if you fumigate once a fortnight, doing the work when the Vines are dry and after the sun has left the house. Fumigate as soon as the bunches have set, but be careful not to allow the Tobacco to flame, and far better do the work several nights in succession than too strong a dose at one time. This is far better than syringing with mixture; the latter is only necessary if Vines are badly infested. Nicotine is superior to Tobacco, but needs care.

501—**Daffodils and Narcissus bulbs not flowering** *(Abbey).*—Whenever Narcissi do not flower the best rule is to dig them as soon as their leaves turn yellow in July, clean them, and replant not later than August, as they are better in the soil than exposed to the air. It is, of course, convenient for salesmen to store their bulbs, but most growers replant as soon after dying as possible. A light, sandy loam suits Narcissi generally, and if your soil is cold and stiff you may add sand or fine gravel with advantage. Bone-dust and wood-ashes, well dug into the soil, form the best manure for all bulbs. On no account use crude farmyard or other manures.—F. W. BURBIDGE.

502—**Rhubarb bolting** *(Constant Reader).*—All Rhubarb in good condition shows seed freely at this season. Some years it is earlier than others. You must pull out the seed-stalks, as this weakens the plant, and it will soon make increased growth. Do not cut, but pull seed growth out bodily. We scarcely understand your question as to

planting Leeks up Celery trenches, after Celery has been planted. You cannot grow both in the same trenches. If you mean on the ridges, it is not at all a good place, as when moulding is finished, your Leeks will be high and dry, and not in the most favourable condition. Much better plant in trenches or deep drills. Your Celery will not be cleared in time to plant Leeks.

503—**Peach-trees sickly** (*H. G. A.*)—Your trees are cankered. Peaches and Nectarines under glass are liable to canker with the best treatment and shading. The trees are so prone to canker. The trees first fail at the portion grafted or budded, and in some cases the roots are too deep, but in your case it is the shading by the trellis and trees which has done the mischief. You can soon ascertain condition of other trees by cutting back, also colour of foliage will show if canker is present. You may grow these fruits to advantage, but not shade in any way. Young trees will soon crop. It is useless to retain those attacked if they have lost much wood. You see Vines are not on other stocks. They will also stand more shade.

504—**Annuals for shady places, etc.** (*C. Lance*).—A few good annuals for your purpose would be Sweet Alyssum, Arabis alpina, Nemophilas, Zinnias, Tagetes, Sweet Sultan, Saponaria calabrica, Godetias, Clarkias, and Calliopsis. Leave the Freesias and Alliums alone until they die down, when treat the bulbs in the ordinary way. There is a vast variety of Ipomæas, and you do not say whether yours belong to one class or not. Generally, they may be transplanted into a rather light, but rich loam, and allowed to grow at will. Some of the Ipomæas are hardy, and the same applies to Hibiscus, there being hardy and stove annuals, as well as hardy herbaceous perennials, stove and greenhouse evergreen shrubs of the Hibiscus If you will say which yours are we will give a fuller reply. Allium descendens enjoys a sandy loam, and is best grown in pots under cool greenhouse treatment. The flowers are purple, borne in clusters upon a stem about 1 foot high.

505—**Planting a small flower-border** (*Amateur*)—You would do better to confine yourself to hardy plants; but, as you wish us to recommend a different system of planting the same subject, we gladly accede to your request. Instead of planting in rows as last year, mass the plants, as by this means you will secure better results. Clumps of say half-a-dozen each of Pansies—the tufted forms are the best—Begonias, Asters, Stocks, Gladioli, and Carnations will be far more effective and create something new for you to look upon. This plan of massing shows many of our simple hardy flowers off to greater advantage than when they are dotted singly here and there in a border, or shown in uniform rows in such positions. The Pansies may be used as an edging to your border, arranging the plants two or three deep. In the place of the Dahlias for an autumn display, use early-flowering Chrysanthemums, as they are far hardier and the following sorts equally pretty: Harvest Home, crimson and gold; Mme. Marie Masse, mauve; Francois Vuillermet, peach; Ambroise Thomas, reddish-bronze; Comtesse Foucher de Cariel, old-gold; and Ryecroft Glory, bronzy-yellow.

506—**Euphorbia splendens.**—I have three plants in 5-inch pots. They were cuttings struck last summer. They have been flowering more or less for three or four months, and there are still a few flowers on the plants, which are kept in a warm stove. When should they be potted, and soil suitable for same? I am told they should be kept quite dry for three months to rest them. Information respecting their culture would oblige.—Venus.

*** *Rest them for a time, say a couple of months; then cut them down, while still keeping them quite dry at the roots. After two or three weeks pot up into a rich compost of turfy loam and leaf-soil, with a dash of coarse sand, and grow on as before. September is a good time to repot.*

507—**Making liquid cow-manure.**—What are the best proportions of water and solid for liquid cow-manure? How should I use nitrate of potash? May I use safely 1 oz. to a gallon of above?—C. L.

*** *You may give 1 oz. of the potash to a gallon of water for most plants, and cow-manure use liberally, say one barrowload to 40 gallons of water.*

508—**Forget-me-nots.**—I have some Forget-me-nots now in bloom. Will they be good next year, or ought I to sow fresh seed in July?—Forty-first.

*** *You can save the plants for another year, but it is advisable to sow fresh seed each year to keep up the stock.*

509—**Propagating Passion-flower.**—How is the Passion-flower propagated? Could it be done out-of-doors in the Orange Free State?—Mary.

*** *The Passion-flower is propagated by cuttings about 6 inches long, and taken off with a heel, or they are easily propagated by layers. They should strike well out-of-doors in the Orange Free State.*

510—**Sulphate of ammonia.**—I have purchased some sulphate of ammonia to use as liquid-manure or dry. Will you tell me how to use it, and in what quantity, for hardy flowers? The soil is red sand, and very poor?—L. A. T.

*** *Use it in the same proportions recommended for the nitrate of soda to "Abbey," and read our remarks about applying it to hardy plants.*

511—**Shoots on Gooseberries.**—Should I stub off the little shoots growing at the base of my Gooseberry bushes? The bushes were neglected by previous occupier, and have several main branches, but they bore well last year.—G. L. Wells.

*** *Yes, remove all sucker growths at base of your Gooseberries. Allow main branches to make new wood.*

512—**Cleansing ornamental tiles.**—I have recently taken down an old staging in a greenhouse; the ornamental tiles are covered with green slime, which I find very difficult to get off. Can you suggest anything that will remove it from the tiles? I have tried scrubbing with hot-water and soap.—E. Carmichael.

*** *Sand will remove the green on the ornamental tiles. Scatter it thickly over the tiles and scrub well with a hard broom or scrubbing-brush.*

513—**Climbers under verandah.**—What climbers could I plant in pots under a verandah covered with rolled glass, facing south? I have some Roses, but want evergreen or winter things. Would Chimonanthus fragrans, Solanum jasminoides, Bridgesia spicata, Clematis montana, Crataegus pyracanthus, Euonymus japonicus albus-aureus, Lardizabala biternata be suitable for this, or for a west wall uncovered? Could I plant now?—Devon.

*** *All the plants named would be suitable. We should omit the Euonymus and Pyracantha. Clematis montana is rather strong-growing. Put in the Plumbago capensis. Solanum jasminoides would be charming. Choisya ternata (Winter Sweet) should not be forgotten. If you want evergreen things, the Myrtle would be preferable to the Euonymus.*

514—**Cherry flowers falling.**—My Cherry-tree is covered with blossom, but the entire flower is falling, like specimen sent. It did the same last year, and did not bear a single fruit. It is a very old tree. What can I do to it?—Cherry-tree.

*** *You do not tell us the aspect on which your Cherry is growing. The falling is either the result of dryness at root—if at foot of wall trees, are often dry—or the result of canker. If tree is old we fear we cannot help you without further particulars.*

515—**Siberian Crab not flowering.**—Some five years ago I planted a Siberian Crab, or Cherry Apple, and it has produced a tree about 7 feet high, but at present shows no signs of blossom. Can you suggest a reason and a remedy?—G. P.

*** *Your tree to produce fruit must be grafted. It is now too late, and you will do well to have it done next spring. You may bud in July, but we fear the tree is too large for that.*

516—**Age of Blenheim Orange Apple-tree.**—I have a Blenheim Orange Apple-tree, a heavy cropper. The trunk measures 49 inches round at the base, and 45 inches 6 feet from the ground. It is about 35 feet high, with large, spreading branches. Would you estimate or state the age of it?—Blenheim Orange.

*** *To estimate age of tree depends upon soil—if fertile or otherwise. We should say your tree is at least forty to fifty years old by size of trunk. It may be much older, but we have no information as to soil or position.*

517—**Flowers and vegetables for garden.**—I have a garden, 150 feet by 40 feet, with walk down centre. One half is shaded by trees, and only gets a little sun after about four o'clock in the afternoon. The soil is rather stiff clay. Kindly say what will do well there? I should like half flowers and half vegetables.—New Reader.

*** *The following will be suitable for the soil and position required—Flowers: White Japan Anemone, Aquilegias, Day Lilies, Lily of the Valley, Gaillardias, Anchusa italica (Alkanet), Tufted Pansies (you should plant a good selection of these at once), Lilium umbellatum, Primula japonica, and Delphiniums, but very few things succeed in such positions. Of vegetables select Potatoes, Broad Beans, roots in variety, Spinach, Broccoli, Kales, Leeks, and Brussels Sprouts.*

518—**Madonna Lilies not flowering.**—In reply to your inquiry for further particulars, I should say that the soil in which my Madonna Lilies are growing is a light clay loam. They have been given no particular treatment expect that last November they were all mulched with a dressing of stable-manure, so that those that are doing well have had just the same treatment as those that failed. These latter do not look as if they were attacked by any insects, as their leaves are quite green and healthy. They, on the contrary, present the appearance of fine green clumps, but on closer inspection, there are about eight flower-stems (all originating from one bulb) which look very weak and do not flower—at least, they did not last year, when they looked just the same as they do now. A few of the bulbs have thrown up one single strong and healthy spike which promises to flower well, and these are quite close to the others and have been treated just the same. The border they are in is on a slight incline and facing south.

*** *We have now no doubt but that your bulbs threw off so many offsets that they were not strong enough to flower last season. If really healthy they will do so this year or next. Your soil is quite suitable. It seems to have been a matter of over-reproduction only, and we trust you will have some grand clumps in the future.*

519—**Growing Gardenias.**—I have no heat, but have been very successful in growing indoor Freesias, Abutilons, Ferns of all sorts, etc. Could I grow Gardenias? If so, how would I set about it, supposing I had the plants?—G. W. Wells.

*** *You will not succeed in growing Gardenias, as a very warm temperature day and night is necessary, as you will see by referring to our previous number, March 16th.*

520—**Dahlias.**—I have read with considerable interest your article on "Some Choice Pompon Dahlias" in this weeks' issue, April 24th, but as I have not much room should be pleased if you would tell me whether the Pompon and the Tom Thumb varieties are the same or not, as I intend purchasing some Dwarf Dahlias?

*** *The Pompon and Tom Thumb Dahlias are not the same. The last-mentioned are very dwarf, 18 inches to 2 feet high, but we have no love for such squat things. There are no really dwarf Dahlias except these, but how dwarf do you want the plants to be?*

521—**Treatment of young Dates.**—I put in six common Date-stones in a 6-inch pot. To my surprise they all grew, and are about 6 inches high and look like seedling Palms. Are they worth growing? Do they flower or fruit? Shall I pot them off singly, or put them in a larger pot as they are? What heat do they require? I have kept them so far in Cucumber-house on shelf near glass.—Date.

*** *When the plants are large enough, pot off singly into 60 size pots in a compost of turfy loam, with a little peat and sand, and grow in a temperature from 60 degs. to 65 degs. Syringe twice a day to check red-spider. No fruit will be got until the plants are very large.*

522—**Old Apple-tree decaying.**—I have a very old Apple-tree in my town garden which is gradually decaying away. A storm lately broke a large branch which looked sound, but when broken showed that the wood was rotten. It bore tolerably well last year. I do not in the least care about the fruit, but could I use any means to lengthen the life of the tree? It forms such a nice shade, hanging almost like an umbrella, so that it is quite an ornament to the garden. I should be very sorry to let it die if I can help it.—Kathleen.

*** *We fear you can do little to assist the tree; it is past assistance. We have seen such trees take a new lease of life by carefully thinning out old wood and allowing tree to make new—that is, to allow more light to the centre of tree. At any rate, a little thinning would give vigour.*

523—**Plants for greenhouse.**—I have lately taken a house with large greenhouse attached to it. I have had no experience of one before. Will you kindly tell me through your columns what I could grow without fires and with artificial manure? Could I grow Tomatoes and Cucumbers and Roses? If so, what kind of manure should I get?—Perplexed.

*** *You could grow Tomatoes in summer. Plant out now in large pots filled with loamy soil, and also such Roses as Maréchal Niel, Sofrano, and William Allen Richardson. We should advise you to read carefully the articles published in Gardening on the "Lady-Amateur's Greenhouse."*

524—**Tomatoes in pits.**—What is the proper treatment of Tomatoes planted out in pits, and particularly what shoots should be pinched, and when?—S.

*** *Train your Tomatoes to one stem and allow a free growth for several feet, when the plants will then push out lateral or side growths with a flower truss at base or at the first or second joints. Pinch back laterals to the flower or at least to within one joint, but so much depends upon the vigour of your plant. This pinching you must follow up weekly, stopping quite close as advised, and in very few cases you may reduce leaf growth—that is, cut a portion of leaves. Do not feed until you have a good set, also allow a free circulation of air in bright weather. Do not shade at all, and in a close house leave a little top air on ventilators at night. Allow main shoot to extend if house permits.*

525—**Pollen on Austrian Brier Rose.**—Can anyone tell me if the Austrian Copper Brier Rose ever has any pollen, as I have failed to discover anything in the nature of a powder on it?—M. B.

*** *Yes, quite as much as the generality of Roses. It has been much used in hybridising for the beautiful Hybrid Sweet Briers.*

526—**Stocking a small conservatory.**—Will you kindly advise me how to stock my small conservatory at Hampstead? It opens from sitting-room, but has no heating apparatus. Two sides are wall, and two sides facing east and south are glass. It is about 14 feet by 7 feet, and has a very high glass roof. I want something that will look green in the winter, without heat. I have a few climbing Roses and "Geraniums," and some Ferns. Would Myrtle do, or the evergreen Virginian Creeper? I have no other place in which to put plants that are out of flower.—Hampstead.

*** *Yes, Myrtle would do well in your house. We are publishing a list of subjects suitable for cold and warm greenhouse; also for other positions and purposes. You will find the names of suitable subjects included in that series of short notes.*

527—**Yellow and white flowers for boat**—I want by June 22nd next a quantity of yellow or white blooms to decorate a boat for Venetian fête, some that will last well when cut, and be very showy. What kinds of plants can I grow that will be suitable? I have plenty of garden, and a small greenhouse.—A. M. L.

*** *You are giving yourself less than two months in which to get the desired flowers, and this is quite impossible from seed or cuttings. You can purchase plants of Madonna Lilies, Canterbury Bells, Guelder Rose, Hydrangeas, and White Marguerites to supply white, and Calceolaria, Doronicum, Sweet Sultan, and Yellow Marguerites to supply yellow flowers; but you have left it much too late to be at all certain of success.*

528—**Cobæa scandens.**—Kindly say whether the above plant will grow out-of-doors in summer on a sunny wall in the suburbs? I have had it in a cool greenhouse for two years. The first year it bloomed well, last year it had but two blossoms on it, and I think it might do better outside. If it may be put out, shall I plunge the pot, or should I take it out of the pot, and how soon may it be put outside?—Mavourneen.

*** *You can grow the Cobæa scandens in the open. Plant out by the middle of June, and afford a rich soil. If in a large pot we would plunge it in the pot and water freely. Too gross a growth will not flower satisfactorily.*

529—**Changing Hydrangea flowers to blue.**—I have now in flower in greenhouse four Hydrangeas in 4½-inch pots struck from cuttings last autumn. They have been grown on single stem, one bloom on each plant, and are quite 12 inches across. The colour of the flowers is a creamy-white. I should be pleased to know how to change the colour of the flowers to blue, as I have seen some flowers of a blue colour.—Venus.

*** *Hydrangeas turn blue from certain qualities in the soil. You can propagate from a deep blue-coloured plant, and still not retain this desirable colour. A little alum dissolved in the water used will often cause it. Small portions of iron in the soil have occasionally the same effect, but you cannot ensure this colour. A plant may bloom pink one year, cream, or pale blue the next, and this without having been disturbed at the roots. We have verified these extreme and extraordinary changes in more than one instance. Try the alum and iron upon one or two of your plants.*

530—**Artificial manure for sandy soil.**—What is the best artificial manure for light sandy soil? How and when should it be used, and in what quantity?—S.

*** *Opinions vary much as to the best manure. So much depends upon the crop grown and in a single question we cannot define all. Neither does our space permit. Guano is good for light soil, applied as a winter dressing at rate of 1 cwt. to quarter of acre, or half the quantity as a top-dressing in showery weather. Nitrate of soda is a strong feeder applied at rate of guano, but as a surface-dressing. Fish-manure for many crops is very good, especially for Seakale and Asparagus, and at rate of 3 cwts. to 5 cwts. per acre. We find it best to vary the foods—say give one, then another, not always one kind.*

531—**Nitrate of soda as a liquid-manure.**—In what quantity and how often should this be used for plants in herbaceous border. Also is it good for Roses, Lilies, and Carnations? Would Peruvian guano be a better manure than nitrate of soda for plants such as the above and hardy perennials generally, also hardy annuals?—ABBEY.

*** *Use in the proportion of 4 oz. to every eight square yards, or say 1½ cwt. to the acre. As a liquid use it at the strength of ½ oz to a gallon of water. Take care to keep it away from the leaves. We do not care about applying to mixed borders. Hardy plants should not need it if the border has been well prepared. Guano is an excellent manure.*

532—**Half-hardy annuals.**—I have a bed planted with Tulips, which I intend to use afterwards for half-hardy annuals. What treatment should I give the bed after lifting the Tulips, and will the Tulips do for planting again next year?—RENFREWSHIRE.

*** *Yes, the Tulips will serve again; but you must wait until they have ripened off before lifting, and then store in a cool but dry place. You do not say the nature of your soil, so that we can only advise you to move it well and add a little stable-manure or decayed vegetable refuse before planting the annuals.*

533—**Artificial manure for Onions**—I should like further information about the Onion of last week. The soil is moist, some of it mixed, and the other inclined to be clay. Situation moist.—E. W.

*** *Use nitrate of soda at rate of 1½ cwt. to 3 cwt. per acre for Onions in showery weather. Guano at rate of 3 oz. to square yard, or double quantity for poor land, or as a liquid-manure at rate of 1 peck to 30 gallons of water.*

534—**Annual Roses.**—I was just going to write to you to ask you to give me some information on the subject of annual Roses through the medium of your valuable paper, when the last number of it (April 17th) arrived with a notice in it from "C. B." as to his experience of them. I regret to say that mine has been very similar. I got a packet of seed in February, and immediately sowed it in a box, adhering exactly to the directions on the packet, and also written by the firm from which I had it. The box I placed in a cold frame; at the same time I put three or four seeds in a pot and placed it in a mild bed in propagator. In the box now, after two months, there are four seeds showing, but the husks or shell of the seed has not fallen off the little seedling, as it usually does a day or two after it appears above the soil. None of the seeds in the propagator have germinated. I fancy the seed is old and weak, and when the annual Roses bloom in six weeks, as advertised to, the seed is fresh. I shall be glad for any information on the subject, and to hear someone else's experience.—M. L. T.

*** *We have found no difficulty in raising the annual Roses. It only needs a little care, similar to most other seedlings. Insects are very troublesome when germinating, and as leaf-mould is more subject to insects than ordinary loam, it may be your compost was affected in that way. You treated them correctly, but a medium between the cold-frame in February and the propagator would have been an advantage. By-the-way, annual is not the correct name; the plants flower for many seasons.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*C. Lance.*—Anthurium Scherzerianum, the "Flamingo-flower," and a native of Costa Rica. It created considerable interest when first sent over. It, of course, requires a stove temperature.——*W. T.*—1, Veratrum nigrum; 2, Flower had dropped, apparently a Peach; 3, Lungwort (Pulmonaria officinalis); 4, Arum italicum; 5, Centaurea moschata; 6, Eupatorium riparium; 7, Send in flower; 8, Pandanus Veitchi. The white marks are due to the Marguerite-fly. Pinch the grubs when seen between finger and thumb. No insecticide strong enough can be used without injuring the plants. Remove and burn badly-infested leaves.——*Breck.*—Odontoglossum Hystrix.——*Clonmeen.*—Yes, you are correct; it is a Dock, but we hope you will never grow it. We detest such variegated things as that. If you want a variegated plant for any purpose there are many better kinds. Destroy it. It has no monetary value.——*Miss Ramsden.*—The Balsam or Canadian Poplar, no doubt.——*B. T.*—White Rock Cress (Arabis albida).——*J. Bull.*—1, Ornithogalum umbellatum; 2, Lungwort (Pulmonaria officinalis); 3, Allium neapolitanum; 4, Lyme Grass (Elymus arenarius); 5, Kindly send fertile frond; 6, Phlebodium aureum.——*Novice.*—Cineraria maritima.——*Plant in box (labelled Watercress and Flower Girl's Mission).*—Iris tuberosa.

Name of fruit.—*Mrs. Robinson.*—We should say Hollandbury, but the fruits had gone considerably past their best.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. Davis.—"Burbidge's Propagation of Plants," published by Blackwood and Sons, London, will suit you. It is twelve shillings.

LAW.

Nuisance caused to garden by a neighbour's hedge (*A. J.*).—As your neighbour's hedge is some 15 feet in height, and divides his garden from your garden, it will necessarily be the means of depriving your garden of some air, and possibly also of some light and heat. But no matter how high it may be, you cannot compel your neighbour to cut it or top it. If the lateral shoots or branches overhang (or grow over) your land you should give your neighbour written notice to cut them back, and in case of his default you may cut them back yourself. But you must cut no portion that is upon or over his land—you can only cut those portions that are upon or over your own land—and you must remember that his fence will be set back a little distance within his boundary and that your land begins on your side of the boundary.

Right of tenant to remove fruit-trees and fruit-bushes.—I believe that when a tenant gives up a garden the landlord may prevent him from removing trees, such as Apple-trees, Pear-trees, etc. Can the landlord also prevent the tenant from removing bushes, such as Gooseberry-bushes, Currant-bushes, etc., and shrubs?—INQUIRER.

*** You are right; the tenant of a private garden cannot remove any trees he has planted, no matter what may be the nature of the trees. Neither can such a tenant remove any fruit-bushes nor any shrubs; in fact, such a tenant cannot even remove a border of Box planted by himself. Strictly speaking, such a tenant cannot even remove any flowers he has planted, for by planting they become affixed to the freehold, and in general everything that is permanently affixed by the tenant to the freehold then and there becomes the property of the landlord.

POULTRY.

Breeds of Fowls (*Mrs. W.*).—I cannot admit the Langshan to be a cross-bred bird. I distinctly remember it being introduced into this country and the hubbub caused by those who contended the Fowls to be Black Cochins. The Orpington is admitted to have Langshan, Minorca, and Plymouth Rock blood in its composition. The Golden Wyandotte has a Hamburgh comb; its tinted eggs are a proof that there is Asiatic blood, probably Cochin, whilst other breeds have probably been called upon to assist. Please do not think that I intend to imply that the Orpingtons and Wyandottes are cross-bred birds. They must now be recognised as pure breeds, because they reproduce themselves with tolerable accuracy; they are, in each case, a recently manufactured breed.—DOULTING.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Tomato-salad.—The Italian way: Cut ½ lb. of ripe Tomatoes in slices, put them in a soup-plate, mince up a green Chilli, also some Chives or young Onions. Add these, and pour over them a mixture of salad-oil one large tablespoonful, one dessertspoonful Tarragon vinegar, one teaspoonful salt. Mix all well together by stirring with a silver fork.—W. H. L.

BIRDS.

MANAGEMENT OF CAGE BIRDS.

THE GREENFINCH (Loxia chloris).—This bird is common over the greater part of Europe, and is especially plentiful in our islands, frequenting plantations, thick hedgerows, the borders of woods, and shrubberies. It breeds twice in the season, the nest being composed of Moss and wool, and lined with feathers and hair, which is usually built in a dense bush or hedge, the eggs being bluish-white, speckled with light orange-brown. The Greenfinch is guilty of doing considerable harm in gardens and orchards, being a destroyer of fruit-buds and a picker-up of fresh-sown seeds. In captivity few birds become more tame and familiar, although little can be said in praise of their musical talents; still, the call notes are clear and not unmusical. The bright olive-green and yellow plumage of the male of this species is very beautiful, but it is too well known to need a detailed description. It will readily pair with the Canary, but Canary-Greenfinch mules are of no great value. In captivity the Greenfinch will consume all kinds of seeds, but should be supplied chiefly with Rape and Canary-seed, with the addition of a little Hemp. These birds assemble in flocks on the approach of winter, and in company with Chaffinches and Yellowhammers visit stack-yards for the scattered grain as well as for shelter, and at this time numbers are captured by the bird-catchers for sale. S. S. G.

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GARDENING ILLUSTRATED.

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FRUIT.

GOOD PEARS FOR AMATEURS.

I was much interested in the remarks about Pears in GARDENING, April 24. The amateur is perplexed when about to select, say, a dozen of the best kinds, but any advice now will necessarily be brief, as the season for planting is past, but by noting the best or most profitable kinds during growth one can select such as are suitable and will do well with ordinary culture. The variety illustrated on page 103 (Durondeau) is a true amateur's fruit, as it is not only one of the best in its season, but nice-looking and excellent for market. It is in season during October. In France this variety is much esteemed for its appearance. It is not the best fruit for a heavy clay soil or exposed position, as on such it lacks colour and size. Grown on a warm, well-drained soil it is very fine, and, what is important to the amateur, grows well on the Quince or the Pear-stock, so there is no difficulty in securing fruitful trees, as either stock in this case is equally prolific. Most prefer a handsome fruit in addition to other qualities, and Durondeau is all one may desire. It makes a grand bush or pyramid, and in cold localities is a reliable wall fruit, the trees rarely failing to bear.

Of course, much earlier fruits than Durondeau are required, and there is no lack of good early kinds, the difficulty being to get late keepers. An excellent early Pear is Souvenir du Congrès, a large fruit and a seedling from the well-known Williams' Bon Chrétien. It is best grown on the Pear-stock, is a good eating fruit, and good in any form, but well repays wall culture in exposed positions. It ripens in August much the same time as its parent, but keeps longer, and is a firmer fruit on the Pear-stock, but is not long-lived on the Quince, though it makes a good cordon on the last-named stock, and is a good market Pear.

I need scarcely describe Bon Chrétien; it is well known, and is certainly worth room in any amateur's garden, and can be classed as one of the most profitable Pears, as it crops freely, but, unfortunately, requires to be eaten as soon as gathered. It grows well in any form—bush, standard, or pyramid—but should not be against a wall, as better keeping Pears are more worthy of wall-space.

Many amateurs prize a large fruit, and this they have in Pitmaston Duchess, one of the best of all Pears, and though it lacks really good quality, if eaten just at the right moment it is not at all bad; indeed, there are many inferior. It is a free bearer, but being so large is not suitable for standards. They soon get damaged by the winds. Grown as bushes or pyramids it is a suitable amateur's variety, and does well on the Quince-stock.

Conference, a newer Pear, raised by the well-known fruit-growers, Messrs. Rivers, is a very good addition to the early kinds, and is an amateur's variety, very prolific, a large fruit, and both on Pear and Quince-stock, and ripe in the end of October or early November, the quality being excellent, and the tree is a good grower in gravelly soils. No list would be complete without strongly recommending

Louise Bonne of Jersey, and so high an opinion have I of this variety that I would give it first place in an amateur's garden. If only one variety is grown it should be this kind. The fruits are above medium size—indeed, if the crop is thinned and the trees well cared for the fruits are large and handsome; it bears freely in any form and does well on the Quince, the flavour being delicious. The growth is very distinct, and the fruit is in season during October. I have advised thinning, as the tree is such a great bearer and crops much too freely. For profit and crop

Emile d'Heyst is a good amateur's kind. It is not a handsome fruit like those named above, and for market I do not place it equal to those named, but for crop, quality, and free-bearing in adverse seasons it is a fine Pear, especially for small growers, as it does well in any form on the Quince-stock, and is in season during November. It is one of the best quality Pears during that month, and the fruits are of a good size. Another grand Pear is

Beurre Diel, and though I have known this variety fail in cold, clay soils, in others it is superb; a very fine fruit, melting, and in season early in December; it is well worth a wall in any garden, and is so good that the amateur can grow it in quantity in various forms, and thus obtain a succession. This variety does well on the Quince, but on the Pear in wet soils it is not so good; but is a special favourite. On the Continent it is known as Beurré Magnifique.

I must conclude this brief note with a few words as to the best Pear we have—viz., Doyenné du Comice, a large, splendid fruit and the best flavoured of all; it does not always crop, but cannot be termed a shy bearer, and any amateur who can grow a few of the best Pears must not omit it, as it is not fastidious as to soil, does well on the Quince, and may be had in season from October to early December if several trees are grown in different parts of the garden.

G. Wythes.

Vines on walls.—There are few places where Grapes are grown out-of-doors, though in a few favoured situations passable fruit may be had when the seasons are favourable. As soon as it can be ascertained which are showing the best bunches disbudding should be taken in hand so that the shoots left may not be overcrowded. Stop them at one or two joints beyond the bunch and fasten the shoots close to the wall that the radiation therefrom may be of more benefit to the bunches. It is far better to have the main rods a sufficient width apart (say from 2 feet to 2½ feet) so that room can be afforded for nailing the young growths in, than to have them closer. The spurs ought to be at least 15 inches apart or crowding will be the result.

Black Currants in some places are often attacked by red-spider, especially where the ground is not of the best quality, and consequently the trees do not make that robust growth so desirable for the production of fine fruit and foliage. If such can be afforded, a mulching of decayed manure, afterwards well watering, would assist them wonderfully to swell up their crop. Last season I saw bushes that were completely denuded of their foliage by this troublesome pest. When only a few are grown, these can be occasionally washed with the garden-engine till the fruit begins to ripen, but this would be a somewhat difficult task over a large area. Do not neglect to look well after the larvæ of the saw-fly on Red Currants, which will soon make headway if allowed to remain.—R.

Plum Black Imperial.—This is a very large cooking Plum of great excellence, ripening about the middle of September. Grown as a bush it is rather prone to make strong wood, but biennial lifting soon puts matters right and induces a fruitful growth. At the same time the tree requires more room when grown in bush form than many other varieties, and cannot, therefore, be recommended as a good kind for amateurs to plant. For private or market gardens it is unquestionably a good variety, and when well attended to it never fails to produce good crops of its large handsome fruits.

Pear Beurre de Capiaumont.—This old-fashioned Pear deserves a place in every garden, as it is very hardy and almost invariably bears good crops, the fruits being of medium size, handsome, and of a most agreeable and refreshing flavour. It is one of the best espalier Pears I know, the fruit on trees so grown being far handsomer than that from wall trees. It may be called a second-early Pear, but has the good qualities of keeping much longer when fully ripe than any Pears of the same season. It does well as a standard, and is largely grown in some counties for market.—J.

Plum Late Orleans.—This is a valuable Plum, as it is not only late in ripening, but it hangs for a long time in good condition after it is ripe. It is very much like Orleans in shape, but rather larger, and dark purple in colour. When fully ripe it is a good Plum for dessert, the flesh being tender, juicy, and richly flavoured. Hanging so long as it does, it is available for the purpose named when all other but cooking Plums are over. Grown as a pyramid or bush the tree crops well, and can be depended on to produce fruit annually. Lifting every other year is necessary with young trees until they start bearing, but once they commence to fruit no further attention in this direction is necessary.

Destroying mice.—In early spring my warm greenhouse is always visited by these troublesome pests, and they sometimes breed there, behind the cistern. I have quite cleared the building by a constant use of the old-fashioned Irish trap (the slab of wood with three or six holes and springs, fastened down with a needle or thread). Some fresh oatmeal placed in each hole is the bait, which never fails. In the garden just now the field-mice have begun to scratch up and devour the sowings of Spinach, but the same traps, baited with a few grains of the seed, are doing good work—five of the thieves in one night, fat, plump specimens, like juvenile rats.—W. H. Lowther.

THE KITCHEN GARDEN.

NOTES ON PEAS.

Nothing will be gained by making any further sowings of second-early Peas, as those varieties generally used for the main crop will succeed excellently from this time on any soil, whether heavy, light, or medium, and as there should no longer be any fear of the seed rotting in the ground, still thinner sowing than I advised earlier will now be advisable, especially on light and easily-exhausted soils. With sticks inexpensive and room plentiful, I prefer growing tall varieties for the main crop, as most of these will have a far greater length of bearing haulm than is possible with those of less height, and the pods will be just as thickly placed on the plants. Sowing as I do here at wide intervals and in rows running north and south, and cropping the ground between with Potatoes, no harm is done by growing tall varieties, as the shade they give is not sufficient to interfere with the growth or ripening of the Potato-crop, while the Peas themselves get the advantage of a free circulation of air and full light. I hold that the common practice of sowing Peas row after row on the same plot, and at distances apart corresponding only to the height of the varieties used is wrong, as it does not give the plants a fair chance of doing their best, while in the case of an attack of mildew setting in on any one row, it is carried quickly throughout the plot. Those who believe the old Ne Plus Ultra to be the best of all Peas may sow this now, as it is equally useful for the main as it is for the later crop, and when the excellent quality and enormous cropping powers of this Pea are considered, one cannot wonder at the predilection many have for it. Other good Peas which I can safely recommend for sowing now are Champion of England, Prodigy, Telephone, and Main Crop. These all do well on the light soil of this garden, the last also being fitted for small gardens where tall growers are not satisfactory, as it scarcely reaches 4 feet in height, but is tall enough to be a fairly continuous cropper.

Early staking undoubtedly helps the plants in many ways. The sticks break the force of high winds and help to prevent attacks from birds, especially partridges and wood-pigeons, which often do great damage to the young plants when left unstaked long after they are up. Previous to staking, a little ridge of soil should be drawn up on each side, but not close to the rows, as this will help to retain any rain that may fall or any artificially applied water. The object in drawing the soil to the rows in this way is often lost sight of, and we find it drawn right up to the plants, so that they stand out at the apex of a single ridge instead of being, as they should be, in a channel or depression between two ridges. In spite of the many hints that have been given from time to time as to the manner in which Peas should be staked, we still frequently see the sticks set so that the tops meet, and by the time the plants reach their full height they are choked into a tangled mass. If the sticks are set wider apart at the top than at the bottom, the plants have room to branch out and spread in a natural manner, which will greatly enhance their bearing qualities. Another common fault is being too sparing in the use of sticks; there is no economy in saving a few faggots and letting the Peas fall through on either side of the row. All Pea sticks should have an ample quantity of brushwood on them, and be long enough to reach 1 foot or 2 feet above the advertised height of the variety being staked; finally, finish off the work by sticking between the larger stakes short pieces of the light brushwood trimmed from the tops when being prepared, as these will assist the young plants in their first efforts to climb and until they reach the brushwood higher up.

J.

Hoeing Potato plots.—As a rule, gardeners are anxious to run the Dutch hoe through early Potato plots as soon as growth is sufficiently advanced that the rows can be discerned. During the prevalence of frosty nights, however, care is needed in this matter, unless the tops are covered with flower-pots or other protection at eventide. I have frequently noticed that where the ground had been stirred with the hoe late in the day, frost wrought much more mischief than where no hoeing had been done, and that where the plots were side by side. If the day is fine and sunny and the hoeing is done, say, immediately after breakfast, the surface again becomes quite dry before nightfall, which makes all the difference. I prefer, however, at such times to let the surface remain untouched until the nights alter for the better, even if small weeds make a little headway.—J.

PARSNIPS.

Few roots are more useful than the Parsnip. It may be had for so long a season, and given well-drained land keeps well into the spring. I am aware some persons object to this vegetable on account of its peculiar flavour, but I think the Parsnip far more nutritious than the Potato, and less subject to disease. Much of the dislike is accounted for when huge roots are grown, and these, if not given cool storage, have an unpleasant taste; but I have a great objection to coarse roots of any kind, and the flavour of the

Parsnip Jersey Hollow Crown.

Parsnip is much impaired by lifting and the roots growing out—that is, making a second growth. As regards

Varieties, these are few in number. The Hollow Crown and the Student are among the best. The first is the one illustrated, and is very suitable for the large grower who wants size and good quality. For the amateur I should prefer the Student, which is large enough for all purposes. The roots are more shapely than the Hollow Crown. Of late years there has been a great tendency to grow coarse things without any regard to their flavour or keeping properties, with the result the main point—quality—is lost sight of. We are indebted to the Messrs. Sutton, of Reading, for the Student variety, which was the result of crossing with the wild variety and careful selection. Here one may see the value of quality over mere size. Recently another selection quite distinct has been secured. This is named Tender and True, and is even smaller than the Student. I need not dwell on variety, but briefly describe culture, and as the latter is most simple, my note will be very brief. On the other hand, there is good and bad culture, and a few words on keeping will add to my readers' interest, as this is equally important as growing good roots.

Culture.—The orthodox mode is to sow seed as early in the spring as the soil permits. There is an old saying that Parsnips cannot be sown too early, and here is the fault of many failures. Why sow seeds of any vegetable simply for the sake of attaining huge size with loss of quality? For the production of keeping roots I never sow till May is well in, and many would think Parsnips useless sown then. This sowing provides the sweet, medium size, shapely roots which keep well till the following May, and give us vegetables when there are none too many—viz., from March to June. I must admit to get large exhibition roots early sowing may be necessary, but the roots from May sowings are quite large enough for the purpose if quality is considered. The best soil for the Parsnips is a holding loam. On the other hand, the plant does well in most soils providing there is an open quarter, ample space, and freedom from weeds. Many err in giving too rich a soil—that is, too much manure. The roots should never get manure in a fresh state, as they fail to grow freely, coming forked and useless. Land that has been manured, say, for Potatoes, will grow Parsnips well after the Potatoes are cleared, or they may with advantage follow any of the Brassicas, Leeks, Onions, and Celery. In light porous soils it is well to make the seed-bed firm. Roll the land after sowing, previously thoroughly treading before drawing the drills. There is no gain in crowding, 18 inches between the rows and half the distance between the plants being none too much. The amateur sows much too thickly. It is not wise to sow like Mustard, as it is a waste of seed, and more failures happen from thick sowings than other causes. A few words as to

Keeping.—The Parsnip, unless diseased, keeps much better in the soil than when lifted and stored (left in its growing quarters and used in a fresh state, the roots are firm and the best flavoured), but I admit in some soils Parsnips go wrong at the crown. My advice is to sow later. Sow a smaller variety, and especially treat the soil. Use burnt refuse of any kind freely, avoid animal manures, and rely on a quick-acting fertiliser, such as nitrates, guano, or fish-manure. Dress the land freely with lime in autumn; gas-lime is excellent. Allow the land to remain as rough as possible when digging, to enable the weather to sweeten and pulverise the soil. Some may say, Why go to this trouble? It is work well repaid. The land is then in splendid condition for future crops after the one named. The plants left in the soil will begin to grow early in April if required late. Lift and lay in soil on a north border or under trees. Lifting will check growth, and the roots remain sound well into May. G. Wythes.

Cucumbers flagging.—Could you tell me the cause of Cucumber-plants dying? They look healthy in morning; at night they will be quite flat and dead. I enclose a root and leaf for your inspection. Several went the same way last year. I have been watching your paper to see if anyone else has been troubled with the same disease. Several of the fruits are quite bitter. They are growing in a span-roof house in pits, with manure for hot-bed, but the heat from manure is getting exhausted. I top-dress with turf, chopped up, and water with warm water. I put some slaked lime around the stem of one, yet it went the same. House heated 60 degs. at night, with 15 degs. to 20 degs. rise in day.—Cucumber, *St. Botolph.*

*** From the roots sent there is no disease, and we think it is the foliage. This is very badly attacked by red-spider and thrips, and the pests have eaten the life from the leaf, making them unable to stand full sunshine. You keep your plants too dry. They should get more atmospheric moisture. Your temperatures are good. Sixty degs. at night is none too high; by day 5 degs. more would be better. But you have either given too much air, in the shape of cold draughts, or not enough moisture. Large growers of Cucumbers never give air at all, but abundance of moisture, strong heat, and shade, and are not troubled with insect pests. Your remedy is to first clean the plants by syringing the foliage with warm water and a little sulphur, mixed with Tobacco-water or soft-soap;

then syringe the plants several times a day with tepid water. Shade the glass and keep the house close. Get a fair quantity of clean foliage, and do not fruit until you have ample clean leafage. Plants only slightly affected may be fumigated, but yours are too bad, and a severe dose would probably end in killing the plant.

Outdoor Tomatoes.—A too common mistake with many who grow Tomatoes outdoors is in sowing seed early and getting plants unduly strong, so that the stems grow hard and the roots get pot-bound before they can be planted out. It is better to sow early in April, as that allows a period of about six weeks to elapse ere it is safe to plant out. By that time the seedlings are stout, some 7 inches to 8 inches in height if they have been grown cool and kept near the glass. They have plenty of roots, and being planted with ordinary care, using with the soil a little sifted old pot-soil, growth is rapid, and it is in that way good trusses of bloom are produced, and with plenty of pollen the flowers are quickly set. In a few cases where plants can be grown against warm walls or fences rather earlier planting is safe, especially when some protection is afforded the plants at night.—A.

Parsley.—There are yet many very coarse, uneven forms in cultivation, all of which show lack of care in selecting. If growers for seed would from time to time select but half-a-dozen of the very best curled and compact plants of their strains, save for own sowing seed from these only, and make their seed-product the means of producing a more even strain, selecting in this way every year, we should soon see an absolute dearth of coarse, uneven strains. Whilst so much preference is still shown for the treble curled forms, these, too, often show a light or pale green hue that is not desirable. A rich deep green hue of leafage, even if that leafage be not so fully curled as in some others, is, all the same, worthy of attention.—D.

Haricots.—Where these are to be grown, an early start is necessary to produce a good crop of ripened pods, but my experience is that good Haricots can be bought cheaper than they can be grown in this part of the country, except in the finest seasons; therefore I do not advise their culture if it can be avoided. Sunny skies and an absence of spring frosts are necessary items in the cultivation of Haricots.—E.

A CALIFORNIAN LILY (LILIUM PARRYI).

It is now about twenty years since this Lily was first discovered in the vicinity of San Bernardino, Southern California, by Dr. Parry, during a botanical excursion in the neighbourhood, and the specimens having been submitted to Mr. Sereno Watson, it was named by that gentleman L. Parryi, in honour of its discoverer. It was after that soon introduced into this country, and was much admired by reason not only of its beautiful blossoms, but also from the fact that it was so very distinct from any other Lily in cultivation. This Lily, however, has never become common, and it always commands a good price, for in the catalogue of one of our nurserymen who makes a speciality of Lilies, each bulb is, I see, quoted at from 2s. 6d. to 5s. each. The bulb of this Lily is somewhat rhizomatous—that is, after the manner of the Panther Lily (Lilium pardalinum), but not to the same extent. The stem is slender, usually from 2 feet to 4 feet high, clothed with light green, narrow leaves, each from 4 inches to 6 inches long; they are sometimes in whorls on the lower part of the stem, but are generally scattered. A notable feature of this Lily is the long, slender peduncle on which each blossom is delicately poised. The flowers are funnel-shaped, each about 4 inches long and much the same across the expanded mouth, while their colour is a beautiful shade of rather pale yellow, sparingly spotted with purplish-brown; but in this latter feature, as also in the exact hue of the flower, certain individual differences occurs. The blossoms are rather pleasantly scented. Decided contrast to the rest of the flower is furnished by the anthers, which are brown, and being arranged closely together, are very conspicuous.

A Californian Lily (Lilium Parryi).

Like the different North American Lilies, L. Parryi succeeds best in a soil largely composed of peat, while it also needs a fairly moist position. The best examples I have seen were growing in a rather low-lying, but well-drained spot, and in such a position that they were slightly shaded from the direct rays of the sun. As a rule, the flowering season is about the latter part of June or the first half of July. A practice, which has become far more common of late years than it was formerly, is to plant Lilies and Rhododendrons in one bed, the soil and partial shade afforded by the shrubs being very favourable to many Lilies, and one of these is L. Parryi. Being less vigorous than many others, it must not be associated with large bushes. L. Parryi has played a part in the production of at least one hybrid. This was first shown in 1890 under the name of Francis Fell. The other parent is L. pardalinum, and the progeny is in general appearance about midway between the two. The flowers are orange-red, spotted with brown. H.

HARD-WOODED GREENHOUSE PLANTS.

Few classes of plants are now more neglected than these, generally speaking, for with the exception of Camellias and Azaleas, and here and there a few winter-flowering Heaths, it is rare to meet with any of them in average gardens. If this goes on, the greenhouse, instead of being filled with a combination of the greatest number of distinct and handsome plants that it can be made to accommodate, threatens to become as barren of general interest as our outdoor flower gardens were when the mania for confining their occupants to ten or a dozen commonplace summer bedders was at its height. Hard-wooded plants that require a good deal of special knowledge and experience to keep in a satisfactory condition should be avoided, but there are many plants belonging to the class under notice that present so little difficulty in the way of management that the exercise of ordinary observation and attention should enable anyone to succeed with them. Amongst these may be named the Boronias Drummondi, pinnata, megastigma, and elatior—all plants of elegant habit and good and lasting bloomers; Cantua dependens, a distinct and handsome plant rarely met with now; and Cassia corymbosa, as easy to manage as an Acacia, and one of the finest yellow-flowering plants we possess. Many of the smaller-growing Acacias, too, make charming objects in a greenhouse, either confined to bush-shape in the way of the old A. armata, or in the form of standards on 3-feet or 4-feet stems with bushy heads. The Adenandras also, in addition to their profuse flowering habit, are amongst the most fragrant plants grown.

Aphelexis, too, with their distinct everlasting flowers, keep fresh and effective for two months at a time in the early part of summer; these are succeeded by Phœnocoma prolifera which has flowers very similar in character, but which, in general appearance, is so different from other things that it is worth a place, even if it never flowered at all. Aotus gracillima, with its drooping, thread-like shoots studded with Pea-shaped crimson and yellow flowers, should likewise be met with.

Chorozemas, such as C. Lawrenceanum, C. varium nanum, C. v. Chandleri, and C. cordatum, are rapid growers and profuse bloomers, their bright red and yellow flowers distinguishing them from everything else with which they may be associated. Clianthus puniceus and C. magnificus also bear handsome flowers.

H. B.

Daphne Blagayana.—This handsome Daphne has this season been very conspicuous in Mr. Wilson's Wisley garden. The plants grow in good loamy soil, and are so placed that the roots are secured against stagnant moisture. If these conditions are observed there should be no difficulty in inducing this fine hardy flower to thrive where the air is pure. The large heads of creamy-white flowers are very effective, and the odour they exhale is very sweet.—Byfleet.

Draba olympica.—The new stem growths, which are erect and which develop during the blooming period, are the most distinct features of this alpine. It cannot fail to interest every lover of these humble flowers, and it is not so miffy as some of the Drabas.

ROSES.

A BOWL OF MAY ROSES (REINE MARIE HENRIETTE).

This fine Rose (the Red Glory, as it is sometimes called) is one of the best to cultivate under glass, especially where there is a good root-run, for it is extremely vigorous, needing plenty of food and water. The plant from which the Roses here represented were cut produces hundreds of blossoms each spring, being trained on wires (much like a Vine) under the roof of a conservatory. The first bloom this year was cut on the 1st January, others followed, until in spring the Rose was a mass of bloom and buds, which will, no doubt, continue to open for many weeks.

As this is specially an amateurs' Rose, a few hints as to successful cultivation of Roses under glass may not be out of place.

The Rose (whether a Reine Marie Henriette, a climbing Niphetos, a pure white, or a William Allan Richardson, apricot), should be carefully planted in a well-dug border containing turf-mould, if possible, without new manure. Good garden loam will do, however, if mixed with leaf-mould (and a little sand if heavy), or very old manure from a hot-bed will improve poor soil.

A bowl of May Roses (Reine Marie Henriette). From a photograph by Miss Mitchell, Lustleigh, Devon.

The roots being carefully spread out (the plant should be procured in a pot, and may then be planted at any time), and firmly trodden in, after being covered with fine soil, should receive a mulch of old hot-bed stuff over them on the surface of the border; but manure must never be allowed to come into contact with the roots of a Rose, as it frequently causes disease. Two mulches of manure, leaf-mould, and soot, mixed, should be laid over the surface soil yearly, in spring and autumn. An abundance of water when in growth, and soot-water when in bud, will be necessary; and the foliage should be syringed every day (except in the depth of winter) to keep off aphides (green-fly). The Roses should be cut before they drop, for carrying a quantity of bloom is exhausting to the plant, and air should be given constantly, without sharp draughts. The plant should be pruned as soon as it has finished flowering (though if the Roses are properly cut much thinning at this time will be unnecessary), and the redundant growth of the summer should be cut away in November, shortening the long shoots, and training them thinly under the roof. If well cultivated every fresh shoot in early spring will contain a bud, and this will open into the magnificent blossoms here figured, absolutely free from blemish, with massive foliage of deep green, clean and healthy.

The XL All vaporiser is a great help in fighting green-fly, thrips, etc.; if mildew should make its appearance a thorough syringing with warm Sunlight-soap and water, in which flowers of sulphur is mixed, will be of service, or mildew-powder can be used through a small pair of bellows, or an india-rubber-ball distributor, such as is sold for the purpose. But it should be recollected that blight usually indicates some error in cultivation; often too dry an atmosphere, especially in hot weather, a common error in amateurs' greenhouses. Water should be sprinkled over the floor of the conservatory daily at noon in summer, with a syringing towards evening, the upper lights being kept continually open.

J. L. Richmond.

ANOTHER TEA ROSE-BED IN SPRING.

I have been asked to write a description of another spring effect for a bed of Tea Roses, which will be bright with flowers at the same time as the one I described in Gardening, April 17th. The combination of bulbs and shrubs with Roses is not a very easy subject to treat, because so many things otherwise suitable and beautiful for spring effect would be injurious to Roses. But I can explain how a bed could be planted which would flower at all the seasons. My former bed would do so, and yet would be quite different. Like the other, it must be 7 feet wide and any length desired. Down the bed two rows of Tea Roses must be planted 4 feet apart and 1 foot from the edge of the bed—this leaves a space of 5 feet down the centre of the bed. Previous to planting, the bed ought to be well dug and enriched with manure, and if the soil is heavy some leaf-mould added to it, and if light some heavier clay, if possible. The Roses ought, of course, to have their budded part beneath the surface of the soil, and be planted with care during November. If the bed was mine and I had the other I formerly described, I should plant that other bed with the selection of Tea Roses I gave then, if a collection of Roses is wished for, and this entirely with La France; but if effect is wished for and not a collection, I should plant the other with Grace Darling only, and this one with La France only, as these two Roses flower very freely and have a long flowering season. They are both pink, but Grace Darling is flushed with orange, and is a very different Rose.

Down the very centre of the bed, at the distance of 4 feet apart, I should then plant a row of small shrubs of Prunus sinensis rubra fl.-pl., which would be smothered with pinky-red during the latter part of May, when the Azaleas in the other bed are also gay with flowers; or with Prunus sinensis alba fl.-pl., which is a similar shrub, bearing a white flower as freely as the other. Or, if it was preferred, I should plant five or six rows of the Tulip Gesneriana spathulata right down the centre, 4 inches apart and 2 inches deep. These bear gorgeous scarlet flowers on tall stems, and have a striking effect both near and at a distance, They flower at the same time as the Azaleas and Prunus.

In planting, if the Tulips are chosen, the bulbs must be laid on the bed where wished, and then netted in between them, at a distance of 1½ inches apart, must be Scilla sibirica bulbs, which will make the bed a brilliant blue during March (when the Crocuses in the other bed are blooming). These should reach to within about a foot of the edge all round, and can be planted under the Prunus (if they are preferred) just in the same way. All round the edge of the bed, filling the foot of earth left free of bulbs, rose-coloured Dog's-tooth Violets (Erythronium Denscanis) should be planted at the same distance apart as the Scilla bulbs, and in the same way. They will flower at the same time.

Having put all these bulbs *on* the bed, now put Scilla nutans alba and Scilla nutans rubra alternately between the Roses, in clumps of about two dozen between each two Roses, netting them in between the blue Scillas and Dog's-tooth Violet bulbs as before described. These will flower at the same time as the blue Scilla nutans in the other bed. When all the bulbs are laid on the surface, plant them in carefully with a little trowel.

The correspondent for whom the Editor of Gardening has asked me to write this description asks if I advise the Azaleas in the other bed to be all one shade or different. I meant them to be different shades of creams, yellows, reds, and pinks. My own are so; but this is entirely a matter of choice; but I think if her beds are not very long ones I should plant all Azalea mollis or all Azalea Ghent, and not the two kinds alternately, and I should give the preference to the Azalea mollis. Before ending I should like to add that in my description of April 17, the printers have put Madame "Nina" for the Crocus Madame "Mina," and "if the eight sorts are chosen," instead of "if the right sorts are chosen," in reference to the Roses.

Mrs. Robert Jocelyn.

Growing Rose-cuttings in bottles of water—About a month ago I purchased some Roses (Crimson Rambler). They seemed to have been out of the ground for some time, as the young growth was much withered. When planting I cut them down considerably, and put the cuttings into a clear glass bottle, about half full of water, and set them on a shelf about 18 inches from the glass of a small greenhouse, which was heated only sufficiently to keep out frost. For about a fortnight nice young green growth has been coming on the portion out of the water—some of it is now 2 inches long—and some young white rootlets are appearing at base of cuttings, and at some of the joints under the water. The water has never been entirely changed, only added to once or twice. I am now thinking of getting a much wider bottle, shifting the cuttings into it to give them more space, and add periodically some nice fine mould until the water is absorbed, and into which the young buds or roots at base may strike. Would any of your readers say if they have had any experience in this method, and if my intended course is likely to be successful? I have grown Musk, Mint, etc., in somewhat similar ways, but never tried Roses before.—An Old Subscriber.

Shoots of Devoniensis Rose shrivelling (*T.*).—The Rose growth is affected with mildew, and has evidently been scorched by the last few days' bright weather. You must afford some slight shade, give plenty of water, and ventilate more carefully. Syringe freely with a weak insecticide. We contemplate giving notes upon insect enemies and diseases of the Rose in an early issue; at present, all you can do is to follow the above advice. Devoniensis is not

more subject to such troubles than William Allen Richardson, and you could do no good by discarding either, so long as the cause is not remedied.

A Marechal Niel Rose lament *(An Old Maréchal).*—What can this grand old Rose be lamenting about? Is it because of parting with his master? He has done his duty, and may perhaps give still further pleasure to a future owner. But it is not "neglect of careless gardeners" that causes canker. We know of many grand old Maréchals growing side by side, and apparently under the same treatment as those which fail.

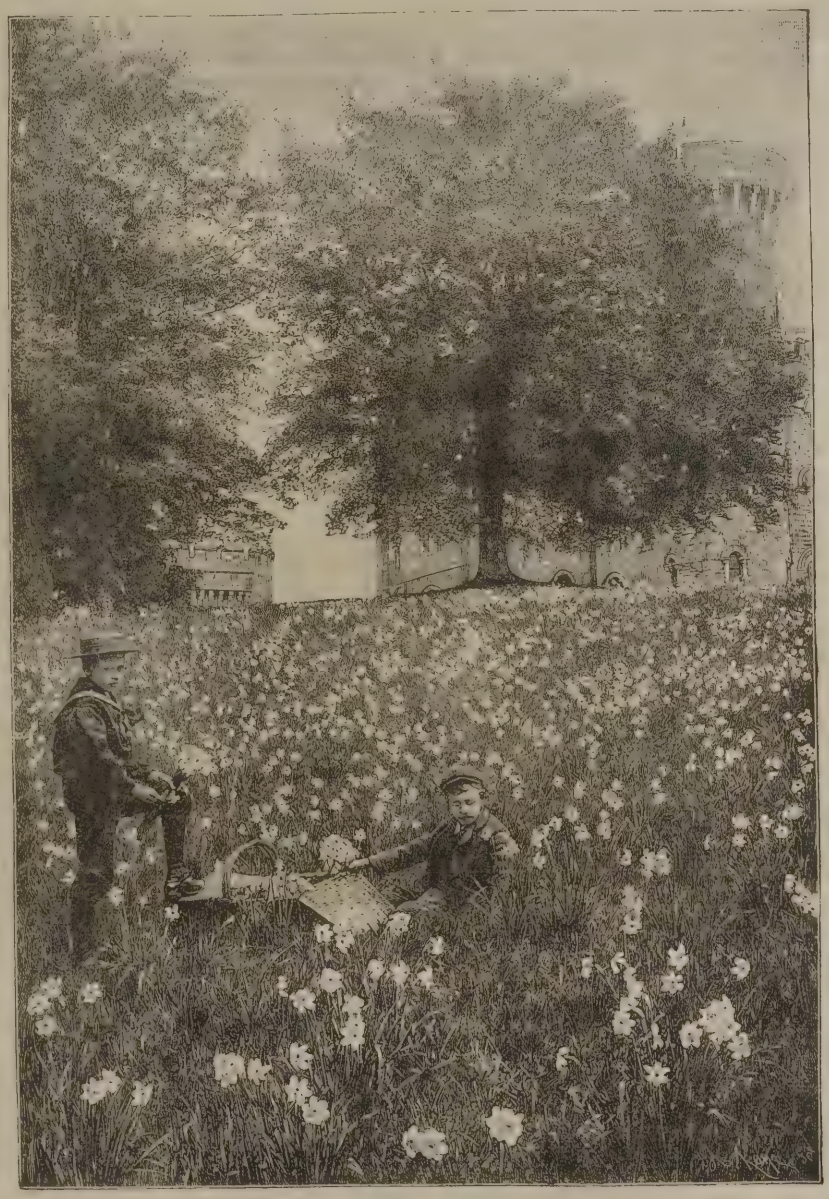
Hardening bedding plants.—Many of us do not pay sufficient attention to this point in the culture of summer bedding plants. Neglect to prepare the subjects for full exposure often results in serious diappointments that can be clearly traced to the fact that our plants were not in a fit condition to cope with full exposure to a low night temperature. Even in June we often find as much as 30 degs. difference between the midday and early morning temperature, and if our plants have been taken direct from the hot-house to the open such an extreme change is certain to have disastrous effects. It is not absolutely necessary to have the convenience of cold pits and frames for hardening off; we can always find some sheltered corner, or provide one by the help of a few boards, bushes, or old mats. Besides the benefits accruing from gradually preparing our plants for full exposure, we are making more room in the greenhouse. Lobelias, "Geraniums," Dahlias, Calceolarias, and many more of the hardier subjects can come out during the early part of May; but the Ageratum, Heliotrope, Begonia, Fuchsia, and others had better wait until the middle of the month, and then be transferred to their permanent quarters early in June. No bedding-out plants of the least tender nature can be put out into the open before early June with safety. Even then they are liable to check from late frosts, and those planted a week or so later will soon overtake any put out too soon. To look at their best, bedding plants that require greenhouse culture are always better when they can come on without check, and we must try to secure this by gradually exposing them to open-air temperature in preference to transferring them direct from the greenhouse.—P.

Tufted Pansy Cottage Maid.—This is one of the best of the fancy varieties, and is one of the first to bloom in spring. It is a plant of easy growth, and the flowers are freely produced. They are also very large and handsome, the colour being a rich velvety crimson-purple, with a light lavender blotch on each petal. The colouring is very rich already this season, but with the advance of warmer weather the lavender blotch becomes larger, and the two colours consequently more evenly balanced. About six or seven years ago this variety was put into commerce, but its value was not appreciated until last season, when it was rightly recognised as a first-class variety.—D. B. C.

OUTDOOR PLANTS.

LATE DAFFODILS IN THE GRASS.

The naturalisation of Daffodils is worthy of far more thought and attention than has yet been given to it. Of course, the nurserymen and the growers for market can scarcely be expected to do much in this line, but there are thousands of country house gardens and estates wherein and whereon Daffodils might be planted well once only, and they might then be left to themselves in orchards, thin plantations, sunny margins of woods, and in open meadows or on the outlying fringes of the lawn or dressed grounds. It is a fact that many Daffodils, as well as the Poet's Narcissus and many forms of



Late Daffodils in the Grass.

N. incomparabilis (Star Narcissus), grow and prosper better in the Grass than planted elsewhere. Once well planted in congenial soils these kinds may be left alone, and no doubt this practice, or that of throwing the pleasure grounds into meadows, has led to the preservation and consequent re-discovery of so many kinds of these flowers in Ireland during recent years. In Devonshire and Cornwall, in Kent, Hampshire, and Sussex, in Norfolk and Essex, and even as far north in England as Yorkshire, Durham, and Northumberland, and, at least, to Fife in Scotland, the Daffodil, single and double, has made itself at home near the sites of old houses, monasteries, castles, or abbeys; in a word, peace, religion, and war alike seem to have helped in the culture and fostering of these flowers of spring.

In Cornwall and in the Scilly Islands even the Bunch Narcissus (N. Tazetta) of the Mediterranean region had long ago become established, and whether introduced to St. Michael's Mount by old-time or mediæval monks, or by the tin merchants from the East, we may perhaps never know, but the existence of these flowers in Scilly has led to a total regeneration of the profitable land culture of these islands.

DAHLIAS WITHOUT STAKES.

Some of your readers may like to know the American system of training Dahlias without stakes. The method is the "single-stem branching system," which is successfully practised on a large scale by Mr. Lawrence K. Peacock, and described in his book on the Dahlia as follows: "All the shoots but one are removed, and this one is allowed to grow until two pairs of leaves are above ground, with a young and unexpanded growth on the top. This undeveloped portion is picked off, and four young buds which are lurking in the axils of the two pairs of opposite leaves are very much rejoiced. Some or all of of them will now grow out into long branches." Let us suppose that all four of them grow equally. The plant will then have a very short, thick, and strong single stem, which comes up only an inch or two above the ground, and then gives place to four long branches. These branches are strong enough to hold themselves up without stakes, and they can endure heavy winds. Indeed, a still greater division of labour is desirable, and each of these growing branches should have its terminal growth pinched out at the same early stage already indicated—viz., when only two pairs of leaves are fully developed. Practically, however, plants do not grow in this mathematical way, for one of the two buds waiting for a chance usually gets the start of his fellow, and soon outgrows him. The practical thing to do is to keep the plants from making a main trunk. The object is to have the plants branch at the surface of the ground, and the pinching must be done as early in the season as possible. It is a common belief that late pinching makes short-stemmed flowers and early pinching gives the long stems so much desired. This system, therefore, means work and watchfulness, but it causes less trouble than staking and tying.

F. S. Harrison.

Brodrick-road, Upper Tooting, S.W.

Sowing seed of Canary Creeper.—In the year 1895 I had a large quantity of these growing over arches, among shrubs, up poles, and many other places. The seed was very abundant, and a considerable quantity was collected, and in order to dry it before being stored away I put it into an old fish-kettle with some sawdust. The kettle and its contents got put away under the stage of my little greenhouse, and remained there all the winter and for a considerable portion of the spring of 1896. When I looked up the seed for sowing I was surprised to find a splendid crop of young

creepers from 1 inch to 4 inches long. When watering some plants some of the moisture had got into the sawdust in the kettle, and hence the growth, all of which did well on being put into good soil. Last season I tried to preserve the seed gathered in Lough Neagh sand, which I put into an old tin pan, and early in February last I merely wetted the sand thoroughly, put the pan up near the glass, and have now a splendid crop some 6 inches or more long, ready to go out in a few weeks—say about the first of June. This shows that these seeds are as much at home in an old tin pot, saucepan, or other receptacle, as in vases or pots.—Andrew Maze, *Ben Edin Cottage, Balmoral, Belfast.*

THE PAMPAS AND REED GRASSES.

Silvery Reed Grass (Arundo conspicua).—The chief value of this Grass I consider to be in its early flowering, as it commences to bloom fully two months before the Pampas Grass, and continues in good condition for three or four months. In growth it is not unlike the Pampas, but the gracefully-arching flower-spikes form one of its distinctive features, and this, coupled with the fact that it flowers about midsummer, makes it valuable for the sake of variety. This Grass suits any position where the Pampas is admissible, and in selecting a place for it, it should be remembered that it is quite as stately in character as the Pampas. I am not sure, however, that it would thrive in a swamp or near the water's edge of a pond or lake. We have grown it here in a rather sandy, well-drained soil, and it has grown in the most luxuriant manner, its flower-spikes frequently reaching a height of 10 feet. I consider it to be quite as hardy as the Pampas Grass, and no doubt it will thrive in any moderately light soil. It should not be crowded. The best place for it is an isolated position on Grass, where it will at all times maintain a presentable appearance. According to my experience, when small plants of it are planted they take six or seven years to form specimens in the proper sense of the word. If I could obtain plants five or six years old I would prefer them to younger stock.

Great Reed (Arundo Donax variegata).—This is somewhat distinct in character from the preceding, and better adapted for massing than for isolated specimens. Opinions will differ as to its merits, but notwithstanding that it well deserves attention, although its variegation may not be so clear and well defined as one could wish, it is nevertheless a stately plant when old, and under suitable conditions to give it character. From what I have seen of its behaviour it is a plant that is not very particular as to soil or position. In one nursery I know it was growing on a rather elevated position, and in Devonshire I saw it thriving in a shady dell and not many yards from a stream of water. Its stately growth is wanted for the decoration of large gipsy vases and similar receptacles for indoor ornaments. This is perhaps its greatest merit, because a reasonable amount of cutting will not do a strong plant any harm, as it possesses the advantage of being able to produce fresh crowns from the roots, and thus maintain its vigour.

Pampas Grass.—This is so well known that any lengthy account of it is unnecessary. I may, however, remark that it has not proved so hardy as it was at one time supposed to be, and although this is to be regretted, the only way of providing against possible contingencies is to select somewhat sheltered positions for it. Past experience proves that the cold east and north winds do it more injury than actual frost. This shows that shelter from these quarters is desirable, and, as it is the largest plants that suffer most, care should be taken that they are not thoughtlessly exposed by the removal of any shelter they may have had. The best time in the whole year for planting this Grass is at the latter end of April or in the beginning of May. Plants are very easily raised from seed, which may be sown in a pan of fine soil in March, and carefully nursed on and hardened off in June. Early in July the plants should be transplanted into a piece of rich soil in the open ground and allowed to remain there until they are large enough to put out where they are wanted to flower. If a few plants only are required they may be grown the first year in pots in a cold pit or frame—a plan by which they will make larger plants than those planted earlier in the open. In all cases a thoroughly deep soil is necessary in order to have this Grass in perfection. At the same time it may be expected to do fairly well in an ordinary soil. J.

The Pampas Grass in Suffolk. From a photograph by Miss G. N. Fowler, Gunton Old Hall, Lowestoft.

Growing Sunflowers (*Helianthus*).—You are right in supposing that Sunflowers can be grown on a large scale at a profit. The reason why more notice is not taken of the plant (or the seeds) is because it is seldom, if ever, grown in many districts of our Kingdom, except on an extremely small scale in flower gardens. Abroad it is raised for sake of its oil, which is extracted from the seed by pressure, as in the case of our Linseed, and the residue is made into feeding cakes, used for cattle. The oil is valuable, and it is asserted—though I cannot vouch for the correctness of the assertion, whilst believing it to be true—that the seed when ground makes an excellent meal. I have often wondered that greater efforts have not been made to produce Sunflowers on a larger scale in this country, seeing that there is a certain amount of attractiveness about them as flowers, whilst they are generally admitted to be a useful food for poultry, although from the circumstances already mentioned, there is not much chance of fowls seeing a single seed once in their comparatively short lives. The only way in which the Sunflower can be brought to the front is to grow it extensively, so that it would be worth while sending a good consignment to our large seed centres, such as London, where seeds of all kinds are sought after. The yield per acre in a good year must be extremely heavy, especially if the heads are large; but it would serve no useful purpose to go into details of this kind. It should, however, be mentioned that, from experiments which have been made, potash seems to be the predominant fertiliser required in manuring for the Sunflower; whilst, for feeding poultry, care must be taken not to use the seed until it is well hardened, for new corn is generally soft, and its free use is practically certain to cause impaction of the crop.—Doulting.

Phlox amœna.—Very few things among the easily-grown alpines can boast of the show of colour as well as the extended season of flowering of this gem of the American flora. Planted in a free, sandy loam well enriched, this species will quickly form masses of growth, in turn crowded with the pretty rose-coloured blossoms that render it all but unique, even in the spring-time. A warning note should be sounded that it be not planted on poor soil, for such a position would only mean starvation to it. Given liberal treatment, the plant is one of the most useful and beautiful we know. Nor is it content merely to flower in spring, for I have had an autumn display very nearly equal to that of the spring and as late as November. The plant may be easily increased.

NOTES FROM AN ARMAGH GARDEN.

A long continuance of cold, wet weather has greatly retarded and, in some cases, marred the beauty of several of our spring flowers. A few weeks ago

Mertensia virginica was promising. A plant with over a dozen arching flower-stems was just opening its lovely transparent blue flowers when it encountered a succession of cold, frosty nights, which greatly disfigured the beauty of its foliage.

Daffodils have suffered, but still have afforded quantities of perfect bloom for cutting. I would like to mention two which I consider gems—Nelsoni aurantius and Sunset. I do not think they are by any means common or cheap, but they are both beauties. Among

May flowers the double King Cup (Caltha palustris monstrosus pl.) has been conspicuous for its earliness, beauty, and endurance. In a moist, cool corner it seems quite at home, and has afforded a brilliant mass of bright glistening yellow and green when very little colour enlivened the monotony of the sombre brown border. The dwarfer variety nanus plenus is now coming into bloom, also the pretty single species purpurascens. For many weeks past the

Old Blue Polyanthus has been in bloom, and it seems likely to continue blooming for many weeks to come. More than a dozen plants combine to produce two groups of flowers of very unusual but very pleasing shade of blue. They occupy a nook where are also the old double Tortoise-shell (Rex Theodore) and the old Golden Pheasant. None of these, however, are yet in bloom.

Golden Drop is the name under which I obtained some time ago a very pretty little double orange-yellow Wallflower. I believe it is also known as Cheiranthus Harpur-Crewe. It is a wonderfully persistent bloomer, easily propagated, and very sweetly scented. I have plants in various positions in the rock garden, and for months past they have kept on flowering, several of them being at present brilliant masses of golden-yellow.

A small group of Muscari Szovitzianum subcœruleus is just now a charming and very striking object. Several other kinds of Grape Hyacinths are also very beautiful, but in form and colour this less common Muscari is exceedingly distinct; the pure, soft tint of the palo blue spikes is of an exquisite and very delicate shade. Colonies of

Anemone Robinsoniana, planted at the shady side of shrubs, etc., in broad patches, are now testifying to suitability of their quarters, this compact, informal grouping being very effective.

J. McWalters, *Armagh.*

Destroying woodlice.—I covered the root of a large tree that had been cut down with soil and planted thereon Moneywort, Crocuses, and other things. Finding there was a very large number of woodlice, with a dredging-box I sprinkled the plants well with Keating's insect powder. This brought the pests out; they were caught at once and put into lime and water. It is better to do this when the plants are dry. I repeated this two or three times during the summer, which appeared to entirely exterminate them and without any injury to the plants.—Matthew Stork, *Hull.*

Index of "Gardening."—*The index of* Gardening Illustrated *for last volume is now ready. It is published separately three-halfpence, post free, from this office.*

HOUSE AND WINDOW GARDENING.

USE OF FOLIAGE IN DINNER-TABLE DECORATIONS.

FLOWERS TO USE IN EACH MONTH.

JANUARY.—White Chrysanthemums generally abound in this month. The blossoms of the Christmas Rose (Helleborous niger) are also open. Forced Lily of the Valley, Snowdrops, and Winter Aconites, the latter three subjects each give plenty of their own foliage for the small vases or bowls for which they are well suited. The two first-named subjects are enhanced by the free use of the Mahonia foliage, which at this season is often richly tanned. Nice sprays of this may be inserted at the base of the stems to hide bareness.

FEBRUARY.—Forced white Lilac, Deutzia gracilis, Azaleas, Primulas, and Cinerarias are generally obtainable. Many bulbous subjects are also flowering freely, so that the task of decorating becomes much easier. The Lilacs are seen to advantage in large vases, and should be fixed to hazel twigs or stout wires, and any nice green or tanned foliage associated with them. Small tubes of the other smaller subjects dotted about upon the table make a welcome change, and look pretty if foliage of a green colour be used. With the months of

APRIL AND MARCH the list of subjects in flower is further augmented. In addition to those of last month, the beautiful flowers of Calla æthiopica are to be had in abundance. A large vase of these in the centre of the table is a splendid arrangement. The first of the Daffodils are also ready, and as these fine flowers are so useful for all purposes they should be often used. An épergne filled with these flowers is very pretty, and forms a fine feature in the centre of the table. The different types and colours should be well represented and a free use made of their foliage. A table decoration composed absolutely of the Daffodils may be repeated fairly often during March and April, varying the style of the arrangement and the utensils used. Tulips in all colours are also seen at their best now, and these should be cut with long stems, with their leaves attached. Nine or ten flowers, or even a lesser number, look pretty in a small trumpet vase, with the long leaves overhanging. A charming table may be made up of different bulbous subjects if it is not possible to have a table of one subject only. With these flowers small vases of Lily of the Valley and Primulas make a charming variety.

A Trumpet Daffodil (Golden Spur) in a vase. From a photograph by Mr. S. Wyndham-Fitzherbert, Lanscombe House, Torquay.

As the spring advances the wealth of flowers increases. Forced Roses, Spiræas, Zonal Pelargoniums, as well as those of the Regal and Fancy form of the flower, are within the reach of most people. Each of these subjects has a beauty of its own, and it is for the decorator to bring out each of their good points by a proper arrangement of colour and foliage.

MAY brings with it such an abundance of flowering trees and shrubs that it is easy to acquire one or other of these for a change in the decoration of the dinner-table. The bright pink racemes of flowers borne on the Almond during the early days of April, followed by the fascinating sprays of Pyrus Malus floribunda, Ribes sanguinea and other forms of the same shrub, Horse Chestnut, Laburnum, Scarlet Hawthorn, Lilac in variety, Philadelphus (Mock Orange), Rhododendrons, Ghent Azaleas, and Andromedas. Each of these hardy flowering shrubs and trees are deserving of attention, as they are not nearly so often used as they might be. They may be cut in nice long sprigs or sprays, and as there is just enough fresh green foliage in most instances attached, no other foliage becomes necessary. Many hardy flowers are obtainable during the same month. With the advent of the SUMMER MONTHS, it becomes an almost impossible task to speak of all the lovely flowers then to be secured. The Rose at this season will always be the popular flower, and this has already been considered. I should have mentioned earlier that a table-decoration of Maréchal Niel Roses exclusively is worth a trial, the effect being very soft and beautiful. The brilliant red and crimson H.P.'s under artificial light are seen to great advantage, and I have seen magnificent results with deep pink and rich crimson Roses associated. A table of Iceland Poppies in the colours of yellow, orange, and red might be used pretty frequently during the summer, and a few blossoms of the yellow Sweet Sultan in conjunction with them assist to give a little more fulness to the picture. Coreopsis grandiflora and C. tinctoria are two good flowers to use alone, their naturally light and easy growth adapting them for this purpose. Some of the smaller utensils are best filled with these flowers. Sweet Peas, cut with a good length of stem, are very pretty, the foliage, sparse though it may be, looks pleasing when the stems are arranged lightly. An evening decoration of bright pink, or pink and white Sweet Peas is very restful. The single flowers of the Tuberous Begonia are deserving of more attention. Few flowers show such a wide range of colour to select from, and their tints are of the warmest possible description. Flowers for decorations, however, should be grown without disbudding, so that each stem has the male flower and two female flowers retained. In this form they are far prettier and more graceful than when only one large flower is retained. Bright green foliage should be associated, and charming subjects to arrange on the table are the feathery seed-pods of the Traveller's Joy (Clematis Vitalba). Aquilegias, early in the summer, are very beautiful; their clear delicate tints are delightful. A few sprays of flowering Grasses and a little Maiden-hair Fern are all that are needed to make an ideal table decoration. Autumnal flowers are seen in the Dahlia, a large and varied family, the Pompon and Cactus forms meriting more attention than the more cumbersome show and fancy kinds. The Michaelmas Daisies are beautiful in form and colour. A handful of some sorts may be cut and placed in a vase in the most simple manner, and a pleasing arrangement is assured. Early and semi-early Chrysanthemums are useful for filling up the intervening space between the autumn outdoor display, and November and December.

Our illustration shows a vase of the early-flowered Daffodil (Golden Spur), arranged with its own foliage. D. B. CRANE.

Mourning Iris from Hayle.—You have from time to time published directions for the growth of Iris susiana and the Cushion section generally, so I thought you might care to see a bloom grown here, and have a few particulars of how the bulb has been treated. It was planted last September in a narrow, dry border with a south aspect, in front of a trellised Pear-tree. The season being so wet latterly it has been protected by a bell-glass, standing on two bricks. This has prevented too much moisture, and, of course, helped the plant generally. The bloom fully expanded on Good Friday, and I am sending it to you by the post in a box, and with it, by way of contrast, a flower of that little gem Iris cristata, which is doing well close by its regal neighbour. Iris Lorteti I am treating in the same way as susiana, and a fine flower-spike is showing, and if it matures satisfactorily will send that also, should you wish it.—JOHN VIVIAN, *Meadowside, Hayle.* [*A fine flower of this interesting Iris, with the charming little I. cristata. By all means send I. Lorteti. We enjoy seeing interesting plants from our readers' gardens.*—ED.]

CHRYSANTHEMUMS.

Cut-down Chrysanthemums (*Alfred Allan*).—Of your plants from cuttings inserted during the first few days in December, Sunflower, Mlle. T. Rey, Col. W. B. Smith, and Edwin Molyneux should give you first crown-buds about the right date in August without any interference with them; but if they must be cut down carry this out during the third week in May. Under this heading also include Mutual Friend, Florence Davis, Mrs. G. Gover, G. C. Schwabe, Thos. Wilkins, Mme. Carnot, Préfect Robert, Mme. Boco, and Val d'Andorre, retaining the first crown-buds in each instance. About first week in May cut back Lord Brooke, Eda Prass, Fimbriatum, Golden Gate, Miss Dorothea Shea, Mlle. Marie Hoste, International, and Mons. Pankoucke. As each of these sorts are rather later than the others, a longer time has to be allowed. First crown-buds in each case must be retained. Etoile de Lyon, W. H. Lincoln, Viviand Morel, W. Seward, Souvenir de Petite Amie, Mrs. C. H. Payne, Chas. Davis, John Shrimpton, Lago Maggiore, Rose Wynne, Mons. Chénon de Léché, Phœbus, Pallanza, W. Tricker, Stanstead Surprise, and Louise are each rather early in their bud development, and may possibly break naturally before the date advised. In any case cut back these sorts during the last few days in May—some of the earliest of them even a week later—and take first crown-buds. Not knowing the condition of your plants, we have assumed they are up to the ordinary standard. No matter when the plants were propagated, when they are cut back, as you wish to grow your plants, the natural bud development is altogether upset.

Stopping and timing Chrysanthemums (*One Anxious to Learn*).—If you desire good flowers of The Queen, Lord Brooke, and Lady Laurence you must pinch out the points of the shoots—this is stopping—at once; and retain the first buds which show on the shoots forming, as the result of this manipulation. Of the other varieties in your list, if the plants are strong and healthy, they will break or "stop" naturally, causing lateral growths to appear, which will each give a bud some two or three months afterwards. "Niveus" should be always written "Niveum;" they are one and the same variety. Topping is generally understood to mean cutting off some few inches of the growth of a plant. Your plant of Etoile de Lyon had better be pinched about the end of May. The object of stopping is to cause the plant to bloom either earlier or later, according to its natural inclination. Carefully follow the instructions given in GARDENING from time to time, and then you should not fail to succeed.

Stopping Chrysanthemums (*Amateur*).—Mrs. J. Shrimpton and Mrs. H. Weeks should have been pinched three or four weeks ago and the first crown-buds retained; and unless you take out the points at once you may not get any flowers worth looking at at all. Mme. E. Capitant, Lago Maggiore, Australian Gold, Duchess of Fife, Mutual Friend, and Viviand Morel should break naturally in sufficient time to obtain buds during August, so do not interfere with them. William Tunnington and Major Bonaffon would be better if pinched about the third week in May and first crown buds retained; while Chas. Curtis, Globe d'Or, and Mrs. F. Hopper should be pinched during the first week in June and first crown-buds

retained. We should have preferred second crown-buds for the incurved varieties, but as it is too late to effect this now we have advised the next best course.

When to pinch Chrysanthemums (*Old Chelt*).—If you want your plants to bloom in November pinch them as advised below; but if for ordinary decoration let them grow on unhindered: J. S. Dibben, Golden Gate, Janette Sheahan, Kate Mursell, L. Canning, Potter Palmer, Challenge, E. G. Hill, and Mme. Felix Perrin. Pinch out the points when these notes appear. Mme. Carnot, Beauty of Teignmouth (Pride of Madford), Deuil de Jules Ferry, Kentish Yellow, and Mlle. Thérèse Rey third week in May, and Chas. Davis and W. H. Lincoln first week in June, retaining first buds in each case. Pot finally into 9-inch pots.

Chrysanthemum colours and descriptions (*Thos. Varley*).—The following varieties are the best for you to grow from among the names submitted to us: Edwin Molyneux (deep crimson and gold), Madame Carnot, Mlle. Thérèse Rey (white), Sunflower, Wilfred Marshall (yellow), Lady Saunders (primrose), Miss Maggie Blenkiron (bronzy-yellow), Miss Dorothea Shea (crimson and golden-yellow), Golden Gate (tawny-yellow), G. C. Schwabe (carmine-rose), Col. Chase (delicate blush), Mrs. C. H. Payne (rose and white), M. Georges Biron (dark chestnut-red), Col. W. B. Smith (old-gold), and Chas. Shrimpton (bright crimson). You must follow the seasonable notes in this paper from time to time. Your plants should now be in 6-inch pots and almost ready for their shift into final pots 9 inches in diameter. Observe replies to others as to stopping the plants. Most of your questions have been already answered.

Chrysanthemums (*J. C. C.*).—Your query is answered by the replies given to others in the present issue.

GARDEN PESTS.

Insects in box (*Antoinette*).—I am very sorry to say that when your box reached me there was nothing in it but a few grains of earth, which I carefully put into some water and allowed to soak, thinking I might possibly find something, but I could not. The box was not broken in any way and was tightly shut.—G. S. S.

Insects and eggs (*R. Neish*).—One of the so-called insects which you sent is one of the centipedes (Geophilus longicornis); this is the long, narrow creature in the box. The other is the grub of one of the ground-beetles (Carabidæ); both are not only harmless, but useful in gardens, as they feed on small grubs, worms, slugs, etc. I cannot tell you what the eggs are—I have never seen them before, and I am trying to hatch them; if I am successful I will tell you what they are.—G. S. S.

Grubs on Lettuce-plants (*G. C. Marshall*).—The grubs you enclose are those of one of the daddy-long-legs or crane-flies (Tipula spec.). They are very common in damp soils, and your plants would probably have been attacked whether you had used the manure or not; they are most destructive pests. You will not be able to kill them with any insecticide, but they may be trapped by laying pieces of turf, board, or brick near plants which they are attacking and looking under them every morning, as they hide under such things after roaming about as they do at night, or they may be caught by burying slices of Turnip, Mangold, Carrot, or Potato an inch or so below the surface. These baits should have a small skewer stuck into each so that they may be the more easily found.—G. S. S.

Rose-leaves diseased (*M. E. C.*).—I expect your Rose-leaves are attacked by the black Vine-weevil (Otiorrhynchus sulcatus). This beetle only feeds at night, hiding itself so securely during the day that it is almost impossible to find it. Before dusk, lay a white sheet under the plant, and after dark take a bright light suddenly into the house. This will probably cause the weevils to fall; if it does not, give the plant a sharp tap or two, which will probably bring them down; or tie small wisps of hay or straw about the stems so that the weevils can creep into them and hide. Search these traps every morning over a white cloth or a pail of water. The grubs of this insect are very destructive, as they feed on the roots of many soft-rooted plants.—G. S. S.

THE MOLE-CRICKET (GRYLLOTALPA VULGARIS).

THIS is one of our most curious insects, both in its form and in its manner of life. Owing to better drainage and cultivation generally it is by no means so common as it used to be, which is very

Mole-cricket one month old (smaller figure) and full grown (natural size).

fortunate, as it is a most destructive insect, feeding on the roots of any plant it may come across. It appears to be much more abundant on the Continent than it is here. Boisduval says: "It is one of the insects most injurious to agriculture and the cultivation of kitchen gardens. There are even places where it is impossible to grow pot-herbs." Another author writes: "Happy are the places where this pest is unknown." These insects are, however, probably commoner than is generally supposed, as they live almost entirely under ground, burrowing and making horizontal galleries like a mole; but they do not throw up heaps of earth as that animal does; their tunnels may be traced by the earth being raised in ridges. They are seldom seen above the ground in the daytime. Mole-crickets have a

Mole-cricket half grown.

great partiality for damp places, such as the banks of ditches and streams, near ponds, and damp, badly-drained land. All sorts of plans have been tried for destroying this insect, but, as usual, there is no "royal road," and the most certain is that of digging out their nests; these are formed near their burrows in June or July. Where they abound, if fresh turves are placed on the ground and kept well watered, they will often creep under them at night, and may be found there in the morning. This plan is said to answer best in April, May, and June. Boiling water poured over their burrows will kill them. In September large holes, 2 feet or 3 feet deep and a foot or so across, should be dug, filled with horse-droppings, and covered with earth. When the frosts begin they will be attracted into the holes by the warmth, and may be easily dug out and destroyed. Moles are their greatest natural enemies. Probably night-feeding birds, and perhaps bats, kill large numbers of them. It is not known what parasites they may have. The mole-cricket is a formidable-looking insect, but it is quite harmless, and may be handled with impunity, as it neither bites nor stings. Its strength is astonishing. According to Rosel, one can move a weight of 6 lb. on a smooth surface. In April or May the males begin courting the females, and they make a peculiar sound in the evening by rubbing the wing-cases together; it is a dull, jarring noise, much resembling the note of the Night Jar, and not the least like the chirp of a grasshopper or cricket. In June or July the female constructs near her burrow, and about 6 inches below the surface, a smooth, bottle-shaped chamber some 2 inches in length, in which she lays 300 or 400 eggs. They are of a yellowish-brown colour and about the size of a Mustard-seed. In the course of a month the young mole-crickets are hatched. They very much resemble their parents in form. For some little time they keep together, feeding on the roots of any plants that are near them; they then separate. They change their skins several times, and at the last change but one they acquire rudimentary wings. When they moult again they appear as perfect insects. This last change generally takes place at the end of the spring. The mole-cricket is one of our largest English insects. When full grown it is about 2 inches in length, and the wings, when expanded, measure 3 inches from tip to tip. The general colour of the insect is a deep, rich brown above, beneath it is somewhat paler. The head is small and pointed, and furnished with a pair of stout, tapering feelers. The fore-body is long, oval, much rounded, and very strong and hard. The body is wide, thick, and soft; on either side near the end is a tapering organ covered with fine, short hairs; these are supposed to act as feelers when the insect runs backwards in its burrow, which it does as easily as it goes forward. The wings are yellowish-white in colour; the upper pair are short, leathery, and much veined, and form wing-covers for the lower pair, which, however, they do not entirely cover. The lower wings are long and delicate, and open like a fan. The three pairs of legs are very strong, and the front pair are very peculiar in their formation, being very strong, short, much-flattened, and deeply toothed; they are admirably adapted for digging. The hindermost pair are formed for jumping, and are nearly three times the length of the front pair. G. S. S.

The Gooseberry-caterpillar.—Many Gooseberry-growers are sorely tried every year by the destruction of the foliage by the dreaded caterpillar, which not only renders the fruit small and flavourless, but greatly weakens growth for another season. Recently a correspondent spoke of the value of a Broad Bean growing by the side of the Gooseberry-bushes for keeping away the pest, but this, I am afraid, is more imaginary than real. I am always troubled more or less every year with this enemy, but always stop its ravages by well dusting the under parts of the trees immediately it appears with an equal quantity of soot and lime, doing it in an upward direction. Of course, a few of the lowermost fruit are soiled by the mixture, but they are generally cleansed again by rains previous to being gathered, and if not they can, if picked when green, be easily washed. I find one liberal dusting generally sufficient to prevent any further progress of the pests. I do not like poisonous insecticides.—J.

Insects injurious (*Kerry*).—Neither of the creatures you enclosed are injurious in gardens; in fact, they are both very useful, as they live on small grubs, worms, slugs, etc. The yellowish-brown one was a centipede (Lithobius forficatus), the other the grub of one of the Carabidæ or ground beetles.

National Tulip Society.—Owing to the late cold weather having kept back the flowers, the show of the National Tulip Society, which had been announced to take place in the Royal Botanic Society's Gardens on May 5th and 6th, has been postponed to the 12th and 13th.

INDOOR PLANTS.

482.—**Glory Peas** (Clianthus).—Sometimes these are called Parrot-beak or bill-flower, and Glory Vines. The one generally alluded to as Glory Pea is Clianthus Dampieri, C. puniceus more usually being called the Parrot's-bill Pea. They are half hardy, evergreen climbing shrubs, exceedingly showy when in bloom, and not difficult of culture after the earlier stages. We remember them as more generally cultivated in the greenhouse, but a warm position outside is preferable for several reasons. "S. 412" would do better to grow them in a cold-house, as the position is exposed. Red-spider and scale are their chief enemies, but the first can be checked by a frequent use of the syringe or a rather moist atmosphere; scale being carefully kept away by care as regards contact with other plants and an early use of some insecticide upon a camel-hair brush as soon as the enemy appears. A turfy loam, and a little well-decayed leaf-soil and a few pieces of broken charcoal make a good compost. Do not pass this through a fine riddle, but use it rough, and pot very firmly. If they can be kept close in a cool-pit or frame and syringed once or twice a day for a couple of weeks after potting, they will make a more favourable start. Clianthus Dampieri is especially impatient of any root disturbance, and often fails from this cause. Either take great care in repotting or else carefully break away the bottom and a few pieces from the sides of the pot, and then shift on into the larger size. March and April are good months for the annual repotting, but before doing this, cut back all lateral growths and slightly shorten the main shoots. You can train as balloon plants, fan-shaped, upon trellis, or upon walls and pillars. They must have a thorough drainage and plenty of water while growing. C. puniceus is the easiest to grow, and may be readily increased from cuttings of the half-ripened wood in a very sandy compost and kept close in a bottom-heat of 65 degs. to 70 degs. C. Dampieri is best raised from seeds, and, owing to its objection to any root disturbance, should be sown in pots at least 5 inches to 6 inches in diameter. Sow this splendid and high-coloured species early in September and pot on the following spring, using a pot 10 inches to 12 inches over, when you will secure a grand show the same summer. Although ir the south and south-western counties both are hardy in a very sheltered position, it will be much safer to raise plants late in the summer and plant them out carefully the following May. They must have a light soil, ample water, and a free drainage.

Propagation of fine-foliaged plants.—I should be much obliged if you would give an article in GARDENING about the propagation and cultivation of fine-foliaged plants, which are suitable for the decoration of the conservatory in winter-time, and can be removed into the open air in summer?—viz., Phormium tenax, Musa Ensete, Dracæna australis, D. indivisa, Yucca, etc.—LEE.

*** A correspondent asks for a few notes upon the propagation and culture of sub-tropicals. We have recently treated upon this, so far as concerns those most easily raised from seeds, and now proceed to give a few hints upon others not so readily obtained. Our first difficulty is in the great number and varied character of suitable subjects. The propagation of Palms, Tree-Ferns, and a few others are scarcely suited to the amateur's conveniences, so that we will dismiss that class entirely. The varieties of Castor-oils, Tobacco-plants, Zeas, Solanums, Wigandias, and others were treated upon in our former article under the heading of "Sub-tropicals from seed," to which we refer readers. The Canna was also so dealt with. A very useful plant is found in Musa Cavendishi, M. Ensete, and M. superba, varieties of the Banana or Plantain-tree. Suckers of these should be taken and grown on in a rich soil, giving plenty of heat and moisture during early spring, and gradually inuring them to open-air treatment by the middle of June. They enjoy a rich and rather open soil. Arundinaria falcata is a very graceful Bamboo-like plant that can be readily increased by division, and when planted in a moist, sheltered position gives a graceful tropical effect. The Bambusas or true Bamboos may be similarly treated, dividing in early spring and growing on in pots until end of May or early June. It is even better to keep them under cover one whole year, and use them for sub-tropical bedding annually afterwards. In a warm and sheltered spot they may stand through a mild winter, but where much exposed are safest when housed. Erythrina Crista-galli, one of the Coral-trees, is very showy. When young growth commences early in spring, they may be rooted freely in a strong moist heat, and if grown on well the first summer, will make useful plants for future use. It is always best to start these under heat and similar conditions as the tuberous-rooted Begonias, turning them out early in June, lifting when growth dies down, and storing beneath the greenhouse bench until early the following spring. Aralia japonica and its variegated forms, often-times known as Fatsias, are also very useful. These are best raised from seed, and if carefully lifted will do well as greenhouse decorative plants during winter. They like plenty of water and a rather stiff, rich loam. Ficus elastica (the India-rubber-plant) was fully treated upon in our issue for February 6th. Ficus Parcelli and F. Brassi are also very useful when used in the same way. Phormium tenax and its varieties are easily grown in a rich loamy compost, and increased by division early in spring, or from seeds sown under glass at mid-summer. Yuccas of all kinds are most suitable, and some of the grand variegated varieties cannot be surpassed for sub-tropical effects. They enjoy a rich loam, and may be readily propagated by root cuttings and offsets. Aloes, especially A. variegata, is very useful and showy. They may be treated similarly to the Yuccas, except for a more open and lighter compost.—P. U.

TREES AND SHRUBS.

Raising Rhododendrons (*Roc*).—We cannot understand your former query being missed. Are you sure you did not overlook it among the numerous answers? We take the utmost care with all queries sent by our readers. Sow seeds early in spring, using a light and sandy compost of peat, and standing in a dark, close place until the seedlings appear. When you can handle them prick off into narrow beds, placing the plants 4 inches apart each way, and finally transplanting them three years hence. You can also layer the plants, which is largely practised by our best nurserymen. Layer the plants towards the end of August or during the early autumn. Make a slanting upward cut half through the branch at a joint, and peg down firmly. Bury the cut part with soil made firm.

Tree-planting on the Queen's Day.—Please advise what trees are suitable for commemorating the Queen's Day? (1) In places where there is plenty of room. (2) In places where room is contracted—such as a small space at back of a house, where only one tree can be put. It should not spread out wide and not grow very quickly. (3) What trees are suitable for planting in a circle, such as that at Hawarden Castle, containing about twenty trees, and the circle may be 20 feet in diameter, and they are about 2 feet apart? They are lofty, but grow in the shape of a Birch-rod or Lombardy Poplar. They are called Lime-trees. Are they a special sort, as Limes usually spread wide out? They grow in sight of Mr. Gladstone's study window. (4) How can we get over the difficulty of June 22nd being an unsuitable time of year for planting?—J.

*** Unfortunately tree-planting in June is out of the question, as vegetation would suffer if the roots were interfered with. Trees could only be moved with safety which had been previously prepared in pots. The idea might be worked out successfully from, say, October to the middle of March. One way of celebrating the record reign would be, and we commend it to your notice—viz., plant useful and beautiful subjects instead of the common and practically useless stuff which is far too plentiful in some gardens. The nurseries to-day contain a larger and better collection of all kinds of plants suitable for garden and park decoration than years ago. Let the year 1897 be characterised as one in which only the best of all kinds of trees, etc., are allowed to find a place in the garden. We are always pleased to give advice to our readers as to the selection of plants, etc., when they furnish us with a few particulars concerning the position of their gardens, nature of soil, etc. With regard to the sorts of trees which might be planted for the purpose named at the head of this note, that is a matter of opinion, and one which might give rise to much discussion. We have not seen the trees in the garden to which you refer, but we have no doubt that they are Lime-trees. The Lime is frequently grown in the manner you describe, especially in gardens where little room is available.

Lime-tree.—In my front garden I have a large Lime-tree, about twelve or fifteen years old, trunk about 1 foot diameter, which shades the ground very much. I wish to prevent it growing this season, and would thank you to inform me of some simple means of doing so? I am told mercury will kill the tree; if so, will you kindly tell me how to apply it, and quantity required? I do not wish to disturb ground this season, but could remove the dead trunk at my leisure.—INQUIRER.

*** As the Lime-tree has outgrown its limits, and you do not care about removing it just now, we should recommend you to cut out the main branches and shorten the smaller growths in order to get more sun into your garden. In the autumn cut the tree down and grub up the old roots. It is not necessary to adopt the means you suggest.

ORCHIDS.

Cœlogyne cristata not flowering (*Amateur Grower*).—A temperature of 45 degs. is rather too low for Cœlogyne cristata during the winter months; probably this, combined with too much water at the root, is the reason why your flower-spikes turn brown and damp off. After the new bulbs are fully made up, gradually reduce the amount of water at the root, and only afford sufficient to prevent the bulbs from shrivelling. Immediately the flower-spikes are seen pushing from the base of the newly-made bulbs it is advisable to place the plants in a temperature of about 55 degs. While the spikes are forming keep the soil just moist; but avoid over-watering the plants, and at the same time do not wet the bloom-spikes, these being liable to rot away if moisture accumulates about them.

Various Orchid queries (*C. S. B.*).—(*a*) Dendrobium cœlogyne generally blooms about October or November. It grows freely in shallow Teak-wood baskets with but a very thin layer of peat and Moss to root in. Suspend the plant well up to the roof-glass on the highest side of the intermediate-house. During its season of growth the plant should be watered each time it becomes dry at the root, but when growth is completed afford but little water, as a long rest is an essential point towards successful cultivation. (*b*) As your plants of Cœlogyne ocellata maxima are not thriving satisfactorily, we would advise you to turn them out of their pots, take away the old soil, and thoroughly wash the roots, afterwards placing each plant in the smallest pots possible, using nothing but clean crocks to fix them firmly. Keep the crocks well moistened and damp well between the pots several times a day, and a slight dewing overhead when the weather is warm and bright will be beneficial. As soon as the young growths and new roots have fairly started, peat and Sphagnum Moss in equal parts may be packed firmly around them in the ordinary manner. During the summer months this species should occupy a light position in the cool-house and in winter may be removed to the intermediate-house. (*c*) The pollen masses of Dendrobium are found hidden under a little cap at the outward point of the column, and the stigma, which is covered with a sticky exudation, is just under the column, near the apex. The flower which is intended to bear the seed should first of all have its pollen carefully removed; this may easily be done with a pointed stick or lead-pencil. Then take the pollen from another flower, which should be a distinct variety, and place it on the stigma of the female parent. A reverse cross may be made by using the pollen taken from the first flower and placing it upon the stigma of the latter, thus effecting a cross both ways. (*d*) Oncidium crispum and O. tigrinum may be

grown either in pots or Teak-wood baskets; both species require the temperature of the Oncidium-house at all times. During the growing season both species require copious waterings, but during the resting period, the latter species especially, should be kept rather dry at the root, otherwise it will fail to produce a full complement of flowers. Oncidium ampliatum should be grown in Teak-wood baskets that may be suspended close up to the roof-glass in a shady corner of the East Indian-house or in the ordinary plant-stove; its cultural requirements as regards watering are identical with the other two species named.

PROPAGATING PENTSTEMONS.

Although these are so readily raised from seed, and a good strain will ensure charming varieties, we cannot be certain of reproducing the exact form and colour of any one favourite by this means. Fortunately they are easily increased from cuttings, and those rooted this season will flower well next year. This makes it an easy matter to secure a considerable number of any one variety that may please, and to ensure a bed of the same for the next season's flowering. Pentstemons may be rooted at any time during June and up to the end of September. Short side growths are the most suitable, and as these would seldom bloom we are able to take them without any sacrifice of future beauty. Prepare them as shown in our cut, and insert in a compost of leaf-soil and turfy loam, passed through

Pentstemon-cutting.

a sieve with a ½-inch mesh. Add a little sand, place ten or twelve cuttings into a 5½-inch pot, and then stand in a cool-frame or pit. If kept partly close they will root more freely. Leave them in the cutting pots all winter should they be struck as late as September. If earlier you may put them farther apart in pots or pans, but it will still be safer to afford the slight protection of a frame until the following April, when they should be turned into the open border, and a rich, well-drained loam provided.

424—**Sweet Pea-seeds eaten by mice.**—If "C. L." steeps the Sweet Pea-seeds in paraffin-oil for a short time before sowing, it will prevent mice or rats from touching the seed, and will in no way injure it. I always do so with mine, and though much troubled by rats they never eat the seed. Occasionally they scratch up one or two seeds, but leave them untouched, and do not molest the rest of the drill.—Roc.

Soft metal wall-tree fasteners.—These are very useful fasteners for wall-trees and climbing plants of all kinds, as they save the use of shreds, which greatly encourage insect pests. They are made in many sizes to suit various plants, and will be welcome by Peach-growers, whilst they last well. No nailing is necessary, and injury to the stem of the tree is avoided, as they expand with the growing wood. They may be obtained from the Bureau of Inventions, Dacre House, Arundel-street, Strand, London.

Carnation Princess May.—This new Malmaison Carnation has immense flowers of good form of deep rich rose, being quite distinct from others of this type of the flower.

GARDEN WORK.*

Conservatory.

Tuberous Begonias have found their way into every conservatory and pretty well every cottage in the country. They are easily raised from seeds, and are not difficult to cultivate, and well-grown plants are certainly very attractive. But they are not likely to find their way in large numbers on to the hawker's barrow; neither the flowers nor foliage will stand rough usage. When properly selected and graded they make beautiful masses in the garden, and they are in many places taking the place of the "Geranium." For the conservatory in summer they are very serviceable if good varieties are grown, and seeds from a good strain are not difficult to obtain. One of our amateur friends has originated a strain of his own, which is now being sought after, but to make a beginning it is necessary to buy a good representative collection of the best varieties and fertilise the blooms. The plants seed so freely there will be no difficulty in raising thousands of plants if required, and the seeds grow freely if sown in heat in February, or if there is no heat, then wait till April or May. We have just pricked off into boxes our early-raised seedlings, and these will be planted out in a specially prepared bed as soon as ready. They are planted out because it saves labour and trouble, and they grow faster out in the bed than if kept in pots. Seedlings seem to like a little to start in, with plenty of sand to keep the compost sweet. The loam used for Begonias should be of the best quality—in fact, anyone aspiring to be in the front rank of cultivators must be particular in the quality of the loam and peat used. I have known men who ignored this, but were compelled afterwards to admit when brought into competition with those who were more particular that the best results cannot be obtained without the best materials. Especially important is it to obtain good peat for Azaleas and Heaths. Unless these plants are well grown it will be better not to attempt their culture—in fact, they will die, unless fairly well potted in the right compost. It will be necessary to use a thin shade over Pelargoniums and Azaleas in flower now to keep the plants in condition as long as possible, but do not use the shade till required, and remove it as soon as it can be spared; regard it, in fact, as a necessary evil. As Roses go out of bloom remove to a cool-house to ripen growth. Those who want own-rooted Roses (and who does not?) will find the young shoots of forced Roses taken off with a heel of older wood root with the greatest certainty in bottom-heat. I generally take them off, prepare them, and then lay them in a bed of moist Cocoa-nut-fibre, where roots form in a few days; they are then potted.

Stove.

Put in more cuttings of Poinsettias. Those who want heads of the scarlet bracts for cutting might, if there is a bare wall at the back of a Melon or other warm-house, plant out a few old plants and train them up the wall. Euphorbia jacquiniæflora is another plant that will pay for such a position, and these two, which are among the brightest and best of our winter-flowering stove subjects, are always in demand. Other winter-flowering plants, such as Begonias of the fibrous-rooted section, Justicias, Thyracanthus rutilans, Pentas carnea, etc., must now have attention and be well grown to get size and strength, without which they will be of no use to flower next winter. Caladiums and other foliage plants will be working up into splendid condition, and must not be shaded heavily, especially in the case of Crotons and Dracænas; a very light shade on hot days will be desirable, but heavy shading left on when not absolutely necessary will be a bar to good colour. The sort of temperature and atmosphere required in the stove at this season is warmth and humidity. Later on, when the growth is completed, the humidity may be reduced, but then most of the winter-flowering plants will be ripening in low pits or houses, where more exposure can be given. Night temperature not less than 65 degs., and if heat-loving subjects are grown, such as Ixoras, 70 degs. will be better.

Ferns under Glass.

These are now making growth fast, and young specimens may be shifted on as more room is required. Those kinds which are usually propagated by division may be divided now. In working up stock of such kinds as Adiantum Farleyense, Williamsi, etc, we usually work away at youngish plants, as there is more vigour in them and they make better and stronger plants in much less time. If a young plant with six or eight crowns is divided we get the same number of good plants in a short time, and if these in turn are grown the same number of crowns are formed, and we can divide again. Thus a large stock is worked up in a comparatively short time. This holds good with all plants usually increased by division. Ferns will require a light shade on bright days now, but Maiden-hairs and other Ferns for the production of fronds for cutting should be grown in a light position and not overshaded. They must not be exposed to bright sunshine during midday; the green colour will be lacking. The roots of Ferns must always be kept moist at this season and through the summer. Do not syringe Maiden-hairs, especially the close-growing varieties, or the young fronds will damp. Small Ferns in thumb and 60 sized pots are much used now for table and room decoration, and a number of these should be provided. All the varieties of Pteris are very lasting and easily grown.

Peaches Ripening.

Do not water Peaches after ripening begins if the highest flavour is required, and a Peach without flavour is no better than a Turnip. Ventilation must also be freely given. It is the sunshine which gives colour, and nothing must be allowed to keep the fruits in the shade. Young growth to be neatly tied in, and any dry hanging leaves to be thrust on one side or pinched off in extreme cases. Fires must still be kept going at night, and in cold, damp weather night temperature 60 degs., air to be given when the thermometer reaches 70 degs.; but when Peaches are ripening the house should never be altogether quite closed.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Window Gardening.

In many suburban districts the window-boxes are now demanding attention. Where many boxes are used there is more character in the display if the boxes are filled in sets instead of being alike, even when the same kind of plants are used. Grouping is more effective, but in all cases plenty of overhanging growth should be employed.

Outdoor Garden.

Keep Roses free from insects and suckers. The practical man scarcely needs a reminder, because he knows that Roses given up to insects and suckers must be in a sorry plight all the season. The stitch in time saves more than the proverbial nine. Stocks and Asters which have been well hardened may go out now. Beds of Rhododendrons will benefit from a mulch of old cow-dung, and the mulch will help any Lilies which may be planted in the bed. Dahlias will now be hardening off in the cold-frames; but the sites should be got ready if not already done. Hollyhocks are now growing freely, and will benefit from a mulch of good manure. Herbaceous Phloxes and Delphiniums will benefit from the same treatment. If fine spikes of Phloxes are required the shoots should be thinned to two or three; but more may be left if a mass of bloom is required. The big-flowered Pansies are taking the place of the old-fashioned circular flowers of the florist, which, I think, is a pity, as there is a refinement about them which is absent from the big gaudy-coloured flowers. In this respect the modern Tufted Pansy is far superior. On hot soils use plenty of cow-manure and raise seedlings. Sow now for next winter's blooming. Finish planting late-blooming Gladioli, and here, also, I would recommend raising seedlings. The seed should be sown in drills. It is getting rather late now, but if I had any seeds left I should sow at once. Get all the bedding-plants into cold-frames to harden. Sow Wallflowers and other hardy plants, both biennial, annual, and perennial. Destroy weeds.

Fruit Garden.

The late Grapes will soon be ready for thinning. Grapes intended to hang as long as possible should be thinned more than when they can be eaten as soon as ripe; but the object in growing late kinds of Grapes is to have a supply all winter; therefore, the berries should not be over-crowded when ripe. It is quite possible now where there are several vineries to have Grapes all the year round. Very often the first crop is taken from pots, and these may be grown in a low lean-to or span-roofed house or pit. Black Hamburgh, all things considered, is the best early black Grape. Foster's Seedling is the most useful white; but if larger berries and bunches are desired, Buckland Sweetwater is a good Grape, and Madresfield is a good Grape to go with it in the second house. Muscats should have a house to themselves if possible, and those who have not heat enough to grow Muscats might try Golden Queen. When well done it is a fine Grape, sets freely, and is a heavy cropper. Gros Colman, Alicante, and Lady Downes are all more or less grown for late use; but the Alicante is the best amateur's Grape, and when well done and ripened the flavour is not bad, though, of course, not equal to Black Hamburgh. Disbud Peaches by degrees. The nights have been cold, and if too much foliage is removed the trees will feel a check. Strawberries ripening under glass must have abundance of air, and the roots kept moist. A few of the early-forced Vicomtesse Thury should be planted out for autumn bearing.

Vegetable Garden.

One of the most important matters now is to keep down weeds, and this is best done by using the hoe freely in fine weather. When the weeds are small an hour's hot sun will destroy them after the roots have been severed. Among the seeds to be sown now are Peas and Broad Beans for August. It scarcely pays to plant Broad Beans after this date; but Marrow Peas may be sown fortnightly from this till the third week in June, and afterwards second-early and early sorts may follow till the middle of July. It is no use to sow later, except the young tops are required for flavouring soups, and for that purpose, if there are surplus seeds, Peas may be sown under glass all winter. The cold nights at the beginning of the cutting season checked the growth of Asparagus a good deal, and therefore, if desired, the cutting may be continued in the case of very strong plants a little later—say a week or two into July; but, as a rule, after the Peas come in there is not the same demand for Asparagus. Tomatoes will soon be plentiful under glass, and to my mind for flavour there are no Tomatoes equal to those forced early under glass. Houses which have been used for bedding-plants should be planted with Tomatoes. The crop will come off in time for wintering the plants in pots in autumn. Tomatoes intended for open-air planting should be hardened off. Get them as strong and sturdy as possible. As the seasons have been lately, it is no use to put out little weakling plants. Sow Turnips, Beet, Chicory. Plant out Leeks, early Celery, and Vegetable Marrows under handlights to be covered at night.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from May 8th to May 15th.

It is rather too early yet to plant out tender things, but we are exposing our bedding-plants as much as possible, and shall begin to plant the hardiest things towards the end of the week. Calceolarias, Asters, Stocks, and the well-hardened "Geraniums" may go out shortly into beds which have been vacant all the winter. Many of our beds are filled with Tulips, Hyacinths, and other spring flowers, and these will wait till the spring show is over. The beds will then be cleared and dressed with charcoal-rubbish which has been passed through a coarse sieve rather liberally, and the plants will start away at once. What little carpet bedding we do follows the late Tulips and Pansies, and it is generally the second week in June before they are planted. It is hardly safe to turn out such things as Alternantheras and Coleuses before the second week in June. As soon as the pits and frames are cleared of the bedding stuff they will be cleared out and washed with hot lime, warm manure placed therein to raise a steady heat, and Melons and Cucumbers planted therein. We draw our main supply of Melons and Cucumbers after July from pits and frames. This gives an opportunity to

get the houses cleaned out for winter Cucumbers and other forced things, such as French Beans, etc. Moved a lot of green and variegated Hollies to make a fresh group in a different part of the grounds. I have moved Hollies at all seasons successfully; but there is no better time than the present, just before the plants break into growth. If the weather should set in hot and dry we shall use the syringe or the hose freely over the foliage towards evening. This is often after a drying day better than a soaking at the roots. Of course the roots will be kept in a moist condition too. Dressed gravel-walks with liquid weed-killer. I have used various things for the purpose, all more or less useful. Salt in some districts is cheaper than anything, and I have used it largely; but it must be used in dry weather to have full effect. The same may be said of sulphuric acid and other weed-killers. Several walks in shady, damp spots have been turned over and a light sprinkling of fresh gravel given on the top, and after rolling the walks have a fresh appearance that will last most of the summer. Thinned late Grapes and examined borders preparatory to giving a top-dressing of artificial manure. Shifted on young Cyclamens sown in autumn. The plants are in a heated pit, and will have a little warmth for a time to get them into growth. When the plants are growing freely they will be moved to cold-frames for the summer. The re-arrangement of the conservatory is often done now, selecting a mild, calm morning, as being better for moving plants about.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

535—**Plants for greenhouse.**—Would you kindly tell me what plants do best in a London greenhouse with due east aspect, no heating? Also, what climbers for the sides and roof? Double glass-roof.—BARONESS.

536—**The best twenty-four true Cactus Dahlias.**—Will any amateur grower give names of the best twenty-four true Cactus Dahlias? Only those that bloom freely on stems thrown well above the foliage (with twisted or pointed petals), as I find many described in growers' catalogues of such habit after many years' trial cannot be relied upon, and only bring disappointment after the expense and labour.—AMATEUR DAHLIA-GROWER, *Chiswick, W.*

537—**Window-boxes**—I have two, 25½ inches by 8 inches and 9¾ inches deep, and one 26 inches by 9¾ inches and 8 inches deep. The aspect is west, getting a fair amount of sun during the day. Could you give me any suggestion of the flowers I should plant in them? I should like them to have flowers as long as possible. I have two or three others, 23 inches by 8 inches, depth 4½ inches. What could I grow in these? We are quite a fortnight later here than the south, so I suppose if I get them in this month it will be soon enough?—AMATEUR.

538—**Plants for stiff soil.**—I have an acre of garden ground of the stiffest loam, next door to a clay, which has been cultivated, attached to a newly-built house. What flowers (annual, biennial, or perennial) can I grow with success in such a soil? Roses planted before Christmas seem to be throwing stray shoots, but I want something besides; the soil is very heavy, and when surface-dry bakes nearly as hard as a brick. I have no leaf-mould, stable-manure or sand. If I had I could work it, but at present must rest content with it as I find it.—W. W., *Lymington.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

539—**Deutzia not flowering well** (*O. C. J.*)—Simply the result of the cold winds, which have been very keen this year.

540—**Carnation pamphlet** (*Miss B.*).—We do not know of any such work. The only book likely to suit you is "The Carnation Manual," to be got from Messrs. Cassell and Co., Ludgate-hill, London, E.C.

541—**Chinese Lantern-plant** (*M. A. Donald*).—Quite hardy and common. Its name is Physalis Alkekengi, and can be procured from any good nurseryman. Look through our advertisement columns.

542—**Flowers for cutting** (*Lilac*).—We have a series of lists of suitable plants for cold and warm greenhouses appearing, also for winter and summer blooming. Please refer to these. The number of subjects are too numerous to repeat often in our correspondence column.

543—**Cloves for decoration** (*J. L. C.*).—If you are alluding to the old Clove Carnations, we would not have stopped them at all. Give a rich and fibrous loam, and do not keep them under glass much longer. Open-air treatment suits them better than coddling in a warm-house.

544—**Hyacinth flowers dwarfed** (*A Constant Reader*).—We can only suggest your bulbs have been kept so dry that they could not obtain sufficient moisture to develop their flower-spikes. You do not give us the least help in the matter by any hint as to your treatment. There appears to be no disease.

545—**Treatment of Cannas** (*Constant Reader*).—The roots of Cannas should be lifted in September and placed in boxes filled with ordinary garden soil, and stored away in a dry position and frost proof until the succeeding March. Placed in the soil thus, they will not become too dry, as this is undesirable.

546—**Diplacus** (*C. L.*).—This plant is well adapted for planting out in a warm border during the summer, or for mixed borders. You can pinch the shoot when it is 6 inches or 8 inches long to encourage a bushy growth. Few greenhouse plants are more satisfactory for the amateur to grow, as it is so easily cultivated.

547—**Unhealthy Vine** (*Novice*).—We cannot tell without specimens. It may be wet, but more likely insect pests on the foliage, red-spider turning the leaves yellow. You say leaves are burnt; we expect this is through drought or bad ventilation, and not moisture. Your temperature is good. We fear your Vines are not strong.

548—**Ice-plant seedlings** (*M. B. P.*).—We would prefer one plant in a pot of the size you name. Use a compost of sandy loam, not broken up too small, and make up about a third of the bulk with broken sandstone, soft bricks, and charcoal. Drain well, give a fairly warm and sunny position (a window will do), and do not overwater.

549—**Puzzled by names** (*A. F., 201*).—We know of no dictionary for the purpose. The flower labelled alba flore-pleno is a double white one, and alba plena grandiflora maculata, a large double white spotted flower. Such a name is, however, very stupid. There are many books on botany. A very good one is Dr. Cooke's "Shilling Manual." Get it through a bookseller.

550—**Neglected Muscat Vines** (*Anxious*).—Our advice is to run up some new canes from the base this season Your old rods will never break now. By so doing you will benefit the Vines and get good fruit and wood; we mean allow one shoot at bottom to grow unchecked for a season, stopping others to give it a chance. See work for week; you will get valuable help from that.

551—**Grapes damping** (*Anxious Inquirer*).—It is difficult to answer your question. You give nothing to work upon—age of Vines, variety planted, indoor or out, any treatment as to what heat, if any, is employed. From small specimen sent it shows lack of vigour, but without particulars we are in the dark. We will gladly help you if we can. There are no insects. Send us further particulars.

552—**Onions** (*R. V. Allesbrook*).—Onions that have been so long in the ground are the side-growths of old bulbs and useless for keeping. They will seed, but are of no value, as seed must be obtained from sound, rested bulbs. They are certainly not spring Onions. These are sown in February or March—hence the name—and are keeping Onions, and must also be sown annually. Yours may be useful for cooking at this season, or using in a green state.

553—**Strawberries eaten by slugs** (*S. Taylor*).—You should well dress ground now with soot between rows. You cannot dust through plants, as the fruit is not yet formed; the slugs do not eat the plants, but the fruit. We fear you have not used gas-lime very freely, or you would have few slugs. If you have plenty of space between, you may mix a little now with the soot, but not if plants are close together. You should lime freely in winter for these pests.

554—**Dracænas for exhibition** (*Exhibitor*).—To obtain a good plant suitable for exhibition next September, cut the top off with about 4 inches of wood, and place in a brisk bottom-heat. Use a 60-sized pot, well drained, and sandy loam and peat are required. When the plant is well rooted and commences to grow, pot it on into a 5-inch pot, using the same mixture of soil, but in a turfy condition. Keep the plant growing in a temperature from 60 degs. to 70 degs., syringing twice a day.

555—**Knobs on Apple-trees** (*J. Green*).—The trees are best treated with the mixture in the winter, and; failing this, they can be sprayed in the summer; but it is a tedious work, often needing repetition, as it is almost impossible to get at all parts of the tree, and one insect left soon breeds hundreds. Your trees are very bad, and almost useless if like wood sent. Our advice in such a case would be to root up trees, burn them, and replant next autumn. Young trees should be cut over at once, removing every bit of dead wood; in fact, it should have been done earlier.

556—**Treatment of Malmaison Carnations** (*Novice*).—Grow your Malmaison Carnations in a cool-pit or frame for a time yet; then afford open-air treatment by entirely removing the lights. Repot next September, and do not attempt to hurry them too much. If you treat your Strawberry-plants as you suggest, and give them a thorough ripening by placing outdoors early in the autumn, they will be good for next year's forcing. Pot them on once more when root bound, and make the compost very firm. No doubt the slugs were in the manure; but a good dressing of salt should have been equally effectual as lime or soot. Get a few lumps of fresh lime, moisten this sufficiently for it to run into a dry powder, and dust over while as hot as the hand can bear; do this early upon a damp morning.

557—**Injurious effects of Primula obconica** (*A Constant Reader of Gardening*).—Primula obconica undoubtedly has a bad effect upon any person at all subject to eczema, and we know of several who are even slightly affected with this troublesome skin disease when the plant is only present and not touched. Still, we have never verified a genuine case of eczema in any person not previously affected, although it would seem to be so in your instance. We sympathise with you, and advise that some medical authority be consulted. Many plants seriously affect some persons, and are quite harmless to others. Lilies, Hyacinths, Violets, and other strongly-perfumed flowers bring on serious illness with some, while the P. obconica and the useful stove Fern, Davallia Mooreana, will affect others with a most intolerable itching and smarting for days after the least contact with its graceful fronds. Even an immediate wash does not prevent the itching from spreading to any part of the person the hands may touch for several hours after. Were it not for this property of P. obconica it would be one of our most useful and popular flowers. You should certainly cease to grow it.

558—**Failure of plants, etc.** (*Whennan*).—Your plants are evidently troubled with a fungus. Ventilation would make no difference, but if kept too dry at the roots the threads of the fungi increase more rapidly. Your system of regular watering cannot be carried out successfully; so much depends upon the subject, its present condition, and the weather. We have noticed the fungi you appear to be troubled with most prevalent upon decaying wooden benches. Repair these, use a fresh compost, and water with judgment instead of regularity. We do not think the oil-stove would have influenced matters at all if it was kept clean and not allowed to smoke. An oil-stove is about the best thing you could use. The seedlings will not damp off if you do not overwater or expose to cold winds. In ventilating it is essential to guard against chilly currents of air.

559—**Carnations from seed** (*C. L.*).—May is the most suitable time for sowing Carnation-seed, and a slight hot-bed or a greenhouse is the best place for germinating the seed. The pans must be well drained and then filled with sandy loam and leaf-soil to within an inch of the top. Make the surface firm and level before sowing. The seed should be scattered evenly over the soil, and then cover slightly with a little of the potting mixture, finely sifted. A piece of glass should be laid on the top of the pan. When the seedlings are well up the glass should be removed and the pan placed in an airy position close to the glass. As soon as the seedlings are large enough to handle prick them out into boxes or beds, previously prepared by digging in some rotten manure. Water should be allowed when necessary to assist them in their growth. By the end of September the plants will be large enough to transplant in their permanent positions in beds or borders, or they may be used for pot culture. They will all flower the following season.

560—**Poet's Narcissus not flowering.**—I have in my garden a good many bulbs of Narcissus poeticus, which I planted at the foot of a tree two or three years ago, but though undisturbed, they never flower. The soil is light and rather poor. Would you kindly tell me if they would be better divided, and also if they would succeed better in a rich, moist soil?—A. M. S.

*** *A rich and rather moist soil would suit them better, but any root disturbance is likely to delay flowering. Mulch them with thoroughly rotted stable-manure next winter, and give a good soaking of liquid manure now. Probably your bulbs are insufficiently strong to bloom.*

561—**Vines failing.**—Would you kindly tell me the cause of Vine-bunches running to nothing just before they come into flower? The Vines were started last week in February, night temperature 50 degs., day 60 degs., but would run up, with sun-heat, to 85 degs. or 90 degs. They came away all right, and showed a good many bunches, but now, instead of coming in flower, the bunches dwindle away to nothing. The house is very low and span-roof; border at back of house 18 inches from the glass, at highest part 5 feet from glass. Some mornings the foliage would be as if newly-syringed, although it got no syringing the night before. I may mention that the border was taken out to the depth of 2 feet and no roots were discovered. It was filled in again with road-grit, wood-ashes, turfy loam, and a little cow-dung. They were neglected very much last autumn.—ANXIOUS.

*** *Your Vines are deficient in roots, and loss of bunches follow; it is not caused by the condensed moisture. The Vines have not had time to make new roots yet. Our advice is do not allow too many shoots—say, one from each spur. Endeavour to get the growth as well grown and ripened this year as possible. You will get fruit then. Your house is not good, but with care you would succeed. Treat the Vines as well as if they were bearing freely. Past neglect is the result of failure now.*

562—**Distance for Peas.**—In a recent GARDENING I read: "When Peas are about 2 inches high, thin them out to 2 inches or 3 inches apart." In another part: "Plant the Peas regularly 3 inches apart" Kindly say which mode you recommend? A light soil. My gardener sows them thickly and leaves them so. What bad results ensue?—OPEN MIND.

*** *So much depends upon variety. Give Marrows or tall kinds the most room. You are quite right as to thinning. Three inches for Marrow Peas is none too wide; that would be a good general distance, not closer. Let yours be that distance apart.*

563—**Use of fresh stable-manure.**—"E. T." would be obliged for information as to the best use for stable-manure at this time? Would it be possible to make a Mushroom-bed so early, and if so, how should this be done? I shall not get the manure after this month.

*** *Fresh stable-manure may be used in a short time if placed in bulk and allowed to heat before using for the Mushroom-bed. You could with advantage make beds at this season in the open, as you may use fresher material and in greater quantities. Beds made now will give a full summer yield.*

564—**India-rubber-plant-cuttings.**—How long will it take to root cuttings of Ficus elastica in bottom-heat of 70 degs. or 80 degs.?—J. J., *Jamestown.*

*** *From two to three months before they can... safely.*

565—**Good-keeping Potato.**—Will... state in GARDENING what kind of Potato... during the winter, when to plant, and ... Subsoil, stiff clay.—POTATOES.

*** *Plant them at any time, and... haulm shows signs of ripening... varieties we hesitate to name any... master, Magnum Bonum, Whi... and Quality do well with us. ... what varieties succeed best in ...*

566—**Are painted pots injurious?**—I have some pots that I have painted outside for use in a sitting-room. Would Lantanas be injured if planted in them? I am told that the porosity of ordinary pots is beneficial. I think, however, that keeping the top soil well stirred might keep the plants healthy, notwithstanding the paint. —J. L.

*** *We cannot recommend pots that are not slightly porous; but if you supply a really efficient drainage the matter of benefit is to a great extent overcome.*

567—**Treatment of young Vine.**—I have a Vine in a propagator 6 inches high, which I have raised from an eye this spring. I want to plant it in an outside border and train it through a hole 18 inches from the ground into a greenhouse. When may I do this, and how should the young Vine be treated?—B. W.

*** *Keep the Vine in a pot for this season, and replant when ripened. Give a rich loamy compost, with plenty of water and drainage.*

568—**Lemon Thyme.**—Can you tell me in your next issue what "Lemontine" or "Lemon Thyme" is? Several gardeners I have inquired of know nothing about it; but there is such a thing I know, as we formerly had it in our garden. Should it correctly be "Lemontine" or "Lemon Thyme?" And what is the botanical name?—W. B. L.

*** *The proper name is Lemon Thyme or Thymus citriodorus. Any florist or market gardener can supply. Look through our advertisement columns. We are much surprised any gardener should be ignorant of so important and familiar a herb.*

569—**Lemon-scented Cytisus.**—Will you kindly tell me how I am to treat this plant? When I bought it it was full of bloom and buds. The blossom has now fallen off, and the buds look dry and have not come out. The leaves at the base are falling off. Does it require greenhouse heat, or will it live without, and flower next year? I keep it in a warm room, and water it whenever the soil at the top is dry. At first it flagged once or twice, and then I increased the amount of watering. I have no greenhouse, and only a frame for a few spring and summer months. Temperature of room, 60 degs.—A. D. R.

*** *Either you have not afforded your plant enough water, or it has been given too cold. It is a very thirsty subject. Stand the pot into a pan of water occasionally, and so secure a thorough soaking. We presume you mean Cytisus fragrans, which should thrive in your warm room.*

570—**Peach-trees suddenly dying.**—Three Peach-trees in my house have suddenly died without any apparent cause. The trees flowered well, and looked perfectly healthy. Fruits formed, and were about size of a small Walnut. Leaves then began to shrivel, and are now dropping off, and trees evidently dying. Two other trees in same house, trained on back wall, seem all right, and have fruited well. All have had same treatment, and no heat given unless night was frosty. The trees have borne well for the past six years, and none are old trees. My gardener professes to be ignorant of the cause. Can you enlighten me in your answers in next issue?—KEY-DELL.

*** *Your trees have fallen a prey to canker. This often occurs to the Peach and Nectarine under glass. There is no remedy but to root out. Replant in new soil early next autumn. The canker is caused by the budding or grafting. The one outgrows the other, and so far there is no remedy. Probably you will find the stem all decayed. This has been going on for a year or two, and collapse comes when trees are called upon for increased energy.*

571—**Kainit for Potatoes.**—I am recommended to try this manure for Potatoes. Can you inform me if this may be used in the same way as nitrate of soda, when the Potatoes are in growth, or should it have been dug in at time of planting? Soil, rather poor and lightly manured. Please also say quantity to be used per rod?—R SAYERS.

*** *Kainit should not be used like nitrate of soda, but applied to soil in the autumn at the rate of 5 cwt. to 6 cwt. per acre; but it is best used, say, in half that quantity with guano or fish-manure. As a surface-dressing in spring we do not advise it. The proportions given are for strong root crops and poor soil. If used now, we advise other foods in addition, but for Potatoes growing would prefer other quicker-acting manures.*

572—**Propagating Wallflowers.**—I have a few fine dark Wallflowers which I should like to get a stock of. Can I strike cuttings from them this season to bloom next? If so, when is the best time for taking them? And should they be put under glass or in the open?—C. S. J.

*** *Take the young shoots that have not flowered with a heel—that is, a little of the old wood or stem. They strike sooner in cold-frames or under hand-glasses; but you can strike in a border under south wall. Use grit freely, or road sand. Make the cuttings quite firm.*

573—**Stove for greenhouse.**—I have a greenhouse, 10 feet by 8 feet, which I desire heating for the purpose of growing half-a-dozen Tomato-plants, and also to preserve the various plants I have now from future frost, and shall be much obliged if you will kindly state in your next issue what kind of stove, with piping, you consider best and most suitable for the purpose, and which will require less attention as regards feeding.—READER, *Eccles.*

*** *There are several good stoves advertised in our columns and which would suit your purpose. For obvious reasons we really cannot recommend one over the other. Remember the size of your house when making a choice. So small a structure would not need a powerful [illegible] We prefer one of the hot-water radiators to any [illegible] being a more uniform and less parching heat.*

[illegible] a lobata.—What sort of plant is Mina [illegible] I have sown it in a temperature of 60 degs. in the [illegible] correct? When shall I prick it off, and will [illegible] during the summer?—C. L.

[illegible] this is very satisfactory out-of-doors, but [illegible] it, however. Sow the seed at once in [illegible] course harden the plants off and [illegible], as you are late in starting. It [illegible] bed and trained over feathery [illegible] fence. Warmth, sunshine, and

575—**Cutting back Genistas.**—My Genistas are in full bloom now, and are very branching. When and how much should they be cut back, and can I strike what I cut off? Is it necessary to put them back into the greenhouse after they have done flowering to ripen, or can they be cooled off and put out-of-doors?—COUNTESS.

*** *Cut back the Genistas rather closely, supply plenty of water, and repot if very much root-bound. Keep them under glass, but treat with a cool and moist temperature.*

576—**Pruning Deutzias.**—I have been pruning my Deutzias, and have cut away most of the old wood, but find a great many of the young shoots come out on top of the old wood. So I have been afraid to touch these, except where they are very crowded, and these I have cut out altogether. There are five or six long new shoots which flowered all the way up, grown this year, and are much higher than the rest of the plant. Ought I to cut these back, or remove them?—COUNTESS.

*** *Cut back the Deutzias to the ground-line—that is, so far as older wood is concerned, and you must afford all the support possible to sucker-like shoots springing from the crown or base. Give plenty of water, and help with weak liquid-manures.*

577—**Treatment of grafted trees.**—I have just regrafted the principal branches of a large standard Apple-tree, leaving about a quarter of the tree still standing. Ought I to cut the remaining boughs off, or will the shock to the tree be lessened if I leave them on for a year? They are full of blossom-buds.—REV. B. W.

*** *It is quite immaterial; but your graft would grow stronger if receiving the whole of the sap. On the other hand, you may as well get a little fruit this year.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A. D. R.*—Erica hyemalis; it is of little use in the amateur's hands after flowering.——*John Champion.*—Polygala Dalmaiseana.——*Roc.*—Piptanthus nepalensis.——*J. M. Jones.*—Lung-wort (Pulmonaria officinalis) ——*M. C. Woodward.*—The shrub with hanging flowers is Forsythia viridissima, the other is Ribes aureum. It is, however, always best to number the plants sent and keep a duplicate, then there can be no mistake. ——*Mr. A. Feest.*—1, Coleus, but cannot name—there are so many florists' varieties so much alike; 2, Too poor a specimen; 3, Selaginella Kraussiana; 4, Isolepis gracilis. ——*C. B. Coney.*—Dendrobium Pierardi.——*X. Y.*—Mackaya bella.——*A. M., Ireland.*—Allium neapolitanum. ——*Acme.*—Doronicum plantagineum, a very hardy, free-growing plant. Divide up the plants you have in the autumn. Fresh soil will be beneficial. They are very cheap, and easily raised by dividing the roots.——*R. C. G.* 1, Celsia arcturus; 2, Specimen withered.——*E. M.*—Rubus spectabilis.——*Constant Reader.*—1, Berberis aristata; 2, Amelanchier canadensis; 4, Veronica Traversi; 5, Variegated Weigela; 6, Veronica (please send flowers); 7, Send fruit or flowers; 8, Forsythia viridissima.——*W. Allen.*—1, Strobilanthes Dyerianus; 2, Coronilla Emerus; 3, Campanula glomerata; 4, Rhamnus Alaternus; 5, Abies Pinsapo var. glauca; 6, Cupressus torulosa.——*H. White.* —North American Bird Cherry (Cerasus virginiana).—— *Gwendolen.*—1, One of the white-flowered Daffodils, probably Snowdrop; 2, Narcissus Leedsi; 3, Cynosure; 4, Campernelle Jonquil; the yellow flower is the Leopard's Bane (Doronicum plantagineum); the other is Myosotis dissitiflora.——*Utica.*—Your flowers were very badly labelled. We do not name florists' flowers, but one of the Fuchsias (3) was Earl of Beaconsfield. 1, Cydonia or Pyrus japonica.——*W. S. (?), Achnashellagh.*—Picea Nordmanniana.——*F. C. Page.*—1, Primula Cashmeriana; 2, Aubrietia Campbelli; 3, Kerria japonica fl.-pl. (Double Jew's Mallow); 4, Juniperus chinensis (Chinese Juniper); 5, Primula farinosa (Bird's-eye Primrose).

LAW.

Compensation to tenants of allotment gardens.—Thirty allotment gardens of about 600 square yards each are held by working men on yearly tenancies, paying rent half yearly. The land has been utilised for allotments about nine years, but the owner now intends making a street through the middle and selling the rest of the land for building purposes. Can the allotment holders claim compensation for arbours, greenhouses, garden frames, fruit-trees, flowers, etc., and if so, how? These gardens are not cultivated as market gardens.—RICHARDIA.

*** If there be no written agreements of tenancy providing compensation on quitting, the only practicable way of claiming will be under the Allotments and Cottage Gardens Compensation for Crops Act, 1887. Under this Act the allotment tenants may claim compensation for all growing crops, including fruit growing on the holdings in the ordinary course of cultivation, and for fruit-trees and fruit-bushes planted with the previous written consent of the landlord, and for labour expended upon, and for manure applied to the holding since the taking of the last crop therefrom in anticipation of a future crop. But unless the written consent of the landlord was obtained no compensation can be obtained for the fruit-trees and fruit-bushes themselves, although compensation may be claimed for growing fruit if the tenancy terminated in the summer months. The tenants will have no claim for compensation for any of the other things mentioned, although they may remove the arbours, greenhouses, garden frames, etc., that they have put up. If the landlord refuses to make such compensation as the tenants are entitled to they may apply to the justices, who will appoint a person to settle the amount of the compensation due from the landlord. Strictly speaking the tenants may not remove either fruit-trees or flowers, but under the circumstances the landlord will probably not object to such removal. The tenants are entitled to the usual notice to quit.

A gardener's notice to quit (*George Hill*).—You were engaged as a gardener at a weekly wage and a cottage found. In the absence of any definite agreement as to notice you are entitled to a month's notice and no more, and as you occupy the house as a condition of your service and pay no rent, you are not a tenant in the legal sense. When your service expires, so does your right to occupy the cottage, and so you will have to leave the cottage at the expiration of the month's notice you have received to determine the service. As your employer told you were at liberty to take out of the garden anything you had put in it, you may take away the fruit-trees you planted. Indeed, as these were planted in nursery rows and were not permanently set out, you could remove these without anyone's permission. You do not seem to have any claim for compensation.

Notice to quit garden.—I have about three quarters of an acre of garden and I let half of it to my brother-in-law, who grew upon it a few flowers for sale. He died last July and I gave his sister half a year's notice to quit, serving the notice last Michaelmas. He made no will, and she refuses to quit, as she alleges she is entitled to a year's notice under the Market Gardeners' Compensation Act. My brother-in-law worked four days a week for a gentleman. Was the notice good?—H. B.

*** The mere cultivation of flowers for sale did not constitute the holding a market garden, and the sister is not entitled to a year's notice. Half a year's notice, expiring with a year of tenancy, was all that was necessary, and if the year of tenancy began at Ladyday the notice was a good notice. If she refuses to give up possession you should apply to the justices to give you possession of the ground.

POULTRY.

Crooked breasts in Fowls and their prevention (*Dindon*).—You are to be thanked for calling attention to what you rightly say "is a growing evil," and it is to be hoped that poultry-keepers generally will soon take steps to remedy the present state of things, so far as table Fowls are concerned, and particularly the larger kinds, Turkeys, Dorkings, and the like. Crooked breasts may be due to two causes: first, hereditary influence; secondly, to roosting on extremely narrow perches whilst the breastbone is nothing more than mere gristle, and is therefore easily bent in any direction. There are many people who hold to the opinion that a third cause is to be found in high perches. The birds have to descend almost perpendicularly in cramped houses, and as a result fall with considerable force against the threshold or the ground, and this, it is said, causes the breastbone to become bent. With regard to the first-mentioned cause, there is something to be said for and against. Some nine years since I bought a batch of dark Brahma pullets, one of which proved a marvellous layer and was kept for stock purposes until she was seven years old. Her breast was as twisted a specimen as one would meet with in a day's journey, but, strange to say, although I bred both cockerels and pullets from her, their breasts were as straight as a ruler. In 1896 I bought a brown Leghorn cockerel of a noted laying strain for change of blood; his breast was as bad as that of the hen just mentioned. It might be said that such a bird should have been returned; this would have been the case had he belonged to a table-breed, but seeing that I wanted laying stock the case was different. At the same time, I am bound to say I should never have sent out such a bird without notifying his defects before he was sent from home.

Now for the result. His pullets are splendid layers, and since October last have done good service, but the majority are blemished just as their sire, so far as the breastbone is concerned. Here the blemish is undoubtedly hereditary, and I have no doubt, in my own mind, that for some generations the breeder has ignored every defect from the show or table standpoint in order that he might perpetuate his strain of layers. In the case of the Brahma, the breed itself does not often take to perches freely, and the crooked breast may have been more the outcome of an accident than early roosting. Early roosting on narrow perches, is, to my thinking, the most fertile cause of crooked breasts. Go into poultry-houses wherever you like you will find perches about half the thickness of a man's wrist, and upon these the heavy chickens have to pass nearly one-half their time at an age when their bones can be trained to any shape preferred without any trouble. The third cause is generally the outcome of the second, as small perches alone would be fixed in the roof of a high building. Wherever table Fowls are bred, there none but straight-breasted birds should be used for stock purposes, and this is more important now than ever, as determined efforts are being made to advance the poultry industry in these islands. A crooked-breast Turkey, Dorking, or Indian Game is depreciated nearly 50 per cent by this blemish alone, since a crooked breast must of necessity diminish the quantity of the best meat, and at the same time add to the difficulties of the carver. I am sorry I have been unable to attend to your request until now.—Doulting.

Ducks not hatching (*Gardener*). — Either your hen sat badly or the germs were extremely weak. It is an unusual case for Ducklings to be alive in the shell thirty-eight days after the eggs were set, and we can only account for the mystery by suggesting that for the first week or so the hen sat very loosely, so that no progress whatever was made towards hatching.

Death of hens (*T. H.*).—Your hens are, we fear, suffering from Fowl cholera, a disease for which there is practically no cure, since if the Fowls temporarily recover there is a probability that they will soon develop symptoms of paralysis. Your best plan is to kill and bury the ailing specimens as soon as the disease appears, and thoroughly disinfect your runs before you start afresh. Insanitary surroundings are often the precursor of attacks of this kind.

Death of Fowl (*K. B.*).—There is nothing mysterious about the death of your Fowl. The organs sent were filled with that cheese-like deposit which denotes the existence of scrofula, the worst form of liver disease. It is scarcely correct to say the disease is contagious, but it is far worse in being hereditary, and once it gets in a yard it is difficult to eradicate, unless breeding is stopped. I therefore advise you to kill and bury your present stock in quicklime; and in future do not use Indian Corn as a food.—Doulting.

Lame cock (*L. E. L.*).—Your best plan is to poultice the bird's foot immediately, and use any material in the poultice which has a local reputation for drawing out offensive matter. We think it extremely likely that the bird has stepped on some thorn or glass, and so the foot has become poisoned. He should be made to sleep on matting or straw, and the foot should be well bandaged, or he will strip off the poultice if left alone.

BEES.

SEASONABLE WORK IN THE APIARY.

Until honey is being brought into the hive in quantity feeding should be continued, that the increase of population be not checked, the main point now being to get the hives as full of Bees as possible. What is call brood-spreading is practised by many Bee-keepers to encourage the increase of population in frame hives. The brood-nest is contracted by the division boards, so that the space may be crowded with Bees. Honey cells of the comb containing least brood are uncapped, and the comb placed between the other two. The hives are examined once a week and the combs containing least brood are placed in the centre of the brood-nest, and this is continued until all the combs but the two outside ones are filled with brood in different stages of development. The division boards are then moved, and a frame of empty comb is inserted in the midst of the brood-nest as often as the last one introduced is occupied. By this means the Bees are encouraged to rear immense numbers of young, and a weak hive quickly becomes strong. In this operation it is necessary to be very careful. There must be a sufficient number of Bees in the hive to cover each comb, as it is inserted, otherwise there is the risk of the brood becoming chilled during cold nights.

Surplus honey.—As soon as the stock hive is full of Bees and brood, and honey is being gathered freely, a box crate of sections should be placed upon it, care being taken to cover up warmly with two or three thicknesses of carpet or flannel, that no heat may escape. When the work in these sections is in full swing, the crate containing them may be raised, and another crate of sections placed between it and the stock hive. The Bees will build comb and store honey in these while the honey in the upper ones is ripening, and thus much time will be saved, for by the time the honey in the top section is sealed and ready for removal the under ones will have considerably advanced, and should the honey flow continue, another crate of sections can be introduced. In good seasons Bees will gather honey much faster than it can be ripened in the hive, and often swarm through not being provided with sufficient super space. As soon as the section-honey is sealed over each crate of sections should be removed, for if left on the hive long the beautiful whiteness of the comb becomes marred, and loses much of its inviting appearance and marketable value.

Stocking frame-hives.—A frame-hive can be stocked with Bees from a skep at this season in the following manner: Having cut a hole in the quilt that covers the frames, a little less in diameter than the bottom of the skep, place the skep over the opening. The Bees are obliged to pass through the frame-hive in carrying on their work, and as the population increases, and the skep becomes full of Bees, work is commenced in the frame-hive. In a few weeks the latter becomes full of Bees, when the skep can be removed, the Bees it contains driven out and joined to those in the frame-hive, and, after placing a piece of queen-excluder over the hole in the quilt, the skep should be replaced above it. In three weeks all the brood in the skep will have matured, and the skep will probably be full of honey, when it should be removed. If it be wished to still retain the skep as a stock-hive, proceed as above, and when the frame-hives becomes full of Bees and brood, place the skep by the side of the frame-hive. It is of little moment which hive the queen is in, providing that the one that is left queenless contains eggs or brood, that the Bees of that hive may be enabled to raise a queen for themselves, otherwise a queen cell may be inserted. The frame-hives must be furnished with comb foundation before being brought into use. S. S. G.

Flowers for Bees.—Many Bee-keepers would tell your correspondent, "M. M.," that to grow flowers for Bees is a waste of time and money unless you can sow acres. No doubt this is so from their point of view, but not from mine. I do not propose to give cultural details, as these can be found in the pages of Gardening. My own practice is to buy all my seeds by weight, and as the seeds I mention below are very cheap and easy to grow, while a very small quantity of each makes a good display, a large piece of vacant ground around the hives can be made quite a picture, besides being useful to the Bees in producing honey and pollen. We have a very large choice among our annuals. Among the flowers of the above class I would mention first the Mignonette—for Mignonette honey is of the finest quality in flavour and fragrance, and most delightful it is—Nasturtiums, Phacelia, Clarkia, Nemophila, Calliopsis, Aralia, Cornflower, Gillia, Sunflower, Limnanthes, Eutoca, Balsam, Alyssum, and a score of others, to say nothing of perennials, which are more economical than annuals, as when once planted they will bloom year after year and require very little attention. Among the most useful to Bees of this class of plant are: Borage, Anchusa, Lupins, Geum, Nicotiana (Sweet-scented Tobacco), Campanulas, Myosotis (Forget-me-nots), and a host of others too numerous to name, though I must not forget the great honey-plant, Echinops sphærocephalus, which is all the rage in America at present, and is a favourable flower for Bees. I do not agree with your correspondent "E. A. H." by saying that Lime-blossom is of doubtful utility, as it intoxicates the Bees. Some years when white Clover is a failure we always look out for the Lime-trees to bloom, and the honey is splendid, both in colour and flavour. As for saying that it intoxicates the Bees—well, that is a bit of romance.—E. Gould, *Havilland Hall Farm, Guernsey.*

BIRDS.

Bullfinch losing its feathers (*M. F. S. Sharpe*).—You have probably been feeding your bird on food of too heating and stimulating a character, such as an undue proportion of Hemp-seed, causing it to become surfeited. This will often cause the feathers about the head to drop away. Again, the loss of feathers may arise from general debility or from lack of some of the elements needful to the elaboration of new feathers at moulting-time. In the latter case, six or eight drops of Parrish's Chemical Food in each ounce of the bird's drinking-water will be found very beneficial, or a little bread-and-milk may be given in which has been mixed a pinch of flowers of sulphur. Where this complaint is due to debility a more generous diet than the patient has been accustomed to will often effect a cure. Birds, while moulting, consume a much larger quantity of food than they do at other times. If there is eruption upon the head after the feathers fall away, a very slight anointing with scalded lard, a drop of Castor-oil, with purity of food and cleanliness, will usually bring about a cure. Many people give their Bullfinches too much Hemp-seed, which causes the plumage to assume a dark appearance, and in some instances to become entirely black. The proper diet for them is Rape-seed of the smaller kind, and Canary-seed, in equal proportions, and a few seeds of Hemp added daily. A rusty nail in the drinking-water is good at all times in keeping cage-birds in health.—S. S. G.

Wheezing Bullfinch (*C. G.*).—Coughing and wheezing in cage-birds are often caused through their being kept in hot, dry, and exhausted air, their cages being hung on the upper part of the walls of living rooms, and where gas is burned. Exposure to wet or cold draughts of air will also cause an inflammatory affection of the bronchial tubes. In treating the complaint an even, moist temperature of not less than 60 degs. Fahr. should be maintained, and a few drops of cod-liver-oil, added to a little soaked bread, be given to the sufferer, and some old mortar (powdered), with the grit sand at the bottom of the cage. For green food Dandelion and Water Cress are suitable. An old remedy for coughing and sneezing in cage-birds is an infusion of the leaves of the Common Speedwell (which have a small degree of astringency), with a little honey added, a supply of this pectoral tea being given the patient daily for a week or so. As a general diet give chiefly Canary and small summer Rape-seed, and but a limited quantity of Hemp.

Buying Budgerigars (*A. Storey*).—Any good bird shop would keep this pretty bird. We do not recommend individual traders, but there should be no difficulty about the matter.

Robinson *v.* Ward, Lock, & Co. (Ltd.)—The Plaintiff in the above action, the Proprietor and Editor of "Gardening Illustrated," on the 2nd day of April inst., obtained from His Lordship, Mr. Justice Kekewich, in the Chief Division of the High Court of Justice, an order perpetually restraining the Defendants from printing, publishing, selling, or disposing of, and from advertising, offering, or exposing for sale any Newspaper, Periodical, or Publication by the name of "Gardening Illustrated," or by any other name so similar to "Gardening Illustrated," as to induce the public to believe that such Newspaper, Periodical, or Publication is the paper published by the Plaintiff.

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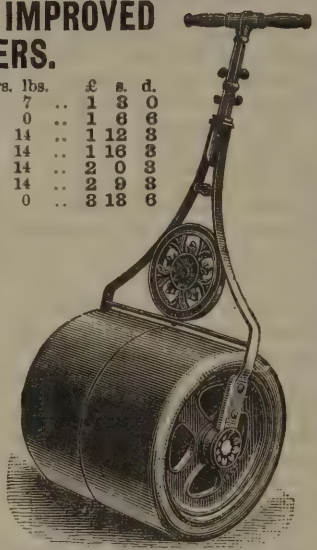

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GARDENING ILLUSTRATED.

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OUTDOOR PLANTS.

THE LAWN.

A PIECE of close, clean, level lawn, well laid and well kept—as soft and rich in colour as a bit of green velvet—is one of the finest ornaments in any garden, and is sure to meet with admiration, even by those who care but little for flowers or fine foliage. It is not a very difficult matter to obtain such a piece of Grass, but the ground must be properly prepared beforehand, and the turf employed must be fairly free from weeds in the first place, and be kept clean afterwards, as well as regularly rolled, cut, etc.

Lawns are usually made by laying down turf cut from an old meadow, a common, or the like, and if the Grass is fairly free from weeds, and of a fine, short, close description, this is, perhaps, the simplest and best manner of going to work. The usual and proper size of such "turves" is 3 feet long by 1 foot broad, so that as nearly as possible ninety-one are required to lay a rod of ground, or about 14,500 to the acre. A common price for the turves—near London, at any rate—is about 5s. per 100 on the ground, or 10s. to 12s. cut and delivered, but when they have to be carted from a distance the cost is increased, of course.

The ground must be well dug and carefully levelled before laying the turf, and the surface be raked fine and level. Manure is seldom required, but if the ground is very poor or rubbishy it may be advisable to employ a little, and in this case there is nothing better than ordinary road-sweepings or scrapings. Where hollow places have been filled up this must be done quite firmly or time allowed for the soil to become thoroughly settled, as it will sink much more in such places than where only the top "spit" has been disturbed. Lay the turves down carefully, getting the edges to meet neatly, and then rolling and beating them down to an even level. The beater is useful for bringing down any "bumps," etc., but its too free or unnecessary use is decidedly injurious. In dry weather a good watering should be given almost daily until the Grass has taken root. Where the ground is low and damp it should be drained, and in such cases an excellent plan is to put down 2 inches or so of fresh, sifted coal-ashes first, and to lay the turf on this. Turf may be thus laid in almost any season except in hot, dry summer weather and during sharp frost.

But where good, clean turf of the required quality cannot be obtained, or only at an excessive rate, the only alternative is to sow down the plot with the best Grass-seed, of which a suitable mixture of several fine varieties is sold by all respectable seedsmen. The best times for sowing are the end of March or early part of April, and again in the early autumn, towards the end of September or early in October. If the ground is properly prepared, the seed good, and the young Grass is well looked after when up, there will be a nice close sward, if not a very strong one, by the end of June or July from seed sown at the end of March.

Prepare the ground exactly as for laying turf, but the surface must be raked very fine and level, and a sprinkling of soot or bone-meal, just to give the young plants a start, is advisable if possible. Sow the seed evenly, at the rate of about 4 bushels to the acre, and rake it in well, or cover with a light sifting of good sandy soil. Protect from birds by means of netting, black-cotton, or scarecrows, and in very dry weather water it occasionally with a fine rose, but do not set a foot on the ground—if it can be avoided—until the Grass is well up. Cut it the first time or two with a light and very sharp scythe, and afterwards with the machine set rather high. It is a great mistake, in all cases, to set a machine too low, as it cuts the life out of the Grass, and lays the roots bare. Again, do not sweep up or remove the cuttings, unless very heavy, but let them remain, especially in hot weather, when they shelter and nourish the turf.

The beauty of a lawn raised from good clean seed is the almost perfect absence of weeds, while it is very seldom that really clean turf can be obtained. B. C. R.

SHOW AND FANCY DAHLIAS FOR EXHIBITION.

CONTINUING this article from GARDENING, February 13th, page 706, my readers should have their Dahlias raised now, or procured from a reliable source, and potted into 5-inch or 6-inch pots. The site for them must be open, as overhanging trees will draw up the shoots and soon spoil any chance for large blooms. The plants will benefit by being kept in a cold-frame till the first week of June, and then all danger of frost will be over. Plant them out then without injuring the ball, and place a strong stake to each plant. About the middle of July give a good coat of stable-manure, as a mulch on the surface. This will keep the soil moist and greatly increase the size of blooms. By this time they will be growing freely, and three shoots should be taken up to provide blooms. Nip out all others, and the three taken up should be each securely tied to a stake, or they will suffer from wind. When the blooms begin to open they must be protected from rain. The best way is to have zinc covers, 6 inches across and 4 inches deep, with glass tops. Any tinsmith can make the covers, and a joiner will cut the glass. The glass is secured on the top of the zinc cover by three strips of lead about 2 inches long and ¼ inch broad, soldered on to the top of the round zinc covers. It bends easily to hold the glass. To secure the covers in their place over the flower, get a strong stake, and with a saw cut down the top about 3 inches, and in this incision place the zinc cover and push the stake in the ground to the required height. Flowers which have been covered in this way are much brighter in colour than those which have not. Give a few good soakings of liquid-manure during the growing season, which will greatly increase the size of flowers. The following is a list of fancy Dahlias: Gaiety, Duchess of Albany, Emin Pasha, Henry Eckford, Lottie Eckford, John Cooper, Prince Henry, S. Mortimer, Rev. J. B. M. Camm, Peacock, George Barns, Mrs. Saunders, and Matthew Campbell. I gave a list of show Dahlias in my first article. The above are all fancy kinds, and although I have grown nearly all the varieties in cultivation, they are the best. W. H. P.

Wardhead House, Stewarton.

THE VALUE OF MULCHING AND TOP-DRESSING.

THERE are not a few instances, I fear, where from lack of thought or from the want of experience, many people have very erroneous ideas, not only as to what kind of material is most suitable for different crops and the proper season to apply it, but so limited is their knowledge of the matter that we not unfrequently find them confused as to the difference between mulching and top-dressing. No doubt, too, there are others who, having never given the subject much thought, look upon them as practically the same, and consider all that is necessary is to afford a good dressing of manure to all crops alike, and at a season when it is found most convenient to do such work. Such a haphazard way of doing this cannot be expected to be always followed by the best results; indeed, it may prove most harmful in some cases, and the practice cannot be too freely condemned. For the guidance of those whom it may interest I will briefly point out some of the advantages to be gained when the work is carried out in a methodical manner, and at the same time show how, when misapplied, mulchings are calculated to do more harm than good. Taking

VEGETABLES

first. Turn to Asparagus, as the beds have recently claimed attention in preparing them for the coming season. Where this crop is growing in a shallow soil resting on gravel it will be necessary to add frequent top-dressings to sustain the crowns in a strong condition, to produce serviceable grass from year to year. With such soils it is a good practice to give the beds a dressing of decayed manure as early as possible in the autumn. This, after exposure during the following months, will be in a good condition to prick into the surface soil the following February. This should be followed with a layer of soil 2 inches or 3 inches thick, for which purpose I know nothing better than that which accumulates in the potting-shed, which, when the rubbish is removed, will form not only a rich rooting medium, but owing to its varied composition, it is not likely to bake hard by the action of the sun after rain at a season when it is necessary to provide a loose soil to allow the grass to push through freely. When the work is carried out on these lines both mulching and top-dressing will prove of great assistance to one of the most valuable vegetables we have when growing under unfavourable conditions, and are very different from the heavy mulching of manure which is often applied. Take the same vegetable growing in different soil and in a colder district. How often do we see the beds covered to a great thickness with farmyard manure with the supposed double purpose of enriching the soil and protecting the crowns from frost! Here a great mistake is made, as the plants are more likely to suffer in a naturally

cold, wet soil, made more so by the addition of a mass of saturated manure which neither sun nor air can penetrate, than is ever likely to occur from frost, let it be ever so severe. The injurious effects of such treatment during winter are further increased by allowing the dressing to remain later in the season, often to the middle or end of March, when on its removal the soil will be found cold and soddened and in a very different condition from that which has had full exposure to sun and air. Soil in such a condition when suddenly exposed to the drying winds and bright sunshine of March becomes very hard and ungenial for the grass to push through, and it is almost impossible to get it into a fine condition under such treatment, while, owing to the cold state of the ground, growth is considerably retarded, which is not desirable with this crop. This is a form of mulching which should be avoided, but which, nevertheless, is often adopted with this vegetable. With Peas mulching is very beneficial in hot, dry seasons, but the mistake is often made in not applying it until the ground has become quite dry. Certainly it may be afforded then with advantage if a copious watering is given afterwards, as this would wash the manurial properties down to the roots, and the strong material will assist in keeping the soil in a moist condition. Where, however, both labour and water are scarce, it is better to mulch such crops early in the season or immediately after rain; if applied when the soil is parched and not watered afterwards, it is likely to prevent to some extent any rain that might follow from entering the soil, and thus do more harm than good. If we turn to

FRUIT,

we have not far to look before we can find cases where mulching is misapplied, particularly with Strawberries. How often do we find the plants after being exhausted by carrying a full crop of fruit, left for months before they receive attention, very often until the ground is sufficiently frozen to wheel manure on with less trouble. This dressing will often lie for weeks in a frozen state, after which very little fertilising properties will remain to benefit the plants, and which must either be dug into the ground (a bad practice with this fruit) or wheeled off again, resulting in much labour with little or no good results. By all means mulch Strawberry plantations, but do so as soon as possible after the fruit is gathered, and at a time when rain may be expected, so that none of the feeding properties are lost by evaporation, and the plants are greatly assisted with a dressing of manure at this season to build up strong crowns for the production of the following season's crop. Placing long, strawy litter between the plants in May has the double advantage of keeping the soil moist and the fruit clean, but with the earliest supplies I find it retards the first gathering considerably. If earliness is a desideratum I would advise that it should not be used, so that the sun may act directly on the soil when its influence will greatly assist the early ripening of the fruit, particularly so if the fruits rest on pieces of slate or tiles. Newly-planted fruit-trees often receive a mulching of manure directly after planting, but this is not to be recommended in all cases, as, owing to the consistency of the material preventing after-access of air, the soil is apt to become unsuited for healthy root-action. Bracken or any other light material of a porous nature is much to be preferred for such a purpose, as this will ward off frost without soddening the soil. Fruit-trees should only be mulched with manure when in a full bearing condition, to assist in bringing the crop to perfection; applied at any other time it is likely to produce strong growth and unfruitfulness. If we turn to

THE FLOWER GARDEN,

we find that some of the plants are greatly assisted during a season of drought by giving a surface-dressing of leaf-mould or spent Mushroom manure, particularly such as Begonias, Fuchsias, Pansies, Calceolarias, etc., while if the same treatment was afforded Pelargoniums, there is a danger of encouraging foliage at the expense of bloom. So I could go on enumerating instances where mulching and top-dressing are likely to prove beneficial or the opposite, but sufficient probably have been quoted to show how greatly they vary both in composition and application, and it is only by a close study of the nature of different soils and the requirements of different plants under certain climatic conditions that they can be put to the proper use at the right season. R.

AN AMATEUR GARDENER'S SUCCESS.

I WAS thinking of planting a Wistaria outside the porch, training up by the door and then round by the eave—would it grow too rapidly? As there is on one part of the cottage near the door a bare wall, I planted close to the wall some large-flowered Convolvulus which in a short time covered the whole of it up to the roof; outside that I put Roses, Clematises, and the Tuberous-rooted Tropæolum. In the summer all flower well, and contrasting colours have a pretty effect. On the south side (the gable end) are two other Clematises—a white one, very large flowered, and a pale blue, with several Roses. One, Climbing Bessie Johnson, is lovely, and an almost perpetual bloomer; Earl Dufferin, Gloire de Dijon, Cheshunt Hybrid, and another one, very dark, whose name I forget. They have covered the wall, though not many years planted. A Virginian Creeper runs round the windows, and some seeds of Canary Creeper, that dropped at the roots, grew up amongst them. I do not know how it was, but the more flowers I cut the more seemed to come. I used to keep all the soapsuds and dilute it with water, then threw it at the roots, and occasionally syringed the whole plants with it. I had no green-fly. I think it must be owing to the suds.

With regard to raising Roses, I read the account in an American paper, and resolved to try it. I made a trench as for Celery in the end of September, 1895, adding some silver-sand, and making it very firm in the bottom, then took the cuttings, inserting them about 3 inches apart in the form of a triangle (thus .·.), covering them with wide-mouthed glass bottles, such as confectioners have in their windows (the top of the bottles should be on a level with the surrounding earth); then drew the clay closely round them at the sides, leaving the glass at top uncovered to get the sunlight, and leaving them alone till May, when I found all, except one, rooted, and they have remained healthy and are doing well. I have been a subscriber to GARDENING for many years, and have derived much benefit from it. I note its weekly directions, and am glad to say I am very successful in growing both flowers and vegetables. Can you tell me if there is anything that will save Carrots from being eat away by a tiny white maggot? For years I cannot succeed in growing them; they come up and appear to do well, when the leaves begin to fade, and on inspection myriads of little white maggots are formed in them. I have tried everything I could think of, but in vain. All the other vegetables do well. I have some Egyptian Tree Onions (perennial), the bulbs of which form on the top, and not at the root. They die down to the ground every winter, but appear very early in the year, even in frost and snow.

AN AMATEUR.

*** Yours is a most interesting letter, and we are glad you appreciate our paper. It is very evident you are a true lover of flowers, and we are by no means surprised at your success. You will find the common Blue Passion-flower about the best for your purpose. The Wistaria will not grow too strong. It will be better to change your crop, seeing the ground is so infested with the Carrot-grub. Lime and soot are a great check to this pest, but if you turn the ground over a few times and cease to grow root crops for a couple of seasons the grub will gradually disappear. We have printed the little note about window flowers in winter elsewhere.

Phlox setacea grandiflora.—This is a large-flowered variety of the type. The flowers are also of a distinct shade, not so vivid and bright as in some forms, but very pleasing and effective. Like all others of its tribe, it makes a capital rock garden plant, but is benefited by partial shade or a rather moist spot in which to root. On the level ground where the soil does does not dry so rapidly the forms of P. setacea also do well.

THE KITCHEN GARDEN.

SPOILING ASPARAGUS.

MAY I be allowed once more to protest against the foolish and wasteful practice of blanching Asparagus? A well-blanched bundle looks very pretty, I admit, but that is all that can be said for it. The blanched part is hard and practically uneatable, while every atom of the green part that has been exposed to light and air is not only eatable, but deliciously tender and finely-flavoured. No blanched Asparagus for me, and except that some customers insist on having it blanched, it is a thing I would never do. Salt, it is well known, proves an admirable and most nutritious dressing for this delicious vegetable, but nitrate of soda is better. A light sprinkling of this valuable fertiliser applied just before rain towards the end of March or early in April quickly promotes an extremely vigorous growth and affords an abundant supply of extra fine and stout "grass." I can strongly recommend its use, either alone or in conjunction with a somewhat smaller allowance of common salt than usual. It is quite unnecessary to bank up Asparagus beds in the manner that used to be considered indispensable; in fact, under ordinary circumstances they are much better made on the level, the ground being well and deeply dug and manured previous to planting, of course. Raised beds are only advisable where the soil is naturally heavy or damp and cold.

B. C. R.

Leeks.—Early-sown Leeks of the Lyon type should now be forward enough for turning out and planting in trenches got out as advised some time ago. Potted-up plants must be planted with a trowel and as deeply as may be, to allow of a good length of blanched stem, and the same object may be attained with those that have not been potted off from the seed-boxes or pans, by using a large dibble and making rather deep holes, dropping the plants into these so that only the tips of the tallest leaves appear above the surface. Only a little soil, just enough to cover the roots, should be allowed to run into the holes at planting-time, as the holes will fill up gradually through the action of the rain, or, if this does not occur, the soil may be closed in round the plants later on, when the hearts have come above the level. I find that plants treated in this way will, if reasonable care be used in planting, equal those which have been potted up singly for a time before planting out. Early Leeks are of little use unless well grown, and with a view to this they should be planted at least 1 foot apart, and 18 inches from row to row. Grown at these distances apart, and with due attention paid to supplying water when necessary, the produce should be of tender texture and mild flavour. A cool soil best suits the plants, and as they do not object to slight shade, it will be well to select a shady position in those gardens where the soil is of a hot and burning nature during the summer.—T.

Celery and Celeriac. — Celery-plants which are required for use from mid-August to the end of September will now be hardened off ready for planting, and this should be done at once, for should the plants get big and the roots much interlocked before planting takes place, bolting will most certainly follow. I have had ample proof in past years that well-hardened plants are quite impervious to any frost likely to occur after this date, so there is no need to put the work off any longer on account of the weather, provided the soil is in good condition for planting. I advise that this should be done in single rows, allowing from 10 inches to 12 inches for each plant. Only sufficient plants to cover the demand during the period mentioned above should be put out from this early lot, as those from the main sowing will be much better suited for providing the later supplies. Water the plants well home as planting proceeds, and shade, if necessary, for a few days with a double thickness of fish-net, which may remain stretched across the trench night and day until fresh root-action is set up, when it may be entirely removed. Celeriac should be planted in rich soil on the flat, and, as the roots can hardly be grown too big, the plants must have ample room. Nothing less than 15 inches from

plant to plant will be sufficient to grow good juicy roots. Watering must be well attended to in the early stages of growth; liquid-manure is of great assistance, and a slight mulch is advisable later on.—T.

TOMATOES IN POTS.

With a few simple instructions the amateur can grow the Tomato well. As pot culture is one of the most successful modes of culture, I will confine my note mostly to this, and the best means of securing a crop in small houses, as shown in the illustration. This is a good form of house, but as many amateurs have to make the best of what they have got, I shall not dwell upon the structure in which the plants grow, but mostly on their culture. To ensure a profitable crop many growers fail to raise healthy plants. Others who purchase do not always secure the best kinds, and, as the plants can be raised so cheaply with only a little warmth, it

Tomatoes in a greenhouse.

is best to get a good variety and raise one's own plants if a quantity is required. Quite as good crops, it must be remembered, may be secured by planting out as in pots, providing the roots have not too much space or too rich soil, as with either of these there is gross leafage. On the other hand, I have seen amateurs get grand crops from plants where attention was paid to the soil and the roots were curbed. Such plants, in my opinion, produce a heavier weight of fruit than those in pots, unless the pot-plants have ample care in the way of food and moisture.

Stopping and thinning.

To get Tomatoes from June to the end of the year, or say October, sowing will have been done before this; though it is not late to sow now for what may be termed a summer crop, as many amateurs have not got their houses at liberty till June, when the winter plants are in the open. I will note a

Simple method of raising plants.

Of course this more closely concerns those with only a small house, or who have not the best means to get early plants. By sowing three seeds in a 3-inch pot, placing at the warmest part of the house, either on shelves or over the flue or hot-water pipes, the plants soon show above the soil. A light, sandy compost made fairly firm is most suitable. The seeds should be sown about ½ inch under the surface, and the latter made as fine as possible to assist germination. As soon as the plants are a few inches high, say 3 inches, remove to a shelf near the glass, as it is important to keep them dwarf from the start, and remove the two weakest—that is, destroy them to give the one left the whole space. This plant will be ready in three weeks to transfer to pots two sizes larger, and in another three weeks will be large enough to plant out in the bed or fruiting pots, boxes, or whatever mode of culture is given. I am aware amateurs at times plant the seedlings direct out of the seed-pots. I do not advise it, as unless the best culture is given, if there is excess of moisture, or the fruiting-pots are some distance from the glass, there are failures. The plants go off or get leggy, and the grower's troubles begin. It is far better to get a strong plant and of good size before planting. I omitted to mention that in the frame culture of seed-plants much the same routine may be observed. I am not a strong advocate for much heat for young plants; providing there is sufficient to effect germination, 60 degs. is ample at the start, as hardy grown plants give the best return. We have now come to

Planting out.

It is immaterial whether pots or boxes be used, which curb the roots. If pots, grand crops may be obtained in a 10-inch pot. Of course, much larger ones may be employed, but beware of overdoing the space. At the time of penning this note we have grand crops in 8-inch pots carrying 8 lb. to 10 lb. of fruit, some ripe (6th of May). This is to show that large pots are not needed; but I should add with summer fruiters one can give more space still. If I had my choice I would not exceed 12-inch pots. One plant in each, grown as a cordon—that is, to a single stem up the roof, if possible—is sufficient, as in this position more light is secured.

The soil for the fruiting plants should be good, but avoid manures. A little bone-meal or spent Mushroom-manure may with advantage be mixed with ordinary garden soil, but what is termed maiden loam—that is, turfy soil never previously used for any plant—is quite enough to build up a sturdy growth. Manures can follow when fruit is set freely—not before; and here let me add that amateurs are too good to their plants at the start. They give food and get leaves in return. After plenty of fruit is set one can give liquid-manure or a fertiliser freely.

When planting use ample drainage in the pots. Plant firmly and leave at least 2 inches of space at the surface to give water. We ram our soil at planting to get a short growth, and in heavy soil the addition of a fourth part of old mortar-rubble, wood-ashes, or burnt refuse is beneficial to the plants. Many advise growing the plants near pipes or the heating structure. I avoid it in every way possible, as though such means may give the plants a little help at the start, it is injurious at a later stage when fruiting.

After-treatment.

The culture now is simple. Train to one stem, stop all side shoots hard, unless these show flowers at the first joint, then stop to that, but it is well to leave the lower shoots. Those near the pot may be given a little more freedom so as to secure a few joints at the base. In stopping these, if flowers show, endeavour to get the first show and stop hard afterwards. These will push out bloom at most joints up the stem, and in dull weather it may be well to fertilise. Do this about midday. Keep the house freely ventilated, and always from May to October allow a little air on top ventilators at night. The temperature may run up freely by sun-heat, 60 degs. to 65 degs. being enough at night in the best part of the season. I do not advise syringing overhead, but it is well to thoroughly damp all parts of the house at least twice a day. There will be less disease if the advice concerning air, feeding, and moisture is observed. If plants become diseased badly it is best to burn them and renew the crop. White-fly is troublesome at times. This may be kept down by fumigating lightly every ten days, doing the work in the evening and using more moisture in the house. I do not advise hard cutting of foliage; a little may be removed at times, but the plant must have sufficient to perfect the fruit. G. Wythes.

Growing Cucumbers and Melons.—Would you kindly give me a little information on growing Cucumbers and Melons, as I have got a couple of frames 6 feet in length? The plants I have are nearly ready for planting out, and I should feel very much obliged if you could direct me how to treat them as regards fruiting and pruning as clear and distinctly as possible? —Anxious.

*** You will get much help by reading the "Garden Work" for each week in this journal. Cucumbers need plenty of heat and moisture, very little ventilation, and ample shade. For instance, in frames so much depends upon aspect of frame as to opening and closing, and always damp over after a fine day. Avoid draughts. Pinch top of shoots to make plenty of wood, and never let plants bear all fruits that set. Feed with liquid-manure, and plant in light soil to which bone-meal or old fine mortar-rubble or wood-ashes may be added. With ample heat and moisture there will be few insect pests and plenty of fruit. Give at least 60 degs. to 65 degs. at night to obtain this. Cover glass with mats. Melons like a stiff soil, and need much the same culture, but more air; also flowers to be fertilised, and from two to four fruits on a plant. Close early, but do not shade, and give moisture except when plants are in bloom. Avoid rich soil or food at the start, and make soil firm at planting. The same heat is needed as for Cucumbers, but no shade, and feed when fruit is swelling.

Tomato Rouge Chemin.—The popularity this variety enjoys for market seems pretty manifest on the north side of London, where in some of the huge market-garden establishments it is grown literally by hundreds of thousands. House after house, all of great area, may be found full of plants about 3 feet in height, either planted out and comparatively close together, or in pots standing much closer than where planted out. If from 2 lb. to 3 lb. of fruit be obtained from each plant, the result is very satisfactory. Great quantities are being gathered already and realise fine prices. The variety is so distinct that it is readily recognised by its broad, flattish leafage. Spot or any other form of disease is rare, but in the case of put-out plants the soil, in spite of the usual manurial assistance, seems to become exhausted after the third season.—A.

FRUIT.

PEAR BEURRE SUPERFIN.

All who have ever given this variety a fair trial invariably form a high opinion of its merits. It is one of the very few Pears that seems to do well everywhere and under a variety of conditions. Trees are to be met with, and I have also grown them in the form of cordons, pyramids, bushes, low standards, horizontally trained, and as palmette verriers. In each and every case it is only the fault of the season if a failure to fruit takes place, as it is only rarely that they do not flower freely enough. On the Quince-stock the growth is moderately strong and, it need hardly be added, also the most productive, but for real service give me trees on the Pear-stock. Particularly handsome pyramids, 9 feet and upwards in height, can soon be had in the case of trees on the natural stock, and I have observed that the low-stemmed orchard trees, when not unduly pruned, also assume a pyramidal form somewhat after the habit of Pitmaston Duchess. Grand horizontally and fan-shaped wall-trees can be had with the aid of the Pear-stock, and for clothing the blank, sunny ends of houses and outbuildings Beurré Superfin has few equals. I would recommend the Quince only as a stock for this variety when garden or wall space is much limited. On the Quince, too, the trees sometimes become stunted, and the fruit is then liable to crack badly.

An autumn Pear (Beurré Superfin).

In order to have this variety at its best as far as size and appearance are concerned, wall culture must be resorted to. Fruit gathered from wall-trees is moderately large and clear-skinned, the fruit when ripe being buttery, also very juicy and pleasantly flavoured. That obtained from standard trees is usually much covered by russet, but the quality is remarkably good, even better than in the case of that gathered from wall trees. The period of ripening is September and October, the season in late districts extending well into November. It keeps a very long time without being actually fit to eat, but those who may be fortunate enough this year to have a heavy crop of Beurré Superfin ought to try what can be done towards hastening the ripening of some early gathered fruit and retarding a portion of that collected at the proper time, so as to prolong the supply as long as possible. Placing Pears, the seeds of which are only just commencing to change colour, in a box or drawer in a warm kitchen or heated house hastens ripening considerably, while if the later fruit is also stored in drawers or boxes and not subjected to heat, it will ripen perfectly, the colour and flavour being improved.

One of the characteristics of the Pear under notice is the fleshy knob at the base of fruit or point of union with the stalk. This is well shown in one of the fruits in the representation accompanying these notes. I.

THE GOLDEN PIPPIN AND ITS VARIETIES.

The Golden Pippin is a widely-known and still highly-esteemed dessert Apple, though not so largely grown as formerly. Many of the trees which produced fruit of such excellent quality in years gone by are now falling into decay, and growers do not as a rule replace them, owing no doubt to the difficulty in finding a market for the fruit on account of its small size. The Golden Pippin used to be grown very extensively in Herefordshire and other counties, and many fine old trees are still to be found which crop well, but, unfortunately, buyers will hardly look at the fruit, and it is to be feared that many bushels find their way to the cider mill solely from this cause. This is to be regretted, for the individual fruits, though small, are very sweet and juicy, possessing a fine sprightly flavour peculiarly their own. If the merits of this beautiful little Apple were only more fully recognised a demand would again arise for it, and it would be as eagerly sought after for the dessert as it used to be many years ago, and would again find favour with connoisseurs of British-grown fruits. There are a number of varieties of this Apple, and it also rejoices in a great many synonyms. Many of these varieties bear so close a resemblance to the original that they hardly deserve a distinctive appellation. They possess the high flavour of the type, and the only distinction is a very slight difference in the shape of the fruit. On the other hand there are a few distinct varieties, one of which is a bud sport from the original, and I think I am correct in stating the others to be seedlings raised from the old Golden Pippin. The first of these is

The Summer Golden Pippin, which ripens about the end of August. This is one of the richest flavoured early Apples grown, and it attains a fair size. It has a pale yellow skin, dotted evenly all over with the usual russet-coloured spots so characteristic of the Golden Pippin. I have had no experience with it as a standard, but as a pyramid or bush it is an abundant bearer, and I can highly recommend it as an early dessert Apple. The next to be considered is

Franklin's Golden Pippin.—This variety is supposed to have been introduced into England about the beginning of the present century from America. It is very much like the foregoing in appearance, perhaps a little more conical in shape, and when thoroughly ripe is then delicious. Tomtits are very fond of this Apple. The fruit keeps well and does not shrivel. It is an excellent dessert Apple, and one or more trees should find a place in private collections.

Hughes' Golden Pippin is more flattened than the last-mentioned, and of a deeper colour. It is similarly flavoured, quite equal to it in every respect, and keeps a month or so longer. The tree is not perhaps quite such a robust grower as the preceding variety, but as a bush on the Paradise-stock it crops well. As a standard it bears regularly heavy crops, and I have seen the branches literally laden with the golden-yellow fruits.

Pitmaston Golden Pippin is a variety of Worcestershire origin, supposed to have been raised between seventy and eighty years ago. This has the roughest skin of the lot, and sometimes there are excrescences or warts growing out on one side of the fruit. It has the same rich flavour, but on the whole it is scarcely so good an Apple as those previously mentioned. As a standard on the Crab it is exceedingly prolific, but rather shy on the Paradise. Its season is from November to February.

Pine Golden Pippin is one of the handsomest of the race, it being more regularly formed and it has a very beautiful skin, light brown or russet-coloured, with the usual dots or specks interspersed all over the surface. When shaded by the foliage the colour is more golden, with less russet on the skin. It is a highly-flavoured Apple of most excellent quality, but is not a long keeper, its proper season being October. The tree bears well, but I have no experience of it as a standard. I well remember the late Dr. Bull, of Hereford, some few years ago showing me a dish of this variety that had been sent him by a friend, and I thought they were the handsomest Apples I had ever seen, so symmetrically formed and beautifully coloured were they.

Scarlet Golden Pippin, as its name denotes, has a certain amount of colour on the sunny side of the fruits, this varying according to the position the tree occupies. It is a very pretty fruit, and originated in Scotland as a sport from the old Golden Pippin. In flavour, size of fruit, and general productiveness it is similar to the parent. Grown as a standard and well exposed to the sun, the fruits attain a more brilliant colour than they do when grown in a garden on a bush. It is a good dessert Apple, and should be in every collection. The fruit keeps in good condition well into the spring.

The old Golden Pippin is a small fruit, conical in form, regularly formed, with a yellow skin, golden on the sunny side, dotted over with russety specks, with a speck of black sometimes interspersed here and there on fruits gathered from old trees. On younger trees this slight blemish is absent.

What may be termed the spurious varieties are all seedlings from the type, and bear fruits, some smaller and some slightly larger, rather more flattened in shape, with skins of the same colour, and the flavour identically the same. Many of them have local names, while others are named after the raisers.

A.

Summer pruning of cordon fruit-trees (*J. L. D.*).—You will note the article in question advises root pruning or lifting every three or four years. This checks gross growth and does away with so much pruning or stopping. 1, Young shoots should be pinched regularly from June to August—not one stopping in July—say, when from 4 inches to 6 inches long. Rubbing off useless wood will do away with thick spurs. Some trees make less wood. Do not pinch backward shoots, but treat these later. This shows necessity of frequently going over the trees. 2, Fruit spurs that are pinched need only be thinned out every two or three years, when they get crowded. 3, Liquid manure may be used freely from time fruit is set to the finish. Give it often, but, say, three parts water to one of pure liquid from pigs or stables. In winter trees will like stronger doses. You will find a mulch of short litter of much help. It retains the food given and encourages surface roots.

Trollius napellifolius is among the finest of border perennials at the present time, and the globular blossoms, of a fine clear yellow, are both large in size and abundantly produced. The plant grows about 2 feet high, and in a large group is certainly very effective.

TREES AND SHRUBS.

THE JUNE BERRY (AMELANCHIER CANADENSIS).

This has become a very popular tree of late years, and is frequently sent to this office for name. It is certainly one of the finest of early-blooming trees, and is not nearly so well known as it deserves to be. In a wild state it occurs from Hudson's Bay south to Florida, and west to Nebraska and the Indian territory. The wood is very hard, heavy, and strong—as might be expected from a tree spread over so wide a geographical area. The June Berry varies considerably in size and habit. Under favourable conditions it attains a height of 40 feet. The effect of a fine specimen in spring, with its mantle of snowy-white blossoms, and in autumn with the rich golden-yellow of the decaying leaves, can easily be imagined. The fruits, which are of a purple colour, are collected in immense quantities on the Upper Peace River and form quite an article of food and trade. The June Berry is perfectly hardy in this country. It is easily propagated either from seeds or by grafting on the Apple-stock. At its northern limits the ground is frozen for the greater part of the year. A. vulgaris is not strictly British, but may almost be accounted as such, having been introduced from the Continent some 300 years ago.

The June Berry (Amelanchier canadensis).

Escallonia macrantha dying.—In Gardening of April 31st, in a note (page 110) on Escallonia macrantha, I find "It is one of the best of a very attractive genus of plants, and also one of the hardiest." I wish to observe on this note that, lovely as the shrub is, and generally vigorous in growth, it is subject in this latitude—at all events, in my grounds and in those of my neighbours—to a sudden and total paralysis and death. The glossy green leaves turn yellow when the plant is apparently in the flower of its age, say, ten or twelve years old, and 4 feet to 6 feet high; then, on cutting through a stem, one finds it brown and dead. I wish that you or some of your readers could assign a cause and prescribe a remedy for this disease. It is quite independent of cold and has nothing to do with frost. Only the last week, and at the close of a winter almost entirely free from frost, two of my Escallonias have died suddenly, and this last week I have cleared them away. I can only conjecture that after certain years of healthy life their roots get to an unhealthy subsoil, but, if you can kindly make room for this letter, perhaps someone may turn a light on this obscure subject.—H. G. A.

TRANSPLANTING EVERGREENS.

Amateurs are often perplexed as to the best time of year for transplanting evergreens. Now to all such I would say that during this present month of April and to the end of the first week in May is the very best time in the whole year in which to do all such work. With ordinary care during that period they can be moved without any fear of loss, the genial showers of rain and night dews generally experienced then being of material assistance in keeping the foliage fresh and thus helping the plants to start into rapid root-action. In the autumn of the year the vital powers of evergreens are at a much lower ebb, and they have the winter with its hard frosts and scathing winds to contend with, and also each day then the earth is losing its warmth, whereas in April the temperature is continually rising, and all vegetation is waking to new life and strength. The great point in the successful transplanting of evergreens is to lift them carefully so as to preserve all the roots possible, and especially the fibry portions of them, which are essential for keeping the plants alive till they are able to form other feeders. Not only is it necessary to lift carefully and preserve rootlets, but they must also be kept from drying, which can only be done by covering them and the ball of earth during the transit of the plants to the place they are destined to occupy. A wet garden-mat is as good as anything to lay over or wrap round the roots; but, previous to putting it on, it is a good plan to syringe or sprinkle the ball of earth around the roots with water, as then the earth and the roots will keep damp for a long time. That the plants may be out of the ground for as short a period as possible, the holes for their reception in new quarters should be dug before they are lifted, as then there is no delay, and they can be removed and dropped into their new places and the roots be covered up with soil at once. In the digging out of the holes the soil should be broken up deeply, as it often happens that there is what is called a hard "pan" below, which, if not disturbed, is impervious to the roots of plants, and it is impossible that they can thrive if these cannot set, and not only should the holes be deeply dug, but they should be large, that the roots may be spread out properly at full length, instead of being doubled up and crippled for want of room, as is sometimes the case. In placing the trees or shrubs in position in the holes, the roots should be kept so high that the collar of the tree or shrub may be on a level with the surface soil around it, and with the roots arranged in the way just referred to the filling in with the soil may commence. Before this work proceeds far a heavy watering should be given, which will wash the earth into any cavities that may exist under the roots, as the filling up of any such spaces is of the utmost importance to the after welfare of the subjects in hand. If the shrubs or trees happen to be of large size it is a good plan whilst planting to slightly sway them to and fro, so that the wet, puddled soil may draw under and in amongst the roots, after which it should be left for awhile to subside, when the remainder of the earth may be shovelled in and made firm by the feet. The next thing is to mulch the surface of the soil heavily over with long straw-manure. If this be done, it is the greatest help that can be afforded to newly-transplanted shrubs, etc., as it not only maintains an equable temperature in the ground, but prevents evaporation, and thus conserves the earth's moisture and enables the roots to take care of themselves. What interferes more than anything else with newly-moved shrubs and trees, and prevents them from becoming quickly established, is wind-waving, which causes a perpetual strain and destroys the young root-fibres as soon as they form. To guard against this is, therefore, a matter of consequence, and to this end the steadying of the stems should meet with early attention. There are several ways in which this may be done, but the most secure is by the use of three long, stout poles or stakes to each plant, which poles should be placed tripod fashion, with the stoutest ends in the ground and the points brought together at the top so as to meet the main stem of the tree or shrub about half-way up. To prevent chafing, it is necessary to protect the trunk or branch where they meet by binding around the bark some soft hay or old carpet, when the stakes may be securely tied, and the shrub or tree be kept perfectly steady. Stout galvanised wire used in a similar manner to the poles, and made fast to stakes in the ground, answers the purpose equally as well, and is neater and better on lawns where the plants come into view. For trees or shrubs of a small size, a single stake to each is sufficient if driven well into the ground, in doing which care should be taken to steer clear of the roots.

H. B.

CHRYSANTHEMUMS.

"Pinching" Chrysanthemums (*J. Wilson*).—The object of pinching Chrysanthemums is to make late varieties produce their buds earlier than they would do naturally, and by the same practice, only at a different time, early sorts are made to produce buds later than when developed naturally. For ordinary decorative uses it is unnecessary to pinch out the points of the shoots at all, as for home displays the grower generally prefers a long and continuous flowering period, and for this reason, early, semi-early, mid-season, and late sorts are, as a rule, those selected. It is for exhibition purposes that the grower should have recourse to the practice of pinching, and by this it should be understood just the points only of each shoot should be taken out, and the resulting growths taken up to produce the necessary buds. It is because many of the late sorts as well as many of the semi-early kinds are invaluable for exhibition that these means are taken, as by their adoption these specially good varieties may be had in perfection during the November show time. Some varieties are pinched because it is known they give better results from second crown-buds—*i.e.*, the second lot of buds which show on the shoots after being pinched or after breaking naturally, and such flowers may be had by pinching the plants early in the year and retaining second crown-buds. If such varieties were left to their natural course of growth the chances are the first crown-buds would be far too late for the same purpose. Hence the value of knowing the varieties needing this treatment and when to carry it out. Those plants intended for the hardy flower border do not need this treatment. The only reason for pinching them—and this is really unnecessary—is to make them extra bushy, thereby getting a greater number of smaller flowers than would be the case if left to a natural system of growth. We think you will find this a full explanation to your query.

Chrysanthemums (*Constant Reader*).—The questions in your list are answered in replies this week and others of recent issues. Lady Laurance and Mrs. Beale are the same variety. Pearl Beauty and Boule d'Or should be pinched at once. Avalanche, Puritan, Elaine, Criterion, Mlle. Lacroix, W. Holmes, and Alex. Dufour will give buds quite soon enough without interfering with them.

Chrysanthemums (*E. M. C.*).—Autumn Tints is a late sort, colour bronzy-yellow; Primrose League, mid-season, colour cream-white; and Dormillion, midseason, colour rosy-purple, very tall. The latter variety was introduced in 1883, and is rarely heard of now.

Pyrethrum La Vestale.—Though perhaps among the oldest of the double-flowered varieties, the blush-white, loosely-formed flowers of this are very pleasing, and being so freely produced, it should be grown by all, especially where the demand for long-stemmed flowers is considerable.

INDOOR PLANTS.

PERSIAN CYCLAMENS.

As winter-flowering plants Cyclamens need no recommendation, but they are not grown so extensively as they deserve to be. The reason probably is that where only a limited number of plants are required they are grown amongst other things, and do not meet with exactly the treatment they require; but once let anyone grow only a few and give them fair treatment, a rich succession of bloom, which will continue nearly throughout the winter, will be the result. The seed may be sown some time in autumn, and before sowing the seed it is a good plan to soak it for a day and a half or two days; the water may then be poured off and a little quite dry sand shaken among the seeds. The seed-pots may be prepared by filling them nearly full with any ordinary loamy compost, and then surfacing them over with a little finer soil, as loam, leaf-mould, and sand, sifted through a fine sieve. After spreading the seed evenly over the surface it may be lightly pressed in, but should not be covered with soil. A little fresh Sphagnum Moss may be used, and this should be cut up quite small, and just enough used to cover the surface. The seed-pots may be placed in the close propagating-pit, but should be removed as soon as the young plants appear, or if the pots are placed in a more exposed position, they should be covered with glass for a time. The seedlings should be pricked off as soon as large enough to handle, and must be potted off singly when they have made about three or four leaves. The compost for growing Cyclamens in should consist largely of good mellow loam, some well-rotted leaf-mould, and a little sand or soot may be added. Use the soot very sparingly for the young plants, and more liberally for the later pottings. The plants should be potted only moderately firm, and the crowns of the corms kept above the surface. During the winter the plants may be kept in an intermediate temperature, and they succeed best on a moist bottom, but should be in a light, open position, and as close to the glass as possible. They should be ready for potting into 4½-inch pots early in June, and some of the most vigorous earlier than this. Those potted in June may be at once placed in cold pits or frames, or if on a hotbed that is nearly spent they will then get a good start. After the first week or so plenty of air should be given, and later on when the nights are warm the lights may be taken off altogether, and will only be required to protect the plants from storms or to provide a little shade during the hottest part of the day. A little extra shading may be necessary if the weather is very bright. Shading should be avoided as much as possible, however, and always taken off early.

Cyclamens do not make much foliage early in the season; but after the weather begins to get a little cooler the leaves come up very quickly. The plants should have plenty of room, so that the air can pass through them. This is a very important point, especially after the flower-buds begin to form; if crowded the buds will remain dormant and eventually damp off. Watering must always be carefully attended to, and after the pots are well filled with roots some liquid-manure may be used, or a little fertilising matter be given occasionally. Cyclamens are subject to aphides, thrips, etc., and suffer very much if these pests are allowed to get established. On the first appearance of insects the plants should be thoroughly cleansed by smoking or dipping. It is not advisable to dip the plants after the flower-buds are formed. The difficulties of growing Cyclamens are more imaginary than real, and I believe failure is often caused by too much coddling and keeping the plants in too high a temperature, which not only weakens them, but is favourable to the most destructive kinds of insect pests. One more point must be considered: that is, the necessity of securing a good strain of seed. In saving seed, only those varieties of the best habit of growth and with the most distinctly-coloured flowers should be selected; and if fertilised, the red kinds should not be crossed with the white varieties, or dull, indistinct colours will be the result.

The plant in the illustration, grown by the sender of the photograph, bore this year 200 flowers; it is a three-year-old plant in a 7-inch pot. A.

The Persian Cyclamen. From a photograph by Mr. D. McLenaghan, The Gardens, Longworth, Hereford.

Lilium auratum failing.—It is not apparent, from the note that appears on page 93, whether "C. H.'s" Liliums were potted or were growing in the open ground. If the latter, the occurrence is not unusual. Some years since I carefully planted a batch of bulbs in a bed of prepared soil 2 feet 6 inches deep. During their first season they flowered well, and in the ensuing spring I was pleased to notice that several were breaking the ground with far larger shoots than they had produced in the preceding year. Not one of these Lilies, however, flowered, all dying off at various heights between 6 inches and 3 feet. Their appearance was always perfectly healthy, until signs of flagging showed in the tightly-folded young leaves at the apex of the shoot; on feeling the stem this also was found to be limp, and a couple of days from the first sign of collapse found the Lilies level with the ground. On inspection it appeared that the rotting commenced about half-way between the bulb and the ground-level, eventually eating through the whole diameter of the stem before any trace of disease was discernible above the surface of the soil. The bulbs themselves had scarcely made any roots, and, though not showing such evidence of disease as did the stems, had many partially-decayed scales. Though carefully cleaned and returned to the bed enveloped in a complete covering of silver-sand, these bulbs never showed further signs of growth. Since then I have made many plantations of L. auratum, both home-grown and imported bulbs, and have met with varying success, often failing where I was most confident of a good result, and sometimes succeeding where I felt that failure was well-nigh certain. Except in certain favoured localities, it is always well to procure an annual supply of these beautiful Lilies, so that failure of the preceding year's batch may not altogether banish the handsome, richly-scented flowers from the garden, and if the older bulbs flower a second time and increase in beauty, as it is quite possible they may, a still finer spectacle will be afforded. The imported bulbs are now sold at so cheap a rate that a few shillings will purchase sufficient to form a fine clump.—S. W. F.

THE CINERARIA FOR GREENHOUSE AND SHOW.

In a few remarks upon the culture of this useful plant, the first consideration must be the raising of young plants.

Propagation is by sowing seeds and by striking the offsets. The former method is the most general, but the latter is best, and for this reason: A particularly good variety cannot be perpetuated from seed—that is, it will not come true. Of course, we must have seedlings from a skilfully-crossed strain to get these high-class flowers, but in cultivating a plant as a specimen for show purposes, I think the grower is wise in not growing in a haphazard way, but should know what he is tending.

My own practice was to sow seed of good strains one year, and pick out the best in flower and habit of growth to propagate from the following season. By this means I collected a very fine lot. Named Cinerarias are not often sold nowadays. They would be too costly for most persons, and are really not necessary in a general way. Good strains are plentiful, but I would advise everyone to begin the work of Cineraria culture with seed from a reliable source, for it costs no more than indifferent stocks.

Sowing the seed.—A shallow pan, or pans, should be filled in the usual way to within ½ inch of the rim with a compost of loam, leaf-mould, and sand in about equal parts, all run through a fine sieve; make the surface level, and then give a thorough watering with a fine-rosed can. Let the pan stand for an hour before sowing the seeds, then scatter them thinly and evenly over the surface, and finish off with just a covering of sand. The month of May is a good time; for successional batches it is sometimes useful to sow again a month later. After covering the pan with a sheet of glass it may be placed at the foot of a north wall under a hand-light or frame. This should be kept closed to prevent evaporation, for, I believe, in nine cases out of ten, want of moisture is the cause of failure in the germination of Cineraria as well as most very small seeds we grow under glass. If, however, the frame be kept close as advised, and a good soaking given in the first place, this will be found sufficient till the young plants appear. Do not let the sun shine on the glass, and it is also well to raise the pan to prevent slugs from eating the tiny leaves the moment they appear, at which time we must take away the glass that has covered it. If the advice of sowing thinly be followed, nothing need be done until the first rough leaf shows itself in the seedlings; they may then be raised carefully out of the earth and removed singly into small pots, using the same kind of soil as before, and in the same way kept moist by lightly sprinkling with water; also closed from air for a week or so. In a short

period of time roots will make through to the sides of the pots, and the plants may then receive another shift, for in the early stages the Cineraria must not in any case become pot-bound. At this potting—when the 5-inch size may be used—press the soil in rather firmly with the fingers to induce a sturdy growth. After a few days, when the roots will have taken to the new soil, admit air freely in the frame, which should still be in a position where the sun does not beat upon it, or, if so, should be shaded.

Before proceeding further I will speak of offsets. We take these, if they can be had when the plants are in flower. In most cases suckers spring from the base, and these are what we want. Cut them off with a sharp knife and pot singly in small pots. The hand-light or bell-glass may be used as a covering for them, and here they should be kept moist and close as advised for seedlings. These cuttings strike root in a very short space of time, and as soon as this has taken place the plants may at once go into 48-size or 5-inch pots, and treated in the same manner as the others. If there be a difficulty in obtaining the cuttings thus early, cut down the plant that it is desirable to propagate after it has flowered, shake off most of the old soil, stand the old stool in some shady spot, and cover it with leaf-mould. About July one may expect cuttings to throw up in abundance. The stools again may be saved; all shoots except three being taken from them, the straggling roots may be just tipped back, then place them into 5-inch pots; such plants grow into very large specimens.

Treatment of young plants.—We have got on now to midsummer, and the plants, whether from seedlings or cuttings, should be growing vigorously. Water them at the roots with caution; when they do require it give a thorough soaking, and leave them till again examined and found dry, but I would keep water sprinkled about underneath the leaves each morning. When rain is not expected the lights may be pulled off the frames at night. It is well to let the plants have the benefit of gentle showers, but prevent damage from heavy rain at all times. It is wise, too, to raise the frame by placing a brick at each corner; this will allow air to play freely among the leaves. Give the plants plenty of room. A capital plan to prevent them becoming drawn up, and thus showing a want of sturdiness in their growth, is to stand each plant on an empty pot turned upside down. If the above or similar conditions be carried out, I will warrant that that worst of all Cineraria pests—green-fly—will not have put in an appearance. Should it do so, however, either dust the undersides of the leaves with Tobacco-powder, or fumigate with Tobacco-paper.—H. Shoesmith.

A WORCESTERSHIRE COTTAGE.

Pickersleigh Cottage is one of those quaint, old-fashioned timbered places so often found in Worcestershire. It is situated at the foot of the Malvern Hills, and is one of the many houses said to have sheltered King Charles on the night previous to the memorable battle of Worcester.

In the gardens there are still cultivated huge clumps of old-fashioned flowers that have evidently been undisturbed for generations, such as the Madonna and Tiger Lilies, Jacob's Ladders (Polemoniums), Perennial Sunflowers, Michaelmas Daisies, etc, bordered by very tall Box-edging. In the orchard adjoining are found very old relics of Apple and Pear-trees, with very large boles, chiefly of poor varieties, probably originally raised from Pippins, or kernel-fruit so called, which, doubtless, was the orthodox way of raising fruit-trees in those bygone days. The produce is only used for the making of cider and perry. The real old Worcestershire occupier sets a high value upon his "drink" crop; and, curiously, it is found that these uneatable or uncookable Apples and Pears make better cider or perry when properly fermented and managed than the better quality of dessert or culinary fruits.

C.

A Worcestershire cottage garden. From a photograph by Mr. Crump, Madresfield Court Gardens, Worcestershire.

ARTIFICIAL MANURES FOR VARIOUS SOILS.

A question on the subject of "Artificial manures for a sandy soil" (No. 530, p. 129) prompts me to offer a few remarks on this highly important subject. Very many gardeners find it impossible to procure the ordinary stable- or farmyard-manure, either in sufficient quantity for their requirements or at a reasonable and remunerative rate, and as a consequence I am constantly being asked such questions as—"What is the best substitute for ordinary manure?" under such circumstances, or "How can my ground be rendered fertile without the use of stable-manures?" and so forth.

Now soils vary so infinitely, not only in their mechanical texture but also in their chemical composition, that no one artificial manure, simple or compound, equably suitable for all descriptions (of soil) has ever been discovered or invented, nor ever will—the thing is impossible. Some soils contain an abundance of certain elements or necessaries of plant life, and are deficient in others, while in other places the reverse obtains, and before any such can be rendered really fertile, the proper proportion of such principle or principles as are lacking must be made up by some means. The absence, or even the presence in an insufficient proportion of only one element of growth may, and often does, render an otherwise fertile soil comparatively useless, though as soon as the deficiency is corrected the ground will at once produce abundant crops. This is why the occasional application of lime to farm or garden land is of such importance. All the other elements of luxuriant growth may be present, but without a proper proportion of lime they are rendered inactive, and no good results can be obtained. It also explains the fact of the use of some one particular fertiliser (artificial) often producing such marvellous effects. It happens to be, or to contain, just the one element lacking, and its addition renders the soil capable of affording a perhaps abnormally heavy crop.

Further still, every separate crop, or class of plants, demands for its healthy growth a different set of elements, and unless these are not already present in the soil, or supplied by judicious manuring, in sufficient quantities, and in something like the right proportions, the plants cannot thrive. Hence one crop succeeds better on a certain description of soil, and another elsewhere, while certain manures (artificial) are more suitable for certain crops, and others for others. Thus, roughly speaking, the whole of the Cabbage tribe chiefly require large supplies of nitrogen (ammonia); Potatoes and most other root-crops, phosphoric acid and

lime (usually supplied in the form of superphosphate, etc.), with a moderate proportion of nitrogen; Peas, Beans, and other leguminous plants are not benefited to any appreciable extent by nitrogen in the soil, but require abundant supplies of phosphoric acid, potash, and lime. Some few plants again, such as the Strawberry and Vine, demand large quantities of potash, and so forth.

Without going any farther into the chemical side of the question, it may be as well to state as briefly as possible that the principal elements of plant growth are four in number—viz., nitrogen, phosphoric acid, potash, and lime, and it is of these four elements, as supplied by various material or sources, and blended in varying proportions, that all the compound or mixed artificial manures consist. If all these are present in the soil in sufficient quantities, and an available or soluble form, such a soil is fertile, and will grow almost anything. Small quantities of iron, soda, magnesia, etc., are required by some plants, but not to any extent.

Manuring, or successful plant-growing, thus becomes a matter of, in the first place, ascertaining, by means of either analysis or careful experimentation, (1), what principles the soil to be dealt with contains or is deficient in, and (2), those chiefly required by the plant or crop to be cultivated, as well as (roughly) in what proportions, and then to supply whatever may be required in the most effective and least expensive manner.

The more or less simple substances or chemicals chiefly employed as fertilisers are lime, chalk, superphosphates (of lime), bone-meal, crushed bones, and steamed or dissolved bones (all these supply lime or lime and phosphates combined); sulphate of ammonia, nitrate of soda, gas-liquor, and urine (the chief sources of ammonia or nitrogen); kainit, nitrate of potash, and wood-ashes (each of these afford potash in some form); basic slag, or "Thomas powder," which supplies mineral phosphates in combination with other matters; common salt, supplying soda, etc.; and soot, which consists chiefly of carbon, with a small percentage of ammonia, etc.; guano is a mixed manure, containing ammonia, phosphates, and potash in varying proportions.

Light soils are always more or less deficient in lime, and hence require to be more freely and frequently dressed with this substance than medium or heavy staples. Such light land is generally wanting in potash, so that a dressing of kainit (2 cwt. or 3 cwt. per acre) often has an excellent effect, especially for certain crops; it should be applied at least three or four months before the ground is to be planted or sown, as it dissolves very slowly. The liberal application of wood-ashes or burnt refuse of almost any kind has much the same effect on most light soils, and even on heavy land I have found such material to stimulate the growth and increase the crop of Turnips in a marvellous manner.

Soot is an excellent fertiliser for almost all kinds of crops, and a corrective of the soil as well, but being of a decidedly dry and somewhat burning nature it should never be used to excess, or it may have the effect of perishing the soil; while for the same reason it is also more suitable for use on medium to heavy staples than light ones. The same thing applies to most guanos, which are also of a comparatively hot and drying character, as also is the droppings of Fowls or chickens, which are more useful on soils of a substantial than of a light nature, and should never be used in a very fresh or strong state.

Common salt, nitrate of soda also, both possess a strong affinity for moisture, and hence are of great value on light soils as greatly aiding in retaining moisture. For Potatoes on a light staple, as also for Seakale, Asparagus, Cabbages, Celery, Carrots, and other vegetables, salt is an admirable fertiliser, while where the ground is heavy and damp soot and burnt earth, etc., will be found a much more suitable dressing. On damp, cold soils sulphate of ammonia should be used to all crops requiring nitrogen (including Potatoes, Cabbage, Tomatoes, etc.) in preference to nitrate of soda, and *vice-versâ*, as it is of a much drier character.

In addition to the chemical principles referred to above, a certain amount of humus is necessary to render all soils permanently fertile. In the absence of stable-manure this may be best supplied in the form of leaf-mould, spent Hops, old tan, etc.

B. C. R.

ORCHIDS.

A WAY OF GROWING ORCHIDS.

Ferns and Begonias grow like weeds in the soft substance of the Tree-Fern stems, which exactly suit their requirements; and as to the Orchids, I can safely say that they have done as well, if not rather better, than in the ordinary pots, pans, and baskets one is accustomed to see them in. Oncidium Lanceanum—which, as Orchid-growers know, is not a very easy thing to do with—on the Dicksonia stems grows away and makes leaves with the utmost vigour. The principal advantage of this plan is that the things look exactly as if they were growing naturally—a great desideratum, I venture to think, with Orchids, and when these flower, the effect of the rich background of Begonia-leaves, out of which the Orchid flowers seem to spring, is exceedingly good.

Orchids and fine-leaved Begonias on Tree-Fern stems.

To those Orchid-growers whose space falls somewhat short of their wishes—rather a numerous body, I imagine—I venture to submit this idea as a great saving of space. It is evident that if you can grow twenty or thirty plants on the space occupied by only one pot, it is an advantage not to be despised by the owner of a small house. The Tree-Fern stems are fitted tightly into pots, as the easiest way to make them stand by themselves, or tied with one strand of strong copper wire to the iron pillars of the Orchid-house at the top and at the bottom. It is much prettier to see these masses of foliage and bright flowers than the usual naked iron pillar. The only cultural hint I have to offer is to water from the top with a rose; the water then runs down the stem and reaches every root upon it without touching the leaves and flowers. If any of your readers should think of trying this plan, I append a list of the things I have found to do well on Dicksonia stems in the Cattleya-house, but, of course, the idea is equally applicable to the cool Orchid-house or conservatory. About 2 feet of the bottom of some of the Dicksonia stems is completely covered by a dense carpet of young Ferns, the result, I presume, of seed ripened by the Australian sun. Orchids: Cattleya citrina, C. marginata, C. Trianæ, Cœlogyne cristata, C. flaccida, C. ochracea, Dendrobium amœnum, D. Farmeri, D. chrysotoxum, D. Draconis, Lælia anceps, L. acuminata, L. autumnalis, L. Digbyana, Lycaste Skinneri, Maxillaria grandiflora, M. picta, Miltonia cuneata, M. spectabilis, Odontoglossum Cervantesi, O. citrosmum, O. maculatum, O. Rossi majus, Oncidium Cavendishianum, O. Lanceanum, O. tigrinum. Various plants: Ficus repens, Adiantum cuneatum, A. Legrandi, A. Lathomi, A. gracillimum, A. mundulum, Gymnogramma chrysophylla, G. Laucheana, Pteris serrulata, P. cretica albo-variegata. Hybrid Begonias: Smaragdina, Erin, Countess of Annesley, Gloire de Vesinet, Mrs. Barron, Mme. Patti, Tresco Abbey, Winter Queen, Speciosa Gogoensis, Winter Marvel, Masterpiece, and Rajah. For the pillars in the centre of the house it is a very good plan to put two stems of the Dicksonia back to back. When the plants have grown, the pillar is quite covered.

Oncidium Harrisonianum. — This Orchid is one of the prettiest of the small-flowered Oncidiums. It has been long in cultivation and first flowered in the collection of the lady whose name it bears in 1832. On strong plants the racemes attain a height of from 15 inches to 18 inches, and a large number of smallish flowers are produced towards the top, these being yellow, with reddish-brown spots. It may be grown either at the cool end of the Cattleya-house or with the Odontoglossums, being a native of the higher altitudes in Brazil. A pot large enough to take the plant and allow a little margin of compost is all that is needed, and this may consist of the usual peat and Sphagnum mixture. It likes an abundant water supply while making its growth, but is easily injured by much overhead sprinkling.

Lælia purpurata.—I am sending you by this post a bloom of Lælia purpurata. I shall be pleased to have your opinion of it.—W. Edgs. [*A very fine form indeed, and well worth keeping, the colouring of the lip being especially rich.*]

ODONTOGLOSSUM CITROSMUM.

The earlier spikes of this pretty species are now expanding, and where there is a good stock of plants a display will be kept up for several months. The blossoms are quite distinct from those of any other kind and their manner of production is also different, the spikes issuing from the centre of the forming growth instead of appearing at the side of the mature or semi-mature pseudo-bulbs. As is well known, the spikes take a downward direction, hence the synonymous name, O. pendulum. It likes more heat than most others of the genus, thriving well with the cooler section of Lælias, or even in the Cattleya-house if no intermediate temperature is at command. Direct sunlight in the summer is not advisable, but the less shade the plants get, so long as the foliage is uninjured, the better. It is surprising how much sun they will stand if the atmosphere is kept moist. It is an easily propagated species, small pieces taken off at potting-time soon making nice plants if carefully grown. These are best grown in pots on the stage for a season or two until strong enough to flower, when they may be placed in suitably sized pans and suspended from the roof, a position in which their pendent scapes show to the best advantage. I like pans better than baskets for O. citrosmum, the roots attaching themselves freely to the sides and thriving well under the treatment. The best time to repot is as soon as the flowers are over, and as it is not a very large or free-rooting kind, the pans need only be large enough to take the plants and allow about 1½ inches of margin for the compost. The latter may consist of about two-thirds of the best fibrous peat to one of Sphagnum Moss, and a few small crocks must be at hand to mix in as potting proceeds. Trim off all neatly and place at once in a moist house, giving only enough water to keep the Moss fresh until new roots begin to push from the young growth, after which a liberal supply is needed. Every endeavour must be made to ensure a vigorous and healthy growth, and the plants will finish fine large pseudo-bulbs by the autumn. Water freely at this season and right up to the middle of November, when the supply must be gradually diminished and the plants dried right off by mid-winter. Soon the young shoots will appear at the base of the pseudo-bulbs, each lead producing one, and frequently two new growths. Keep quite dry at the roots even if the pseudo-bulbs shrivel, and in due time the little white points of the spike will appear in the centre of the shoot, usually when the latter has attained about 1 inch in length. Each plant as the spikes show should be taken down and immersed in a pail or tub for about an hour to thoroughly moisten every part of the compost and drive out any woodlice or other insects that may be lurking therein. After this soaking the bulbs plump up rapidly, and in the moist heat the flower-spikes almost visibly lengthen. This watering usually suffices for a week or ten days, as it is not advisable to keep the roots too wet at first after their long drying. Some plants will be found to require more than others, owing to the pans or baskets being more closely filled with roots, and a little judgment at this season is usually well repaid.

This system of drying the plants is, according to my own experience, quite essential if a good flowering return is expected, and I have never seen well-bloomed specimens obtained in any other way; on the other hand, quite recently an Orchid-growing friend told me he did not practise it, but relied on the plants being well ripened in autumn, and had no reason to be dissatisfied with the results. I think it would be interesting if any readers of Gardening who had tried the latter plan with success would record the fact, as it certainly seems an unnatural proceeding to so dry the plants. They may be so dried in their native habitats, but even if so, there are other kinds that are similarly affected, and which under cultivation thrive and flower well without it. Newly-imported plants of this species are easily established, and often flower upon the first matured pseudo-bulb, though whether it is advisable to allow them to do so or not is open to question. When received and thoroughly cleaned, they should be placed in their pans in clean crocks, the surface of the latter being raised a little towards the centre and covered with a very thin layer of Sphagnum. A shady position, not too far from the roof glass, should be given them and the crocks kept constantly moist, frequent light dewings over the foliage being conducive to a rapid recovery. When the growth is well on the move and just before the roots begin to run, place a little compost around the plants, watering carefully afterwards. Good progress will probably be made, and by the time the first bulbs are completed there will be little to distinguish them from the established plants, and the after-treatment will of course be as described above. It is rather a variable kind in the tints of the flowers, these ranging from pure white to bright rose. All the varieties have a yellow centre to the lip, and in most of them this organ is prettily suffused and spotted with rose. It is a native of South Mexico and Guatemala, and was introduced in 1840.

H.

FLOWERS BY THE SEA.

Our climate along the southern coast of England is of such a favourable character that it offers a wide range for the cultivation of plants suitable for the open-air garden and as climbers against walls. There is a greater choice amongst climbers suitable for walls than any other, and to these I will first direct attention.

Flowers of Magnolia grandiflora. From a photograph by Mr. F. W. Fitzherbert, Torquay.

Tecoma jasminoides.—This plant is well known as a greenhouse climber, but it is not generally known that it thrives in a warm aspect on walls in the open air on the South Devon coast. At Dawlish, a mile inland, it thrives and flowers in the most satisfactory manner—much better, in fact, than ever I saw it doing under glass, as the flowers are larger and produced in greater numbers, and the foliage is larger and of a darker shade.

Bignonia radicans.—Although this creeper grows luxuriantly enough in many inland counties, one requires to see it in some of the gardens on our south-western coast to understand its capacity to produce a brilliant effect during the autumn months. No creeper with which I am acquainted is capable of covering so large a space in so short a time, or has such a singular and distinct character. It requires a rather rich and deep border.

Clianthus puniceus.—In a suitable climate this is unquestionably the most brilliant creeper grown, as it will clothe a wall from 20 feet to 30 feet high with large bunches of its bright crimson flowers almost from top to bottom, and being an evergreen, further enhances its value. I am only surprised that it is not more grown in the south and west than it is, for in a good soil, after the first year of planting, it will increase in height at the rate of 5 feet each year, and being naturally of a branching habit it fills up the wall without any pruning. This Clianthus is not very particular about soil, for I have seen it thriving in a bed of lime-rubble, and also in a loamy mixture. Cuttings of the half ripe wood strike as freely as Pelargoniums in the early autumn, but they should not be planted out till the following spring.

Stauntonia latifolia.—This is another evergreen climber that is much hardier than is commonly supposed; the growth and foliage render it a suitable subject as a climber; the flowers are of a dull brown colour, which make them somewhat unattractive. Its greatest merit, I think, is that the blossoms are highly fragrant.

Pittosporum Tobira.—This is another sweet-smelling evergreen, suitable either for a wall of moderate height or for growing in the form of a bush. The flowers are creamy-white, and are produced at the points of the shoots. It has rather a neat and stiff habit, and well furnished with growth down to the ground when the plant is not crowded by other subjects. There is also a variegated form, which is a counterpart of the other, except in the colour of the leaves, which have a creamy variegation. It will be found to make the best growth when a little peat is mixed with the soil.

Berberidopsis corallina.—This plant also makes much more growth on open warm walls than it does under glass. It is not a striking plant even when in flower; the flowers are even more remarkable perhaps for their singular form and colour than for their capacity to make an effective display.

Fuchsias.—As flowering plants for covering walls, or for growing into the form of huge bushes, there is nothing amongst what may be called half-hardy plants to equal them. Only in a few instances have their merits been recognised as suitable for the shrubbery border in a form large enough to render them conspicuous objects. Riccartoni is, no doubt, the hardiest of all Fuchsias for planting to form bushes, and the old F. corallina is the best for covering walls. For warm and sheltered corners many of the better forms do exceedingly well even close down to the sea.

Strawberry-tree (Benthamia fragifera).—This evergreen plant would certainly do well on warm walls all along the south coast, and it is quite hardy in sheltered shrubberies in some of the gardens in South Devon as a wall plant its

growth is of easy management. We have it growing on an east wall where it occasionally bears fruits which are coral-red.

MAGNOLIA GRANDIFLORA (illustrated on p. 153) is generally grown against a wall, but I believe there are many sheltered gardens by the sea in which this Magnolia would do equally well as standards or bushes. Amongst other subjects which are suitable for the lawn or the shrubbery border I may mention Choisya ternata, which grows in the form of a low shrub with leathery shining foliage and sweet-smelling cream-coloured flowers.

ROSE CLIMBING DEVONIENSIS.—Although this Rose may do fairly well in some inland gardens, I have never seen it doing half so well anywhere as on the sea-coast, where its growth is very remarkable, and the number of flowers far exceeding those produced on plants grown under glass. I can recommend this Rose for sea-side planting; of course, it requires a good soil and plenty of room for its branches to extend, and only moderate pruning until it has filled up the space allotted to it.

OLEARIA HAASTI is of similar habit of growth, and suitable for planting either on the lawn or the shrubbery. It bears large heads of small white flowers. Desfontainea spinosa, sometimes called the Flowering Holly, is also a useful evergreen, suitable either for planting against a low wall or in a sheltered position in the shrubbery.

C.

ROSES.

PLANTING ROSES IN MAY.

SOME of my readers, owing to various circumstances, have been doubtless compelled to defer the planting of Roses until the time has arrived when it is too late to put in plants from the open ground. But they need not despair. May is the best month in which to put out plants grown in pots. The point to consider is the

SOIL

in which the Roses are to be planted. It is generally known that Roses require good loamy soil, and the best is that which has been trenched a year or so previously. But it is not always possible to obtain such soil, therefore the next thing to do is prepare the soil we have or supplement it by adding loam.

In a small way, quite a number of beautiful Roses may be cut from an area of not more than 60 square feet, and it would be quite practicable (supposing the natural soil of the garden to be unsuitable for Roses), to form a bed about 12 feet by 5 feet with good clayey loam to a depth of about 2 feet. A bed of this description would require about four loads of this loam, in which Roses fairly revel. In most districts it is readily obtainable, especially from meadow land cut up for building, and it can usually be purchased for 4s. or 5s. per cubic yard. I would advise, therefore, some such loam be procured without delay, and mix with it one-third of one-year-old cow-manure. If some sheep-manure is available, it might be added instead of all cow-manure, but in a less proportion than the latter.

The old worn-out soil must be removed to a depth of about 2 feet, and the bottom well broken up with a fork. Then mix the loam and manure thoroughly together. It will be ready to take the place of the worn-out soil removed. I am confident if some such precaution as this were taken in our suburban districts (where builders generally rob the gardens of all the best soil) that we should hear fewer complaints of Roses not thriving.

While the ground is settling down a look round must be made for some good Roses in pots to be planted in it. If an effect is wanted this summer the very best kind of plants to procure are those grown in 8-inch pots, and that were potted up last autumn. As nurserymen usually select the best plants for this potting, one is enabled to obtain as fine plants now as if we had obtained our plants from the open ground in the autumn, and providing the soil is good, some splendid exhibition blooms will be produced. Such plants as I have described are somewhat expensive, but they are cheap compared with the plants which are usually sold in 5-inch pots, and in addition a good display the same season is guaranteed.

On the arrival of the plants they should be well soaked in a pail of water for about ten minutes the evening previous to planting. The next morning knock the plants out of their pots, taking great care not to break the ball of earth. It will only be necessary to remove the crocks. Place the ball intact in the hole prepared for it, and tread the ground around the ball moderately firm. When all the plants are put in position, lightly fork up the soil all over the bed. The plants will not need water for some time, even if very hot weather supervenes, as the soaking supplied, together with what rains may fall, will meet all the requirements of the plants. It will sometimes happen that the ground will become hard, especially after rains. This should be remedied at once by hoeing, afterwards giving a light mulching of short manure. The hoe is the rosarian's best friend. Of course, by this time the plants will be pruned, and it will only be necessary as growth proceeds to thin out the crowded shoots from centre of the plants, so that all remaining foliage may obtain sunlight and air.

When buds appear a watering of weak liquid-manure may be given or a little pure guano sprinkled on the soil during rain. This will build up the blossoms to exhibition standard. Generally speaking, only the H. P. and H. T. classes of Roses are potted up in the autumn as described. Therefore if the Tea-scented varieties are desired they will have to be procured in 5-inch pots. It is essential that these latter be on the Brier or on their own roots. Do not have the Manetti on any consideration for Tea Roses for outdoor culture.

NEW VARIETIES.

Another advantage of pot-Roses is that we may obtain new varieties and plant them out to furnish us with buds for our Briers, which were planted for this purpose. If these new Roses are put out as soon as they can be procured, quite a number of buds can be obtained from one plant. A hint as to budding might be useful. Supposing one has some worthless varieties in the garden, they may be readily transformed into new varieties if the best shoots are strengthened by removing weakly growths, and afterwards budding these shoots with the new kind. If long established these plants will be ready for budding early, certainly by July. Some such plants will take ten to twenty buds, and a worthless kind may in one year be changed into a fine bush of a variety really worthy of cultivation.

Pot-Roses may also be planted out in their pots, and will be useful for the greenhouse or pits next winter. Here, again, I prefer plants in 8-inch pots. In this case they must be plunged up to the rim of the pot, but not over, as if covered on top we cannot tell when plants need water, and thus much damage accrues. To keep worms from entering the pots, and also to admit air to roots, I make a hole, funnel-shaped, and drop the pot in this hole. There will be a space of 2 inches or 3 inches at the bottom of this hole that the bottom of pots cannot touch, and thus the worms are excluded. This applies only when the garden soil is used to plunge the pots in. The next best plan is to stand the plants upon two bricks, and then cover the plants up to the rim of pot with coal-ashes.

These plants need careful watering, and doses of weak liquid-manure every other watering will considerably aid them. A quantity of fine Rose-blooms may be cut from these plants in July and during the autumn months, and, as I said before, they will furnish useful plants for providing a supply of Roses in the spring of following year.

WEAKLY POT-ROSES.

Weakly pot-Roses of all classes will derive great benefit if planted outdoors now. It is surprising how soon they recuperate when planted in some good soil. They may remain thus planted for a year or so, when they will be again available for potting up.

W. E.

Marechal Niel Rose unsatisfactory (*A. D.*).—No doubt your plant is suffering from mildew brought on by the extremes of temperature and a draught. Eighty degrees is far too high, especially when you let the temperature fall to within a few degrees of the open air. Until you remedy this you cannot check the mildew. You can pot up Freesias by the end of July or early in August. By growing them in a cold frame they can be had in bloom now, but it is very late for this sweet-scented flower.

Pruning Marechal Niel variety.—Would it be right to prune a Maréchal Niel Rose that has nearly finished flowering in warm greenhouse now? If so, can I cut away nearly all the wood made last year? As it cannot be allowed much more space than it occupies at present. It is rather a young tree, and has flowered very well this spring.—A. CASBURN.

*** Certainly; it is the very best way of treating Maréchal Niel to cut away all growth that has flowered. The growth made this summer will bloom well next spring, and most climbing Roses are more satisfactory when pruned immediately they have flowered.

Crimson Rambler Rose.—I am sending a leaf taken from a Rose-tree in my conservatory which I bought for Turner's Crimson Rambler. It has grown very long, but has no buds, and I am very much surprised to find on every leaf seven leaflets, which I have always thought is an indication of a Brier. Is this so, and is the leaf enclosed like one of Crimson Rambler?—W. E. WILSON.

*** Your Rose is the true Crimson Rambler. There is no rule as to the number of leaflets; even Crimson Rambler varies from three to seven of these. Do not prune away long growth; it is upon these most blossom is borne.

Rose Celestial.—There is a Rose Celeste, not to be confounded with Maiden's Blush (see illustration in GARDENING, February 27, '92). I should say it is well worth growing. The half-open bud, as exquisite in form as its perfume, is delicious. The colour is a dainty shade of delicate pink. I have recently purchased it, but it is too early to speak of its growth.—J. H. F.

Flowers in the winter.—During the past winter I had in my windows two pots of Mignonette. I sowed it in April last year, and kept pinching off the flowers until September, when I ceased. I did the same with two Zonal Pelargoniums; they flowered at Christmas. Seeing that the Chinese Sacred Lily did well in water, I thought I would try other bulbs, so I placed a dozen double yellow Daffodils in two pots without any hole in bottom—four of Sir Watkins and the same of "Emperor" in bowls. To my delight they bloomed beautifully, opening in February and continuing a long time. Two pots of Roman Hyacinths and Paper-White Narcissus, with a Primula and some variegated plants, made my little room quite gay. I only watered them when they were very dry, but then gave them a thorough soaking. Sometimes I dissolved a spoonful of artificial manure, and it seemed to do good. When there was danger of frost I put newspapers between the pots and the window to keep it out.—AMATEUR.

Dividing old plants of Tufted Pansies (*Violas*).—Old plants of these useful hardy flowers should be broken up into several pieces, as each piece is generally well-covered with roots. After replanting, coupled with judicious watering, in dry weather, they soon recover from the check. In this way a few old plants may be made into a wide margin for the flower-border, or beds of one sort or colour may be effected. In the early spring many of these old plants are quite a foot in diameter, and while they would give a satisfactory display in this way, they would give a far better result by following out the lines laid down here. Such sorts as Sylvia, Christiana, and Mrs. Scott in the white sorts, George Muirhead, Mrs. Primrose, and Bullion in the yellow, Blue Gown, Waterloo, Border Witch, and John Shires in the blue, and Florizel, Rosea Pallida, and Charm in the lilac and lavender tints of the flower, are admirably adapted for this purpose.—D. B. C.

Ramondias.—These are now very showy and flowering freely in shady and moist places. Some of the larger pieces in pots are flowering this year with great freedom, though there is probably lack of size in the individual blossoms. Shade is, perhaps, the chief requirement of these plants; given this and, if possible, moisture also, they do well. In a moist miniature ravine in rockwork Ramondias are quite at home, and again on the shady side of a nearly perpendicular wall they are growing quite freely in the crevices.

Papaver orientale Orange Prince.—A very showy variety of the Oriental Poppy, with large flowers of a red-orange shade and quite distinct, making an excellent companion for the more brilliant-flowered varieties.

GARDEN PESTS.

Insects and American Blight (*Babar*).—The caterpillars you inclosed are those of the common dart-moth (Agrotis segetum). These are most destructive insects, as they feed on the roots of so many plants, both in the flower and kitchen gardens. They feed at night, hiding under stones, clods, or rubbish during the day, or in cracks in the earth. The best way of destroying them is to turn up the soil round plants which are attacked and pick out the caterpillars. Soaking the earth with warm soap and water will bring them to the surface. The Apple-shoot which you sent was quite free from American Blight. Any nurseryman would supply you with "soluble petroleum." Dressing means applying with a brush.

Wireworms in garden (*G. R.*).—The insects you sent were not wireworms, but specimens of the oil-beetle (Melæ proscarabæus), a perfectly harmless insect. You will find a description and figure of the skip-jack or click-beetle, and its grubs, the wireworms, in GARDENING of May the 9th, 1896, and of leather-jackets, August the 31st, 1895, and millipedes, 26th of April, 1896.

Insects for name (*H. E. Wilson*).—Your box contained a number of specimens of a mite (one of the Trombidiums). We have never heard of these mites injuring plants; they feed on small insects. The following mixtures would kill them: Boil 1 lb. of flowers of sulphur and 2 lb. of fresh lime in 4 gallons of water, add 1½ lb. of soft-soap and 3 gallons more water; or the extract from 2 lb. of Quassia-chips, 1½ lb. of soft soap, and 2½ lb. of flowers of sulphur, well mixed in 25 gallons of water. Perhaps, however, the insects are doing good.

Diseased Lilium candidum (*A. D. Cotton*).—The stem of your Lily is evidently attacked by a fungus, probably the same kind that has attacked Lilies in various places. A correspondent whose Lilies had suffered much from this pest sprayed them twice with strawsonite of half the strength used for Potato-disease, once in April and again in May, with the greatest success. Spraying with "Bordeaux mixture" would be useful. To make the mixture, dissolve 6 lb. of sulphate of copper in 4 gallons of water, and slake 4 lb. of quicklime in a little water, and when cold pour it into the copper solution, and add enough water to make 40 gallons; mix thoroughly, and keep well mixed.—G. S. S.

Grubs on Cherry-trees (*Clara*).—Your Cherry-trees are attacked by the caterpillars of the small ermine-moth (Yponomeuta padella). When full grown they will be about ½ inch long. Syringe well with soft-soap 1 pint, ½ gallon of paraffin-oil, and 2 quarts of boiling water, well churned or beaten up for a quarter of an hour, and before using diluted with 15 gallons of water. This mixture should be applied with some force, so as to break through the webs that the caterpillars spin.

Holly-leaves attacked (*Elland*).—The leaves of your Hollies are attacked by the grubs of the Holly-fly (Phytomyza aquifolia). The grubs live inside the leaves, so that no insecticide will harm them. The only way to kill them is to pick off the leaves and burn them. You need not be the least afraid that the grubs will attack your Roses, as they only feed on Holly-leaves.

Chrysalis (*S. A. Day*).—The chrysalides you sent are those of a largish moth, one of the Noctuidæ, but it is impossible to say to what species they belong. I should certainly destroy all you can find, as the insect in its caterpillar state is probably injurious to some crop.—G. S. S.

THE MULLEIN-MOTH (CUCULLIA VERBASCI).

THE caterpillars of this moth are such very handsome creatures that one is quite sorry to have to include them among the garden pests; but they are so very destructive to Verbascums or Mulleins that it is impossible not to place them in that category, as these plants are entirely spoiled for ornamental purposes if their foliage is injured. The Mulleins are deservedly favourites in many gardens, as they are exceedingly handsome plants, and should be more often grown than they are at the back of mixed borders and in the wild garden. One drawback to their cultivation, however, is that they are so often disfigured by the attacks of these caterpillars, which not only gnaw great holes and notches in the leaves, but are also very partial to the flowers. The only effectual way of destroying them is by hand-picking. This, of course, should be done when the plant is first attacked, when much mischief will not have been done. The plants should be carefully looked over in June, and again a week or so later, and if once freed from them they are likely to remain so for the rest of the year. Sometimes the caterpillars, like those of several other moths, are found in very unusual profusion. They are said to have been found in extraordinary numbers in 1858, 1859, and 1860, on Braunton Burrows, in North Devonshire, where every Mullein-plant was covered with them, and in July thousands of them might easily have been collected of all sizes. The moths may, of course, be caught in a butterfly-net, but unless a person is well practised in the use of that implement, and knows the moth well by sight, the plan is not worth trying, as probably very few would be caught in the course of several evenings. The moths may be found from April until the beginning of June; the caterpillars make their appearance in June or July. When full-grown they bury themselves in the ground and become chrysalides; in this state they remain until they emerge as moths in the following spring. The moths are about ¾ inch long, and measure nearly 2 inches across the expanded wings, the fore-body and body are of a brownish-yellow colour,

Mullein-moth and caterpillar.

the former is densely covered with hairs, which form a kind of hood in front, and behind the hood a pair of epaulettes. Down the middle is a row of very dark tufts, the four joints first of the body have each a dark brown tuft on them; the last three joints are darker than the others, and are of a greyish-brown colour. The fore-wings are of a pale reddish-brown colour, the front and inner margins being of a rich chestnut-brown; about the middle of the inner margin is a waved, nearly white transverse line. The ends of the wings are deeply notched; just inside these indentations is a fine white line. The hind-wings are greyish-brown, gradually darkening towards the edges, which are fringed; the fringe itself is much paler. The caterpillars when fully grown are about 2 inches long; they have eight pairs of legs, which are placed on the first three, the 6, 7, 8, 9, and last joints. The caterpillars are of a greenish-white colour; each joint has a bright yellow band extending from one side to the other across the back. In this stripe are a number of black spots, many of which bear hairs; two of these are placed on either side of the middle of the back; below these on each side are several others. The face is yellowish, with blue spots. G. S. S.

Geum hybridum.—A free-growing kind with single, orange-coloured blossoms, and somewhat of the style of growth as seen in G. coccineum, succeeding well in the open border in any good ordinary loamy soil.

GARDEN WORK.*

Conservatory.

Fires will have been discontinued now, and it is always a relief to the mind when the dust and bothers of fires can be put away for the season. Give the flues and fire-place a good brush out, so that no soot may be left to form a crust on the boiler, and before fires are lighted again run all the water out and refill with clean soft water. Chrysanthemums will now be in the open air, the earliest plants in 6-inch pots. We have them in all stages, some only just rooted in small pots, and we shall put in more cuttings yet for blooming in small pots, but in this case the tops only of strong plants will be taken. Those who only grow tall early-struck plants miss a good deal of the beauty and usefulness of the Chrysanthemum as a decorative plant. One or two good blooms on a plant in a 6-inch pot are valuable for decorative purposes because they can be placed where the tall, leggy things could not stand, and when the flowers are 6 feet or 7 feet high one cannot see them with advantage or comfort. One of our friends, who grows these tall plants only, when he wants to look at them, carries a bamboo cane with a bent wire fixed in the top to draw the flower down to his line of sight. We do not know all the capabilities of the Chrysanthemum, yet as a subject for decoration more ought to be done with the single-flowered kinds, especially where many flowers are required for cutting. Hyacinthus candicans, five or seven bulbs in a pot, is useful for mixing with Ferns or foliage plants later in the season. Pinks, especially Her Majesty, which have been gently forced are valuable now for cutting. The cuttings should be struck early, and when established planted outside, and potted up in 5-inch pots in September. We had a beautiful lot of plants last autumn, but the maggot got among them, and though the plants were trimmed out with the point of a sharp knife and the maggots got rid of, a good deal of damage was done, but still we have now a lot of good blooms and have cuttings for some time. A little soot dusted over the plants during growth will perhaps keep off the fly. We shall try this and other means to effect this next season. Keep Azaleas and Camellias growing freely in a shaded pit or house till growth is completed, and then ventilate to ripen; afterwards a few weeks in a sheltered place in the open air will be beneficial. Camellias will not stand hot sunshine; the glossy leaves will scorch if exposed to it, especially when tender. Prune Genistas when the flowers fade and repot when the young shoots are breaking freely, afterwards plunge outside or in cold-frame where the lights can be drawn off. Pelargoniums are very bright now and Fuchsias are coming on.

Stove.

Increase the stock of Poinsettias and other winter-flowering subjects, but these for the most part, Poinsettias excepted, will be rooted and coming on. Gardenias will strike quickly now in a brisk bottom-heat. These plants during winter require warmth and moisture, but after growth is made a cool-house or pit will be more suitable to ripen it. I have seen such plants as Gardenia radicans, Francisca calycina, and other winter-flowering stove plants turned out for a time in warm weather in August flower all the better for the exposure, a light shade being rolled down over them when the sun is very hot. Fires must be kept going for some time yet—in fact, though the stove fires may be allowed to go out for a time during a spell of hot weather, when the change comes to wet and cold many things would like a little fire-heat again. Thin shades will be desirable in bright weather, and do not give too much, as the inrush of hot, dry air drinks up all the moisture and the growth receives a check. Thrips and bugs must be got rid of. It used a few years ago to be difficult to find a collection of stove plants without bugs, but with the multiplication of insecticides there should not be so many now.

Orchard House.

Where Plums and stone fruits generally have set very thickly some of the smallest fruits should be thinned off. Something may be done by judicious feeding to enable a tree to carry a heavy load, but judgment is required, and the covetousness which is natural to the average man very often leads him to overdo it, and then the trees become debilitated and ultimately die. The Peach and Plum under fair treatment will live to a good old age even in pots. I believe Messrs. Rivers have some of the original pot-trees still which are doing good work. If any further thinning of the young shoots is necessary it may be done now. Top-dress with rich compost and give liquid-manure twice a week. Syringe freely if the water is pure. Ventilate early in the morning and close and syringe about four o'clock in the afternoon.

Grapes Ripening

must be freely ventilated when putting on colour, but the atmosphere must be genial to lay on the bloom. Some cultivators, when the berries begin to colour, discontinue watering, but this should be done all at once. Less moisture will be required in the atmosphere, and the border may be mulched with litter to check evaporation, and so to a certain extent less water will be required; but right through the process of ripening a demand is made upon the roots, and they should never be permitted to get dry. Grapes, such as Madresfield Court, Muscat, which under some circumstances seem inclined to crack, should have plenty of foliage left, two or more leaves being left above the bunch. Free ventilation early in the morning is important to prevent the condensation of moisture. By free ventilation it is not meant that all the ventilators should be opened early, but that enough air should be given to prevent moisture condensing on the fruit, and a very small amount of ventilation as soon as the sun's rays strikes fully on the house will do this effectually. The openings to be increased later.

Tomatoes.

These are growing freely under glass. If possible, keep a little heat in the pipes, especially in dull weather, to secure a moving atmosphere and check the appearance of

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

disease Mildew on Tomatoes is generally caused by imperfect atmospheric conditions with the plants in too crowded a state.

Window Gardening.

Window-boxes may shortly be filled. Introduce a little fresh variety where possible. "Geraniums," Daisies, etc., are excellent occasionally, but arrangment is desirable. Individual taste if free scope is given will do much to improve matters. Plants which are intended for planting out will be safe outside in a sheltered place now.

Outdoor Garden.

In some districts south of London bedding-out will soon be in progress, but in cold districts it will be better to wait a bit and get the plants thoroughly hardened, so that they may start away at once when set out. A few degrees of frost will not hurt a well-hardened "Geranium," but a plant just out of the greenhouse would lose its leaves and have its effectiveness reduced for the season. Many efforts have been and are being made to break away from the geometrical garden. Very few of the new gardens now being made are much given up to geometry. A wide lawn, either level or undulating, according to circumstances and requirements. Plenty of trees and shrubs, especially flowering trees, and rockeries, ferneries, and beds of hardy flowers, bulbs, etc., can be dropped into suitable positions so as to make a pleasant variety naturally arranged. More pains should be taken than is generally given to fitting the position for the plants, or selecting the plants for the position. Even the best soils require some preparation, such as deepening, intermixing, and manuring before they are quite fit for Roses or Carnations, or other flowers which require good culture. The usual routine work of mowing, hoeing, weeding, will now require a good deal of time. Neatness is always important. Even if the plants are well grown, if their surroundings are untidy the effect will not be good.

Fruit Garden.

Spare frames may be filled with Melons and Cucumbers. The latter will do if they get enough heat to start well into growth, but a Melon-bed should never be permitted to get cold till the fruits are ripe, if really fine flavour is desired. In very hot summers fairly good Melons may be obtained from the original beds without the trouble of applying linings; but in wet, cold seasons the bed must be lined with warm material to finish off late fruit. Melons in a fine bright summer may set enough fruit without being artificially fertilised; but it is not wise to trust to insect agency or to the motion of the atmosphere for the dispersion of the pollen, as the time taken up with applying the pollen of the male blossoms to the stigma of the female blooms is very small, and there will be the advantage of having the fruits regularly placed. Strawberries growing on warm borders must have water; liquid-manure will be beneficial. If the weather looks settled the nets may be taken off the wall-trees and be stored away. This will give an opportunity to get on with the disbudding of Peaches and Nectarines, and dust Tobacco among the foliage if there is any trace of green or black-fly. There will be a good deal of work in the fruit-houses now. Tie in the young wood of Figs and Peaches. When Figs are in blossom keep a drier atmosphere for a few days, especially if the weather is dull. Thin late Grapes and mulch and water borders. Look after caterpillars on Gooseberries.

Vegetable Garden.

Plant early Celery. Avoid all unnecessary checks, and for the season shade the young plants for a few days till the roots get to work, and water when necessary. The Canadian Wonder is the best French Bean to sow now to come after the early crop. The Beans in the warm-pit will be valuable now. Every pod should be gathered when large enough for use, and liquid-manure given freely; they will pay for it. Mulch early Peas in the warm border if the soil is at all porous or light. To keep up an unfailing succession of Peas through July, August, sow freely; it is better to have too many than too few. The old blue Scimitar Pea is a good variety for difficult situations—just the Pea for poor soils where the Peas suffer badly from mildew. Watkins' Perpetual is a good Pea for supplying a family. If the pods are gathered as soon as fit, this Pea has more a perpetual habit than most. British Queen and Ne Plus Ultra are good late Peas. They require sticks 5 feet to 6 feet high, but will not disappoint. It is an advantage to sow all salads in drills, as then a little mulch can be laid between the rows, and a soaking of water will keep the earth cool for some time. There is not likely to be too much sunshine in our climate. Earth up and stick Peas early. Early Potatoes on warm border should be earthed up rather high, though we ought to have no frost now to injure early Potatoes. Prepare the site for Vegetable Marrows, and if seeds are used set the drills.

E. Hobday.

Work in the Town Garden.

The earliest of the spring flowers are over, and for this reason preparations must be made for plants intended for the summer display. Hyacinths, Tulips, and other spring-flowering bulbs should be lifted, and if intended for use another season should be replanted close together in the garden reserve. Polyanthuses, Primroses, and Daisies may also be lifted as they go out of flower, when they may be divided and replanted in a cool position in the garden until the time again comes round for their transference again. The beds and borders should be dug up immediately after, incorporating with the garden soil a nice quantity of well-rotted manure. In a few days this should be raked over in readiness for planting, which may be carried out between the present time and the same period next month. Commence with the hardier subjects first, and confine the selection to those plants possessing good constitutions, as by their use the prospect of a long display is enhanced. Tufted Pansies (Violas) are one of the best subjects for the town garden, and these should be purchased with plenty of earth adhering to the roots, as it is getting somewhat late for their planting. The Calceolaria is a good town plant, and Echeverias may be planted as an edging. Hardy annuals may still be sown, such subjects as Sweet Peas, Nasturtiums, Sunflowers, and Canary Creepers succeeding well if sown now. Hardy biennials and perennials should be used in town gardens more often than is the rule, as they are far better for this purpose than many of the more tender subjects. For this reason they should be planted even now, securing good clumps of the different subjects: Pinks, Carnations, Hollyhocks, Delphiniums, Campanulas, Sweet Williams, Spiræas, Gypsophila paniculata, and many of the different forms of the Helianthus. Early-flowering Chrysanthemums may be planted during the next few weeks to provide a display in the open during the autumn. Town gardeners possessing a greenhouse or frame in which a hotbed can be made should sow seeds of many of the best and prettiest half-hardy annuals. Asters (dwarf annual sorts), Marigolds, Zinnias, Ten-week and Intermediate Stocks, and Salpiglossis are some of the best. Dahlia-tubers starting into growth should be kept in a cold-frame, and this should be matted up at night in case of frost. Cuttings may be taken and rooted in a greenhouse with comparative ease. The conservatory and greenhouse should present quite a gay appearance with the increasing number of plants coming into flower: Primula obconica, Spiræas, Fuchsias, Zonal, show, and fancy Pelargoniums, Petunias, and Liliums longiflorum and Harrisi. Care must be taken to shade them properly, and no better method than a roller on the outside could well be adopted. By these means the display may be continued for a longer period. Air must be given carefully too. With the increasing temperature ventilation should be more freely given, taking care at all times to avoid a chill through draughts. Green-fly and other insect pests may be kept under by an occasional fumigation with Tobacco-paper. This should be attended to in all cases immediately the insects are seen. Proper attention to plant life and its requirements should, however, avoid the necessity for this to a large extent. Watering needs more carefully seeing to now. Go over the plants regularly and systematically. Should any plant get overlooked and become absolutely dry at the roots, stand the pot in a vessel of water until it is thoroughly saturated. Watering such plants in the ordinary way is of no use whatever. Harden off in a cold-frame tender subjects preparatory to their planting out a little later.

D. B. Crane.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from May 15th to May 22nd.

We have made a beginning of the bedding-out of tender plants. Having a good bit to do, we are compelled to begin as soon as it is safe to do so, and where the plants are well hardened they may go out now. When taken straight out of the greenhouse the planting must wait, but no experienced person would do that, as the hardening process is pretty well understood in good gardens. Among the plants which we have lately introduced somewhat largely into the borders in rather large clumps are Montbretias. They are charming things, and are so useful for cutting. The varieties are getting numerous, as the plants are easily raised from seeds. One of the best scarlet "Geraniums" for bedding is West Brighton Gem, especially small or moderate-sized beds; its habit is dwarf, and it flowers with great freedom. This is our best variety. Henry Jacoby is a dark crimson companion for it, which is used largely. Foliage "Geraniums" include Flower of Spring, Crystal Palace Gem, Zulu, the Dragon, and Mrs. Pollock. It is more important for us to have a good many plants of a few distinct types than a few plants of many varieties. The stakes for Dahlias are usually driven into the beds first, and the plants set out at the foot of the stakes when the weather will do. Here again well-hardened plants may go out long before those which are kept late under glass. I find we shall want more Violets for framing next winter, so another bed of offsets has been put out of Marie Louise. Looked over plantations of Roses to remove suckers. The standard Briers intended for budding have also been looked over to snip off all buds not likely to be required. Gone over Peaches on walls to thin young shoots a little more. Nets have been removed and packed away. We use only fishing-nets, and they will come in for covering ripening fruits, such as Strawberries, Gooseberries, etc. Thinned young crops of Carrots and Parsnips. Put the hoe through the surface of the ground to kill weeds. A stirred surface is a great encouragement to growth. Busy shifting on Chrysanthemums. Plants have been outside for some time, as we do not believe in coddling. Rearranged conservatory. Groups of Pelargoniums, including bright-coloured Zonals, are very effective now, and as we always tone down with foliage plants of some kind the effect is softened. Azaleas and Rhododendrons are getting on, and many have been removed and the spaces filled with Himantophyllums, Spiræa astilboides, Fuchsias, Cactuses, which we are growing rather more largely, working up stock of choice and rare kinds. Lilies of the longiflorum type are beautiful now, and as a thin shade is used the flowers last well.

AQUARIA.

Gold-fish in stone tank (*B.*).—You could easily provide shade for the fish by growing aquatic plants in your tank. If you have no water-weeds or plants, this would, in a great measure, account for the death of your gold-fish. There is no reason why you should not succeed with them under proper treatment. The bottom of the tank must be covered with about 2 inches of sand and shingle. In this should be planted some strong roots of common aquatic plants, such as the Water Crowfoot, which is useful as well as pretty, as it gives off oxygen freely; the Anacharis, which is hardy and very free growing, and the Nitella. The latter is a most useful plant, as it helps to keep the water sweet and healthy for a length of time without changing. In making a fresh start with your fish-tank, let the weeds and plants be well started into growth before a fish is introduced. To put fish into water that does not contain vegetable growth is to court failure. It should also be remembered that gold-fish will not thrive in hard water; pond-water is the most suitable. Having started the fish-tank, do not change the water, but add a little from time to time as necessary. The fish require feeding, and may have a little Vermicelli broken small, or some dried lean beef shredded very fine. You may provide additional shade by means of a movable screen, to be used during the hottest part of the day in summer, and during the frosts in winter the tank could be protected with a garden mat or something of that kind. By taking these precautions you would succeed with gold-fish in your tank. Small carp, dace, and sticklebacks would also do well, but a great point is to keep down the number of fish, as an overcrowded aquarium never prospers.—S. S. G.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

578—**French flower-baskets.**—Where can I get those light oblong Reed-baskets or hampers for sending flowers by parcel post or train—the same kind as seen in markets in south of France?—Baroness.

579—**Peppermint.**—Could any of your readers give me information as to the culture of Peppermint (Mentha piperita) as a commercial crop? I have been told there are large fields of it grown near London. Also where I could purchase seed or roots?—Megarity, *Ulster.*

580—**Plants in Cumberland.**—Would "W. H. L., (Cumberland)," kindly give his experience of the following plants in his climate? The writer lives at an altitude of 1,000 feet above sea-level, and his experience of the following is rather disheartening—viz., Aubrietias, Alyssum saxatile, Erysimum ochroleucum, early Rockfoils—*i.e.*, Saxifraga Burseriana, Lychnis, Viscaria splendens, named Aquilegias, Anemia Cephalothes, and Thymes. With the writer they (including Pansies) either disappear in winter or are left in spring mere bare stems.—Scalpel.

REPEATED QUERIES.

481—**Pot-pourri.**—Kindly give me recipe for making pot-pourri—a simple one, if possible?—Countess.

482—**Glory Peas** (Clianthus puniceus and C. Dampieri).—I should be very much obliged if you would kindly give me full particulars as to the culture of each of these Clianthuses? My garden is rather exposed, near Reading. I have a cold greenhouse, or nearly so, facing south. —S.

483—**Hedgehogs.**—Can you or any correspondent help me in this? I have had both old and young ones, and find they die after about eighteen months. They have had bread and milk several times a week, and their winter burrow has been in a heap of dry leaves in a lean-to house, which never freezes hard. I keep them, as I find they clear off a large quantity of slugs, sowpigs, and insects.—Clifton.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

581.—**Swallow-worts** (*C. Dyke*).—This English name is also applied to the Celadine.

582—**Green fly in greenhouse** (*Constant Reader*).—Fumigate your house several nights in succession for fly not too strongly.

583—**Artificial manure for Strawberries** (*Constant Reader*).—For Strawberries fish-manure, guano, or nitrate of soda are valuable fertilisers.

584—**Fork or spade?** (*New Reader*).—A fork is useful for breaking down ground already dug up, but for turning over heavy land of course use a spade.

585—**Peach-tree branch dying suddenly** (*F. Potter*).—The cause is canker, and doubtless you will lose portions of the tree affected. There is no remedy.

586—**Planting Lilies** (*R. Bradshaw*).—Plant in the autumn, not now. They would not succeed, unless very strong plants from pots, then we should be doubtful about them.

587—**Plants to cover rock garden** (*Amateur*). You cannot do better than plant plenty of the little Sandwort (Arenaria balearica); it is a delightful little plant, like a tiny Moss.

588—**Growing flowers for cutting in Tomato-house** (*New Reader*).—Tuberoses would do well. Carnations also if not shaded in winter. Maidenhair Ferns will do if shaded.

589—**Fungus** (*Eartham*).—The fungus is the early or egg condition of Phallus impudicus. It often grows amongst dead leaves, and when expanded it is 6 inches or 8 inches high, and has a very offensive smell.

590—**Passion-flower** (*Subscriber, Glarryford*).—It should flower in the summer, but, of course, much depends upon the strength and condition of the plant. The "Geraniums" are probably kept too dry.

591—**Seedling Gladioli** (*W. Gooderham, Old Catton*).—Very pretty, but Nos. 1 and 3 are no improvement on existing kinds. No. 2 is a very charming flower. By all means keep it and go on raising new forms.

592—**Blind Strawberry-plants** (*H. Coates*).—So much depends upon size of plants. Are you sure they are Royal Sovereign? Did you obtain them from a good house? We have not seen one failure in thousands.

593—**Lemon-scented "Geranium"** (*M. Hockin*).—You must apply to one of the nurserymen who deal with indoor plants. We do not recommend individuals. Look carefully through our advertisement columns.

594—**Chinese-lantern-plant** (*Physalis Alkekengi*).—This is quite a hardy plant and will succeed in any light soil, and is not opposed to even a slight shade. It will become almost a weed in some gardens, and the spikes are useful for indoor decoration.

595—**Globular excrescences on Vines** (*Doubtful*).—The globular excrescences are not injurious in any way, and will disappear with increased growth. It is owing to check of sap by dull weather. Give warmth with ample moisture. Your Vines are healthy.

596—**Using sand** (*Jesmond*).—Yes, any time from October to March you may dress your land; but in the meantime place the material in bulk, and add gas-lime, common lime, or soil, and ashes. It would then make a better winter dressing and be in a friable condition.

597—**Top-dressing for Vines** (*Novice*).—You may feed too much. If you dressed with cow and pig-manure in February little will be needed until the bunches are thinned. You may then dress with a good artificial manure, failing this, guano or nitrates; but liquid-manure is a grand fertiliser.

598—**Use of frame in shady place** (*Young Amateur*).—We fear you cannot grow much in the frame under trees. Can you not remove it to a better position? Few things will thrive in the frame under trees. Plants may, but not fruits. Chinese Primulas, Calceolarias, and Cinerarias would do there in summer.

599—**Asters** (*A. F.*).—If you are troubled with wireworms they must be killed before you can grow a satisfactory crop of Asters or Carnations. Examine the soil and send us any insects you may find prevalent. We really cannot guess at the cause of your failure, but if you send an insect we will endeavour to help you.

600—**Tulips "diseased"** (*H. B. S.*).—The Tulips have unfortunately been severely injured by hail. We recently saw a splendid collection utterly ruined through the same cause. The bulbs will be small through this damage to flower and leaf, but if the weather continues hot and dry they will not be so unsatisfactory.

601—**"Flushing" a Maiden-hair Fern** (*John Clark*).—This is a curious term to use in connection with a Fern. We presume you mean watering it. Well, that depends how often water is required; but during the summer Ferns require a considerable amount of moisture. That, however, does not mean keep the soil waterlogged, which will quickly bring on ill-health.

602—**Flies in Cucumber-house** (*F. C. H.*).—Use more moisture in all parts of the house. It is dry heat which breeds the fly, and smoke the house at night when the foliage is dry, not severely, but several nights in succession. Shade plants during sunshine, and never let house be thoroughly dry. Give little air, but ample shade. Cover manure with fine soil to kill small flies.

603—**Tobacco-flower unsatisfactory, etc.** (*Sweet Pea*).—We think your Tobacco-plant has received an overdose of manure-water. The same would apply to the Heliotrope; or it may be you have been fumigating the last-named, and Heliotrope has a great objection to smoke. Yes, Begonias come up year after year, and are one of the most showy and useful of all flowering plants.

604—**Polyanthus from seed** (*Lemon*).—It is certainly curious, but of no value. You would have to increase by division of the roots, as seedlings could not be depended upon to come true. We enjoy most the rich decided self-coloured flowers carried in a bold truss. These are the most effective in the garden. We hope, however, you will continue to raise seedlings with the above object in view.

605—**Melons** (*Very Old Subscriber*).—You cannot stop main leaders, but the side shoots when they are from three to four joints. Flowers fertilise in fine weather by keeping the house a little drier and when fruit is swelling feed and stop at two joints beyond the fruit. Of course, if your plants are trained up roof you must not stop leading shoot until a portion of the roof is covered, but until that is done stop those at base or near soil.

606—**Trees and shrubs round summer-house** (*P. W. Challis*).—We are unable to give prices and firms. You will do well to peruse our advertising columns. Get as many flowering shrubs as possible. These will suit your space, such as Kalmias, Rhododendrons, Lilacs, Guelder Roses, Spiræas. Plant from October to April. It is too late now, unless you secure pot-plants. Pears will do well on the fence, and for the summer-house use creepers, such as Clematis, Honeysuckle, and Climbing Roses.

607—**Nectarine-leaves shrivelling** (*Qu. Ann*).—We are in a difficulty. You give no particulars as to soil, age of trees, or variety. Trees may be old and cankered, and this would cause shrivelling and there may be few surface roots. Do you feed, as the roots may be too dry to swell the fruit. We do not think sun too powerful, certainly the reverse, but it may be your trees are weak and rootless. Can you give us more particulars? Your soil may be a heavy clay, and this would cause the evil. Leaves sent were blistered, due to cold. Nectarines like a warm, well-drained soil.

608—**Vines shanking** (*X. Y. Z.*).—You must treat your Vines liberally. Allow growths on each spur to run 12 inches without stopping, then give each a check. Allow the terminal shoot to run without stopping at all. Feed and keep shoots checked down rods when they get thick with wood. Towards August or later you may cut back terminal growth to within 2 feet to plump up fruit-buds lower down Vine. In short, allow a free growth, but not a wild one. You must get the wood well-ripened when made.

609—**Sickly Raspberries** (*Old Subscriber*).—From appearance of shoots sent they look as if the cold winds, frost, or hail had injured them. We think they will probably grow out of the disease if it be such. If not, there is no help but to transplant in another place. Lift a root or so and examine; if at all white they are best given new quarters. The wood sent does not show disease. We think it is the cold winds. Let us know later how the plants thrive. We will further advise you. The wood is well grown.

610—**Growing Vines in Rose-house** (*Memo*).—You could grow Roses, but it would ruin the Vines, as Roses are so subject to mildew; the Vines would soon suffer. 2, Yes, if your Vine-roots are in the border you cannot grow vegetables in the same without injury to Vine-roots. We have seen bedding-plants grown, but do not advise it. 3, We certainly would not advise a petroleum stove in addition to existing flue. 4, The best way to heat would be a small boiler, such as the Loughboro', or a similar one not needing brickwork.

611—**Treatment of young Vines.** — Kindly inform me through your valuable paper what to do with two young Vines I have? They are in 10-inch pots, and they are about 3 feet long. There are side shoots growing out from them. Should I let them remain or take them off, as I intend putting them into a border of a hot-house next season? Kindly let me know how to train them for that purpose, and oblige—NEW BEGINNER.

*** *Allow your Vine to make a strong shoot from base stopping back all others; in time you may cut away last year's wood. If you require a long cane you may allow a growth near top, stopping back others. You only need one strong cane for planting.*

612—**Cutting back Alders.**—Can I cut off some roots of Alders, which have grown into a trout stream, without injuring the trees? The trees are old, and the roots cause great obstruction to the stream.—ALNUS.

*** *The Alder is a very accommodating plant, and can be cut as freely as the Willow.*

613—**Smilax leaves turning yellow.**—Please can you tell me the cause of Smilax leaves turning light-coloured?—CONSTANT READER.

*** *Probably your plants are starved, suffered from drought, or in too cold a position.*

614—**Transplanting Begonias.**—In planting into small pots from shallow boxes Begonias which have rooted freely should the tubers be placed under the soil, or like Cyclamen, with more or less of the tubers standing above the soil? If the former, how much soil above tubers?—W. E. M.

*** *You will find it best to just cover the tubers with soil. It is a great support to growth; an inch of soil about the tuber is ample.*

615—**Celosias.**—I sowed some seed of Celosias the beginning of March, they came up thickly, and when they had shown a few leaves were planted singly in small pots. They are now about 3 inches or 4 inches high and are showing bloom. Can you tell me the reason of their doing so?—NO NAME.

*** *Without seeing your seedlings it is somewhat difficult for us to determine what is wrong. The plants invariably show their crowns pretty early, and these continue to increase in size as the season advances. The best system of culture is to sow the seed in boxes or pans, in gentle heat, during March, taking care to keep the seedlings near to the glass to avoid weak and sickly growth. You did right to pot up the seedlings singly, but from that time until the crown is formed they should be grown on fast in a gentle heat, and planted out in June. Perhaps you allowed the soil to get dry—these plants enjoy a liberal quantity of water.*

616—**New Potatoes at Christmas.**—I should be glad to know if it is possible to have new Potatoes in at Christmas? When should they be planted, and best sorts? What temperature should I try to obtain in a low pit heated by a flue? Would it be possible to grow them for same time on a hot-bed with frame?—SOLANUM.

*** *You will need to secure seed from an early Ashleaf in June. Expose in open when lifted. Plant in September in your frame, either with manure or flue, but do not force hard, and it is important to have well-ripened early seed and this year's roots.*

617—**Treatment of Fig-trees.**—Fig-trees were root-pruned last winter and were pinched about the end of March, as directed under "Fruit Garden" in No. 941, but a large proportion of the Figs, like those sent, have already dropped off. What is the cause?—S.

*** *Your Figs have had too much water overhead, probably too late in the day, and we fancy you have not stopped the shoots hard enough. They need stopping every ten days, or the first crop will drop, as the new wood takes all the sap from the fruiting-wood, and your trees may suffer from both causes named. Stop hard, give less moisture direct overhead.*

618—**Peach-tree leaves blistered.**—I enclose some leaves taken from two young Peach-trees growing against a wall (aspect S.W.) in the open air. This red blister appeared on the leaves last spring also. Can you inform me as to cause, results, and means of prevention?—H. A. L.

*** *You will see several similar cases to yours (in your country). We fear there is no prevention in our erratic climate. You had better remove bad leaves, and new growth will soon hide injury.*

619—**Shingly gravel.**—Kindly advise me what to do with some shingly gravel? Last year I had several loads brought in, and cannot get it to bind at all. It is a complete nuisance.—ONE PERPLEXED.

*** *Your only remedy is to obtain some fine gravel of a clayey nature. Spread it on surface, and roll in wet weather.*

620—**Peach-trees unsatisfactory.**—I enclose a couple of leaves from a Peach-tree on my garden wall. Will you kindly say what can be done to get rid of the insect, which I suppose has destroyed the leaves there? A great many of the leaves are similarly affected —X. Y., *Dublin.*

*** *Your Peach-trees are blistered; this is the result either of frost or cold wind on the tender foliage. The insect you note is green-fly. This you can soon get rid of—first go over the trees, remove worst leaves, burn them, then syringe in the evening with Tobacco-water or Quassia. Repeat the syringing in a few days if any insects escape. A pint of Tobacco-water to 3 gallons of soft water is a good quantity.*

621—**Vines turning brown.**—Will you kindly tell me what is the matter with my Vines, as they are all turning brown as if burnt? It appears as small brown spots on the under side of the foliage, which increase rapidly and join each other till the whole leaf is quite brown and useless. I may say the Vines are about eight years old, roots outside, house heated just enough to keep out frost, and the Vines have been treated in quite the usual way. The leaf inclosed is of the Gros Maroc variety, but Hamburgh and Colman are also all going in the same way in the same house.—RUSTY.

*** *Your Vines are infested with red-spider caused by drought and insufficient atmospheric moisture. Your only remedy is to give more moisture in house. Syringe freely at closing time, mix a little sulphur in the syringing water, and fumigate once or twice till clean.*

622—**Overcropping Vines.**—I often read in your paper the evils of overcropping, but want to know the number of bunches one may leave on Vines without injuring them. Mine is a very small house, about 14 feet long, span-roof, and I have two Vines in it, one each side; one with three rods and the other four. They are Black Hamburgh Vines. Last year there were 87 bunches on the two; now there are 150 bunches showing on the two, and this after the ones we consider it advisable to remove have been removed. Is this too many to leave on? The Vines are a good age.—L.

*** *Last year you had quite double the number of bunches a Vine should be allowed to carry. One to every 18 inches of rafter is enough. More Vines are ruined by heavy crops than all other causes. Your rods should not carry more than from four to six bunches each, according to size of bunch and vitality of Vine.*

623—**Peach-tree leaves injured.**—I enclose some leaves from a young Peach-tree planted last November. I should be obliged if you would inform me what the disease is and its cause and treatment. The tree is in a warm position facing south-east, and has been kept moist at the roots by a thick mulching, but has not been watered.—H.

*** *See reply to "X. Y., Dublin." Yours is a similar case—blister, probably caused by cold winds. The north-east winds of late have played havoc with the tender foliage. We do not detect any insect pests, and your only remedy is to remove affected foliage. There is nothing wrong at roots, merely cold, and the tender foliage scorched.*

624—**Treatment of Seakale.**—I have been told that when I take off the blanching stuff I had on my Seakale (sand and peat) that I should cut all the young growth back to the old hard crowns, or, in fact, cut it all down level with the ground. Would this be right treatment to follow, as mine is growing very high?—ENGLAND.

*** *You should have cut your Seakale level with the soil when you removed the soil and sand. Do so at once, then when new growths push out select best shoots. Remove all others—one to three shoots at a plant are ample to secure strong crowns for next year.*

625—**Vine-leaves blighted.**—I shifted a three-year-old Black Hamburgh Vine from the side to the end of my greenhouse about the end of January. It is trained in two stems horizontally along the roof—border outside. It broke all right and has plenty of leafage and some bunches appearing. The lower shoots grow well, some I have pinched being 9 inches or more, but the point shoots appear very stunted, and something is wrong with the leaves. I see no insects about. I enclose some leaves, and please say what is wrong? Is it sun, moisture, or too close atmosphere, or disease? House south aspect, 9 feet by 8 feet, side ventilation.—G. S. M.

*** *Your Vines are covered with red-spider. Use a solution of sulphur in tepid water, and give more atmospheric moisture. It is caused by lack of moisture and dry heat. Shade for a few days, and get new growth. Keep Vines close and moist.*

NAMES OF PLANTS AND FRUITS.

*** ***Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the*** EDITOR OF GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants —*Mrs. Usher.*—1, Hose-in-hose Polyanthus; 2, Epimedium pinnatum; 3, Globe-flower (Trollius europæus); 4, Anemone alpina; 5, Double Meadow Rockfoil (Saxifraga granulata fl.-pl.); 6, We must see flowers; 7, Saxifraga pyramidalis; 8, Centaurea montana; 9, One of the Lungworts (Pulmonaria saccharata). ——*A. Tyro.*—You should have numbered the plants and kept duplicates; that is the way to adopt. No. 1 was shrivelled beyond recognition; 2, Ribes aureum; 3, Pyrus japonica; 4, Berberis Aquifolium, sometimes called Mahonia. All the plants named will succeed in ordinary soil and position. Not one is difficult to grow You must, however, plant in the autumn.——*Constant Reader of* GARDENING.—Narcissus odorus.——*A. L. O. E.*—You have not numbered the plants, so we do not know how you will recognise them. We name those most distinct in colour so that you may be able to tell which they are. The Fern is Davallia canariense; the silvery-leaved plant, Cineraria

maritima, and the white flower, Eupatorium riparium. Your other questions are answered fully elsewhere.——*S. M. M.*—White flower is Saxifraga Wallacei. Kindly send flowers of the other plant.——*W. C.*—1, Dicentra formosa; 2, Asplenium bulbiferum; 3, Please send fertile frond; 4, Not enclosed; 5, White Snake's-head Fritillary (Fritillaria Meleagris); 6, Double Jew's Mallow (Kerria japonica fl.-pl.).——*X. Y. Z.*—1, Woodruff; 2, Herb Robert (Geranium Robertianum); 3, Selaginella denticulata; 4, Eulalia japonica; 5, Adiantum scutum; 6, A. cuneatum; 7, Selaginella Kraussiana; 8, S. arborea; 9, Primula verticillata; 10, Celsia cretica; 11, Summer Snowflake (Leucojum æstivum); 12, Doronicum austriacum. The Selaginellas, Ferns, Eulalia, Primula, and Celsia want a greenhouse; the other plants are hardy.—*Mrs. U.*—The yellow flower is Kerria japonica; the blue one Scilla campanulata; the other S. c. alba, the Scillas being Spanish Scillas.——*Col. P., Guildford.*—Henbane (Hyoscyamus niger).——*F. Williams.*—Narcissus odorus.——*Mrs. Butler.*—It is impossible to tell the name of the shrub unless flowers are sent. There are many things of a similar description in bloom now.——*W. J. M.*—1, Amelanchier canadensis; 2, Sparmannia africana; 3, Countess of Haddington Rhododendron; 4, Eranthemum nervosum.——*G. B. H.*—1, Brodiæa uniflora; 2, Valeriana dioica; 3, Veronica saxatilis; 4, Cardamine pratensis fl.-pl.; 5, Cerastium arvense grandiflorum; 6, Polemonium reptans.——*Somerset.*—1, Salix cinerea; 2, S acuminata; 3, S. incana.——*Mrs. Hicks.*—1, Retinospora squarrosa; 2, Thujopsis dolobrata; 3, Juniperus Bermudiana; 4, Phillyrea lævis; 5, P. latifolia; 6, Euonymus radicans variegatus.——*Match*—Alonsoa incisa.——*F. Loveland.*—1, Epimedium pinnatum; 2, Tropæolum tuberosum; 3, Which we presume was this number, but no label attached, is Selaginella Kraussiana; 4, Abutilon vexillarium.——*Zoe.*—1, Ribes aureum; 2, Mossy Rockfoil (Saxifraga hypnoides); 3, Much shrivelled, but no doubt variegated Elderberry; 4, Phlox subulata; 5, Sedum Telephium.——*L. Marshall.*—Serapis cordigera.——*D. S. M.*—Chrysanthemum lutescens Etoile d'Or (the Yellow Paris Daisy or Marguerite).

Catalogues received.—*Plants and Novelties for 1897.*—Messrs. J. Veitch & Sons, King's-road, Chelsea, London.——*New Roses, &c.*—Messrs. Wm. Paul & Son, Waltham Cross, Herts.——*Garden Watering Apparatus, Hose and Fittings, &c.*—Messrs. Merryweather & Sons, 63, Long Acre, London, W.C.——*Pansies and Violas.*—Wm Sydenham, Tamworth, Staffs.

LAW.

Chrysanthemum show—meaning of rule (*M.N.C.S.*).—In November last you competed at a Chrysanthemum show and the judges awarded you a prize. By rule 16, "Members' prizes will be paid between four and five o'clock on the day of exhibition, but the committee have a discretionary power to withhold the same. Prizes not then applied for may be had at the following meeting. All prizes unclaimed on the 31st day of December shall be forfeited to the society." You did not apply on the day of the exhibition, and you did not claim until the end of April when you were informed that the prize was forfeited under rule 16. This rule applies to members, and apparently to members only, but it does not appear whether the exhibition was open to all or to members of the society only. If you are not a member the rule does not apply to your case, but if you are a member it does apply if you had notice of it, which you probably would have, either through the schedule of prizes or in some other way. You do not say whether there has been another meeting since November; if there has been another meeting the rule applies and you cannot recover; but if there has not been another meeting, the operation of the rule seems to be void for uncertainty, as the former part of the rule gives you the opportunity to apply for payment at the following meeting (which will be after December 31st), while the latter part of the rule works a forfeiture if application be not made by December 31st. So if you are a member, and there has been no meeting since November, you may sue in the County Court for the amount of the prize awarded to you. The version of rule 16 quoted by the secretary is very different from the rule itself as printed in the schedule, but it is the printed rule which is binding, for it is that of which you had notice.

Removal of plants, tiles, etc., by garden tenant (*U. S. T.*).—We are obliged for your note with the enclosed cutting from a contemporary, but we adhere to the opinion expressed on page 130 (May 1), in reply to inquirer. Remember, that question was asked in respect of a private garden and not in respect of a market garden or nursery ground; market gardeners may, under the Act of 1895, claim compensation for fruit-trees, etc., permanently set out, and may remove those not permanently set out, while nurserymen have long been able to remove trees, etc., planted for sale. Note the words in the reply to which you allude "permanently affixed to the freehold;" border-tiles are not usually permanently affixed, and so are often removable, but no question was asked about these on page 130. Neither was there any reference to a pigeon-house, which, if built of wood and lightly affixed would be removable, but not if brick and tiles. If you really wish for an authority to be given, you may be referred to the case of Empson *v.* Soden, where it was held that a tenant could neither remove flowers nor a border of Box, although planted by himself. As Parke (Justice) said, "it might be as well contended that a tenant could take up hedges." See also Woodfall's "Landlord and Tenant."

POULTRY AND RABBITS.

Poultry farming (*G. W.*).—The subject of poultry farming is one which opens up a very wide field indeed, and there are a large number of men well acquainted with poultry management who assert that it is an impossibility to make such a concern on a large scale pay its way, let alone make a profit. I do not go so far as this; in short, given a good manager, a good class of stock, a good site, and a good market within easy reach, I believe such a venture could be made a good source of income. The manager is practically the mainspring of the whole concern. He must never weary of his work; he must watch carefully to stop every loophole where waste might occur; he must always be on the alert to make new departures if openings for such present themselves; and he must be ever on his guard to check any tendency to aim at show points in his stock rather than those which incline to usefulness and profit. I contend if the showyard element comes in the venture is doomed to failure, so far as the mere production of eggs and poultry are concerned, because, in the former case the manager must cater for those patrons who love poultry from the show standpoint. A large range of land is not desirable; a ten-acre field properly divided into runs will give all the accommodation required, and additions may be made whenever necessary. Such a concern must grow gradually; it would be sheer madness to put down 500 laying hens at a time when eggs are a glut in the market; besides, the hens themselves must be sold at a loss in the coming autumn, for they could not pay under any circumstances if kept through the winter. Again, there must be a definite plan to work upon from the start; it is not enough to buy Fowls and let them take their chance and do what they like, but they must be bought or bred for a special object, and that must never be permitted to slip out of sight. The breed of Fowls kept must be judged and selected solely for its table and egg-producing properties, irrespective of any feeling on the part of its owner, and this in many cases will prove a stumbling-block to success. In another article I will briefly state the best method of starting, as well as the mode of working such a business, and give a few hints on the proper selection of stock.—Doulting.

Death of Rabbit (*Eric L. Dickenson*).—We do not undertake post-mortem examinations upon poultry or Rabbits. More young Rabbits die through an injudicious supply of green food than from any other cause, and one cannot be too careful in this respect. It must never be given in a damp state, or even freshly gathered, but should be spread out to dry, not too closely packed or it will heat. An excess of green food in the case of young Rabbits from six weeks to six months old causes dropsy, and, although continuing to eat with a good appetite for a time, if no means be resorted to for the recovery of the patient its relish for food lessens and it pines away. An animal suffering from this complaint should be allowed plenty of exercise, be supplied with a variety of dry food, such as split Peas, Barley, Malt coomes, the green food greatly reduced in quantity, and a few sprigs of Sage, Thyme, and Parsley be given from time to time, or some dried Oak-leaves. A critical time with young Rabbits is from the eighth to the tenth week, as at this period they are passing through their first moult. During this process of nature great care is needed in keeping them warm and in supplying them with good nourishing food. They can be very much assisted in the renewing of their fur by being supplied with soaked Peas and Barley-meal mixed into a stiff paste with some boiled Linseed. You cannot do better than let your young Rabbits have plenty of exercise, taking care that the run is quite dry, clean, and free from draughts.

BIRDS.

Death of hen Canary (*M. R. C. S. "Burdie"*).—Your hen Canary in all probability died from exhaustion, as from the appearance of its digestive organs it had not partaken of food for some time before its death. There is always a certain amount of risk in suddenly introducing a cock and hen Canary into a breeding-cage, the chances being that the cock may prove rough in his treatment of the hen, a fierce war ensues, and may even end in the death of the hen. In the case of your bird, she did not take to her mate, as you say, and was, therefore, probably driven about the breeding-cage by him. This, and being in a strange place, caused her to become too nervous to obtain necessary food for herself, so she became exhausted. Birds are so easily alarmed, and are such sensitive creatures that they are often seriously injured through a sudden shock to the nervous system. In preparing birds for breeding the cages containing them should be placed side by side for a few days before putting them into the breeding-cage together, and be supplied with a little hard-boiled egg and bun crumbs.

626—**Wood Pigeons.**—Kindly inform me the best way of destroying Wood Pigeons that devour young Cabbages? What kind of poison would be best and how used?—Ireland.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

627—**Dandelion wine.**—Can you or any of your readers give me a recipe for Dandelion wine? I have had it in Gloucestershire, but no one could tell me the exact method.—A. S. R., *Kilkeel.*

Crystal Palace Commemoration Show.—In commemoration of the Jubilee a flower-show will be held at the Crystal Palace on June 23rd and 24th next, when £350 in prizes and a special gold medal are offered.

Tulips from Mullingar.—I am sending you a few Tulips from a collection of mine of some thousands. I am told they are abnormal. Please say are they above the usual size? I had intended showing them, but they were three weeks too late in blooming for our show in Dublin.—Richard Dowling, *Monilea.* [*Very fine indeed. We should like to know how you grew them. The flowers were the largest we have seen.*—Ed.]

Saxifraga McNabiana.—This is one of the best of these forms that are more or less allied to the S. Cotyledon group. The flowers are produced in a rather close panicle, white, and numerously spotted with crimson-red. This latter character renders it at once distinct and effective. It is an easily-grown kind, and should be freely cultivated for its intrinsic worth.

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LOBELIA EMP. WM., best dark blue, and Maid Mooray, blue, with beautiful white eye. All true from cut tops, 50, 1s. 9d.; 100, 3s., free.—V. SLADE, Staplegrove Nursery, Taunton.

CHARMING HARDY CLIMBERS.—"Calystegia pubescens," a double variety of American Bellbine, bears a beautiful pink blossom, double as a Rose; also Calystegia rosea, a large pink and white Bellflower. 4 roots of each of these useful climbers (the true varieties), 1s., free, with cultural directions.—Mrs. BANGER, "The Lady Florist," Southwick, Brighton. Established 9 years.

COBÆA SCANDENS.—Wonderful rapid climber, quickly covering arches, trellis, &c.; handsome violet Bellflower. Grand effect this season. 4 strong plants, 1s., free.—Mrs. BANGER, Southwick, Brighton.

THE COMMON WHITE DOUBLE SNOWDROP, 1s. 6d. a hundred; 16s. a thousand.—Direct F., Balrath Burry, Kells, Co. Meath, Ireland.

DAHLIAS.—Cactus, 12 grand varieties, including Lady Penzance, Mrs. Peart, Bertha Mawley, Delicata, Countess of Pembroke, Countess of Radnor, St. Catherine, Kynereth, Beauty of Arundel, and 3 others for 2s. 6d. 12 Pompones: Geo. Brinckman, Bacchus, Lelia, Crimson Beauty, Phœbe, Vivid, Pure Love, Red Indian, Ariel and 3 others, for 2s. 6d. 12 Show: Mrs. Gladstone, Duke of Fife, Mrs. Langtry, Mrs. W. Slack, John Walker, Harrison Weir, Reliance, Jas. Vick, Pandora, and 3 others for 2s. 6d.—W. T. HADFIELD, Queen-street, Royton, Oldham.

GARDENING ILLUSTRATED.

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ROSES.

NOTES UPON INSECT ENEMIES AND DISEASES OF THE ROSE.

Although several notes have appeared from time to time upon this important question, it is certain from the many queries upon the matter that several readers have missed them. I am not aware of any plant subject to more diseases and insect foes collectively than the Rose, and yet there are few of these that cannot be successfully battled against with a little care. It is most essential that we take our measures promptly, and do not use too strong an insecticide. Several species of fungi attack Roses; of these the most prevalent and disastrous is known as

Mildew (Sphærotheca pannosa).—This very insidious foe is brought on by neglect in maintaining a fairly even temperature, injudicious ventilation, drought, and, in fact, any serious check to young growth. The leaves become blistered and distorted; when in its younger stages mildew appears as a light dusting of grey powder. It soon pervades the whole plant, and entirely stops all future beauty. Although there is little doubt its spores exist in the soil and develop under favourable conditions, you need have no fear of future results provided care be taken in the direction I have pointed out. Most insecticides are warranted to cure mildew, but if you add a little sulphur and keep the solution well on the move during application, a far more effectual and less unsightly dusting is given. But no measures will be of real use unless promptly applied and the cause of attack duly remedied. Another form of mildew is seldom found except under glass. It attacks the lower part of the leaves in irregular patches, and soon forms brownish spots upon the upper portions of the leaves, which in a short time wither and drop off. It is far best to cut off all such leaves at once, and then persevere for a few days with the weak solution as already advised. The

Rose-rust is, on the other hand, seldom found under glass, and never upon the Teas and Noisettes in the open. A round or oval lump of pale yellow powder forms upon the leaves or young wood early in the season; this is called the summer form. In the autumn, this develops into numerous brown or rusty spots all over the foliage, which soon appears quite scorched and dies off. Fortunately, the class of Rose it attacks are not good autumnal bloomers, and it is only injurious on account of check to growth, and its disfiguring of the Rose garden at a time when Teas, Chinas, and others exempt from its effects, are most beautiful. There appears no remedy, nor can I assign any cause. It has been very prevalent during both hot and cold, wet and dry seasons, upon all classes of soil, and under a score or more distinct treatments. Again, it has been singularly absent during what was apparently similar conditions, and upon quarters or beds of Roses adjoining one another. A dark, sooty, and sticky deposit is sometimes found upon the foliage; but as I never found this except where aphides had been allowed full sway, and it forms upon their excrements, we can avoid it by due care when battling with the aphis or green-fly. Where in a bad state cut off the worst affected leaves and add a tablespoonful of paraffin-oil to a gallon of solution when syringing, washing this off again with a clear application of tepid soft water a few minutes later. The paraffin loosens the sticky encrustation.

There are considerably over a hundred species of insects more or less harmful to Roses, the chief being

Green-fly, red-spider, thrips, and scale. All can be checked by using a weak insecticide early and freely, but none by a strong application, sufficient to kill at once without also seriously injuring the Rose, and generally doing as much, if not more, harm than the insect itself. The syringing is a check upon thrips and red-spider, and when used in conjunction with careful fumigation we need run little risk of injurious attacks. I would give a very weak but prolonged fumigation late in the evening, and follow this early in the morning with a thorough syringing of any approved insecticide. The two may be used sufficiently strong to be quite safe, while the combination is most deadly.

Scale you must take other measures with. It is a small brown-shelled insect, and sucks the life out of any plant. No washes can be entirely successful without harming a Rose in full growth, so you must use a stronger solution and apply direct to the insect pest with a small brush or stick. When leaf is off thoroughly wash the ripened growth with a stronger solution; but scale once established is very difficult to eradicate.

The larvæ of cockchafers and other insects feed upon the roots, and must be captured where prevalent. Some of the weevils attack both roots, growth, and blooms. These we must watch for at night, and when it is discovered which is the marauder prompt measures must be taken. Two very handsome beetles are most destructive to the Rose blooms. The

Rose-beetle is one of our most handsome British insects, while a smaller form, almost equally handsome in its metallic green and glossy covering, will quickly spoil half-a-dozen promising blooms. Only watching and hand-picking can be available here. The same applies to the small white maggot that eats its way into the stems of Briers and young Rose growths. This is the larvæ of the stem-boring saw-fly. A green caterpillar and a deep brown-coloured grub or maggot also do much damage early in the season. Both of these eat out the growing shoot, twisting the young leaves around for shelter, or else feeding upon the Rose-bud itself. These are the most destructive insect foes, and at the time of writing are becoming unpleasantly prominent once more.

Usefulness of birds.—Do not destroy these, especially the lesser warblers, fly-catchers, tits, and hedge sparrows. I note the gold-crested wren and one of the lesser warblers are especially busy among our Roses already. They cannot possibly be after anything but insects, and I have even seen our much-abused sparrow with open beak simply scooping in the green-fly or green dauphin, as it is known in many localities. I strongly contend that birds are our very best friends, and most inveterate foes to insect pests, and could easily name a score or more which I have more than once watched busily feeding upon insects where no fruit or other attraction existed. Rose-galls are sometimes formed by insects, but they are not dangerous.

Diseases.

Canker is the worst. This we do not understand, neither its cause nor any reliable remedy. We do know that a sudden removal of a large portion of active growth has a tendency to cause it; but, on the other hand, in many cases where it is the custom to cut down the plants of climbers—and it is these the disease of canker most affects—while in full growth and directly blossom has been secured, canker does not put in an appearance. We also find it upon extra strong growers, worked upon unsuitable stocks, that could not develop sufficiently fast to accommodate the swelling Rose growth at the junction. Many of the Teas, and some of the other classes, will develop canker when worked upon the Manetti-stock, but we have found it upon Roses of the same varieties when growing on their own roots; it most frequently attacks Maréchal Niel and William Allen Richardson. Cutting away the part of knotty excrescence and applying fresh cow-manure has sometimes healed it over and stopped the disease; but this cannot be relied upon, nor can any of the other so-called cures. Fortunately, it is not contagious, and we need not fear to plant another Rose side by side with an affected plant, the second one thriving in the most amazing manner when compared to its neighbour.

A. Piper.

Dwarf Roses.—Will you kindly give me the names of a few dozen Roses of dwarf compact growth? I wish to obtain a few, as tall-growing Roses will obstruct the view where I wish to plant them.—Pant.

*** All of the varieties named below grow from 2 feet to 3½ feet, and are very compact. There are many more, but these are free-flowering and good in every respect: Alfred Colomb, Baroness Rothschild, Marie Baumann, Marquis de Castellane, Merveille de Lyon, Captain Christy, Augustine Guinoisseau, Lady Mary Fitzwilliam, Viscountess Folkestone, Edith Gifford, Madame Bravy, Souvenir d'un Ami, Niphetos, Mme. Falcot, Souvenir de la Malmaison, and the Chinas. Any good nurseryman's list will give you a description of their colours.

Marechal Niel sickly.—Whenever I have had a garden in my somewhat nomadic existence, I have always subscribed to your excellent paper, and derived great help from it. Would you kindly tell me what I should do to my Maréchal Niel, a leaf of which I enclose? I got the plant in January last and plunged the pot in good soil in the greenhouse border facing south. I kept the frost out all the cold weather with artificial heat, and the Rose got on excellently, throwing out beautiful healthy shoots. On 21st February I

counted thirty buds on the plant. On 2nd April I was away from home for five days, and the buds were not looking so healthy on my return. I cut the first blossom on 18th April, and after that I had about eleven flowers that came to perfection, the rest all falling off at the pedicel, and now the leaves too are turning yellow and falling. There are one or two young shoots coming on. I did not wish to turn the Rose out of the pot, as I am leaving here and so wished to take it away with me. Would you tell me whether you think I should cut it back, or if it is likely to bear any more flowers?—A SUSSEX ROSE.

*** We have little doubt your Rose was neglected as regards water at some time, or received too strong a dose of liquid-manure. It may possibly be canker, but we think not, from the leaf sent. Cut back to the healthy young growths. You will get no more bloom above these.

Green-fly on Roses out-of doors.—Is syringing with soft-soap and water the best way of destroying the green-fly? If so, in what quantities should it be used? I am told that it should be washed off the plants again with plain water before the sun comes on them. Is this really necessary, as it, of course, is double trouble?—ABBEY.

*** One oz. of soft-soap to a gallon of water. It is not necessary to wash again with clean water. See an article upon Rose pests and diseases appearing in this issue.

Roses *(Chas. M., Manchester).*—By all means leave the W. A. Richardson alone at present. Next spring you should have some grand flowers. The Gloire de Dijon can be allowed to grow at will, seeing you wish it to cover the roof. This is a most accommodating Rose, and is satisfactory whether pruned or not.

Best climbing Rose for north aspect *(A. Learner).*—Reine M. Henriette or Cheshunt Hybrid, reds; Gloire de Dijon, buff; Aimée Vibert or Miss Flegg, whites; or Rêve d'Or, yellow.

Some uses for wire-netting.—I have read the article on wire-netting in GARDENING, May 1st, page 122, and should be grateful to your correspondent if he would advise the correct time to start this attractive mode of gardening? I have about 30 feet of ugly town wall to contend with. Most of it faces north.—LIMERICK.

*** You cannot do better than commence at once. A few hardy Ferns could be made use of this season; also Musk, dwarf Nasturtiums, Sedums, the Creeping Jenny, and others. The Shamrock, Calvary Clover, Irish Ivy, and the bright coloured Scotch Flame-flower would soon be showy. But if you use evergreen Ferns, such as the Scolopendriums or Hart's Tongues, or the creeping Ivies, the wall need never be bare. There are some very pretty pieces of native Mosses that might also be transferred to your wall, while the number of subjects suitable for summer use are too numerous to mention.

Tufted Pansy Blue Cloud.—This is getting quite an old variety, yet for an early display in the open border it is still one of the earliest and most useful. It is a white flower, heavily edged with deep blue, and although the blossoms are not so refined as those of many of the newer sorts, its shortcomings in this respect are more than compensated for by the extreme earliness of its display. It is also free-flowering.

Corydalis nobilis.—The dense, massive heads of blossom on this fine border perennial are now nearly at their best, and will remain some time in good condition. For association with such things as Dentarias and Trilliums it is one of the best things we know. It is not so easily increased as the other species, but, left in one position for three years, it will make a very handsome tuft of its pleasing foliage, apart from its golden-yellow, green-tipped blossoms. In a mixture of equal parts of peat and loam and kept constantly cool, shady, and moist, this is a most desirable plant.

Anemone sylvestris (Snowdrop Anemone).—The pure white flowers of this species are to our gardens in spring what the well-known Japanese kinds are to them in the autumn, and while this species can scarcely boast of the large wax-like flowers of A. japonica alba, it is really very effective in broad masses at this time. Very pretty, too, are its drooping, pendent buds prior to expansion.

THE KITCHEN GARDEN.

SPRING LETTUCES.

At this season there is often a scarcity of good Lettuce, and this applies to large gardens as well as small; indeed, amateurs who require Lettuce at this season—and these are many—would do well to grow specially for spring supplies. Glass protection is often considered necessary, but good plants may be grown in the open if sown at the right season, and care taken in wintering the plants. The variety illustrated is one of the best for spring use. Perfect Gem is one of the newer types, and worthy of the name; it is also handsome, being of compact growth, of a deep green colour, and, what is necessary in an early Lettuce, of quick growth. It soon hearts or turns in, and there is little waste. It often happens one loses the crop sown in the early autumn for spring supplies, and is obliged to fall back on seed sown in heat, or what is termed forced Lettuce. This is the best of its class for sowing under glass on account of its early growth. We have plants at this date sown the first week in February fit for cutting the end of April, or say in twelve weeks from time of sowing the seed. Of course, this latter is frame culture, and I fear many amateurs require their frames for other purposes than Lettuce, but it is well to point out to those who can give space the advantage of such supplies, and the variety

Cabbage Lettuce Perfect Gem. From a photograph sent by Mr. J. C. Tallack, Livermere Park Gardens, Bury St. Edmunds.

named is one of the best. On the other hand, it is equally good for sowing in the open as a first crop. Seeds sown in a favourable position will give nice heads in a short time if not too much crowded in the seed-beds. There are other equally good varieties, but some lack size, others the good colour of Perfect Gem. Golden Queen is a charming variety; small, certainly, but one of the earliest Lettuces grown, and of delicate flavour. It is a golden-leaved variety, and well adapted for the salad bowl. It is as quick in growth as Perfect Gem, but smaller, and a useful forcing variety. Another distinct type of early Lettuce is Golden Ball, and, like the Queen, is a most useful frame Lettuce. The latter I find invaluable in hot, dry summers; it resists drought well, and is not so soon infested with green-fly as larger kinds. There are others, such as Early Paris Market, an excellent spring variety, of good quality, and rapid growth.

It is well known that to get abundance of Lettuce in spring one must sow in the early autumn if glass protection cannot be afforded. An open quarter, firm soil, not wet but well drained, will give best results, and the worst enemy is the slug. Well prepare the beds by dressing freely with soot, lime, or other preventives. I find wood-ashes spread on the surface a great help, and any charred garden refuse is equally beneficial. Gas-lime in land which is much infested is equally efficacious, and though it needs care in application, it is quite safe used at the right season. We spread it on the surface a few days before digging or forking in, and then there is no difficulty, the lime being well broken up. An open position is needful to get hardy growth, which is needful to stand exposure. Much depends upon the date of sowing; of course, soils and localities alter dates, but I find that from the 10th to the 20th August is a good time to sow for spring supplies. An earlier date may be necessary in cold districts or with heavy soil. For sowing at that season, such kinds as Hardy Hammersmith, Lee's Hardy Green, Stanstead Park, or All the Year Round are excellent varieties. Cabbage Lettuces turn in earlier and winter better than Cos varieties. Another point is thin sowing. If sown too thick the plants will not winter well. Each seedling must be given space, and though the plants make little growth from November to March, if crowded they decay badly.

PLANTING for spring crops is better done at the end of February or early in May, according to weather, and if possible lift carefully to preserve the roots intact. In planting give a rich soil, a warm, sunny border, and plant firmly. Plants treated thus are fit for use early in May, and at a season they are appreciated. If planted at foot of a south wall they are earlier, but here they require more moisture. I do not advocate autumn planting. I admit it is often done, but there are great losses, which amateurs can ill afford. The plants winter well in the seed-beds, but in severe weather, with cutting winds, well repay shelter in the way of litter or dry Bracken.

A few words as to sowing in heat in the early part of the year in case of loss of plants or failure to sow at proper time. I sow in a gentle heat but remove to cold-frames before the plants get drawn. It is also best to transplant the seedlings when fit to handle to a warm bed of leaves or manure with a glass protection. Perfect Gem or Golden Queen are excellent types for forcing, and if warmth cannot be employed by sowing in a cold-frame in February, pricking out in the open on a warm border in April, good produce may be secured by end of May or early in June. Probably this is the best mode of culture if room and glass are short to forward the crop. I have also seen good produce in favourable seasons from open-air sowing in February, if a little extra care is given the plants, sowing an early kind and not too thick. Many shifts can be made to forward a crop, and the plants during growth should never suffer for want of moisture. Doubtless, when all points of culture are considered, the early autumn sowing is the best, as then the plants have more strength. They grow away quickly in the spring, and are much earlier. G. WYTHES.

Thinning crops.—The thinning of various crops should now go on apace until only the permanent seedlings are left. Surplus plants if left too long do more harm than weeds ever, as being confined to the drills they are more likely to choke and distress those which are to remain. I prefer to have most vegetable crops gone over twice, rather than to finish the work at one operation, first of all thinning the plants to some 2 inches apart, and then allowing a day or two before completing the work as this gives a chance of seeing and allowing for plants which have been injured in going through the first time, and thus preventing gappy or irregular crops. Parsnips will be among the first things taken in hand, and these should eventually stand at from 8 inches to 12 inches apart. At the former distance they should make medium-sized and serviceable roots. Onions should never require thinning more especially where a portion of the crop has been sown under glass and transplanted as this portion should produce plenty of large bulbs, while that sown in drills in the ordinary way will, if all goes well, provide a supply of the moderate-sized bulbs that are often needed and the aggregate weight of crop will be about the same whether thinned or unthinned, provided seed has not been too bountifully used and the land is in good heart. Thinning Onions is tedious work, besides being harmful to the remaining plants. Carrots of the Short Horn type that were sown on a border for early use require but little thinning, and may be allowed to stand about 2 inches apart. Summer Lettuces soon become drawn and spoiled if allowed to stand thickly; Cos varieties should be thinned to 1 foot apart, and the smaller Cabbage varie-

to half that distance. Spinach must also be well thinned to produce the large, fleshy leaves that are best appreciated. While thinning is in progress among those crops sown in their permanent positions, those such as Cauliflower and the like, sown on borders for transplanting, should not be forgotten, as a little timely attention to these while in a small state will do much to provide sturdy plants for setting out. With some idea as to the number of each that will be required, it is easy to thin the plants in nursery beds or drills down to something like this number, and this will prevent starvation. Directly thinning is completed the hoe should be run between the rows to check weeds and loosen the surface-soil, and this will also be an excellent time to give a good dusting of wood-ashes to the various plots.—T.

Dwarf Beans.—The first outdoor batch of these should now be sown on a border which is both sheltered and sunny. It is hardly necessary to make a large sowing in such a position, as these plants will only be expected to give a few early pickings until those sown in the open quarters are ready. Well-manured and deeply-dug soil is essential to good growth, as the plants soon succumb to the attacks of red-spider when grown on poorly cultivated ground. Sow in drills 24 inches to 30 inches apart, and as the seeds sometimes fail to germinate freely, it is well to place them about 3 inches apart in the drills, pulling out later all superfluous plants and allowing 9 inches between those allowed to stand. I also like to sow a small patch of seeds near by at the same time, as the young plants may be readily transplanted and a few extra ones may be wanted for filling gaps. Dwarf Beans do not fruit continuously, and about four sowings, with intervals of about a fortnight between each, will be necessary to bridge the season. Varieties are numerous, and I avoid those with mottled pods in sowing for outdoor crops, Ne Plus Ultra being the favourite. I must also say a good word for Carter's Stringless as a very early and good-flavoured variety. The Golden Wax-pod, too, is a most excellent Bean.—E.

HYBRID ALSTRŒMERIAS.

We have scarce time to miss the varied colour notes of the hybrid Aquilegias before the Alstrœmerias, with their harmoniously blended tints, are with us to take their place. Year by year the flower-stems are more numerous and stronger. The hues vary from cream to crimson-pink, the lighter coloured pencilled with dark chocolate and the deeper tints with yellow. Alstrœmeria aurantiaca also grows well here, the tallest specimen being close upon 5 feet in height, but its colours appear dingy in comparison with the varied tints of the hybrids. I raised the whole of my plants from seed, and when the tubers were formed the advice that they should be planted at a depth of 8 inches escaped my notice, and as they were but 3 inches below the surface I was prepared for the worst, but those unprotected escaped as scatheless as those which had been afforded a liberal mulch. From this it would appear that in the south of England, at all events, these Chilian plants are absolutely hardy. No flower-lover who sees a breadth of these Alstrœmerias in their full beauty can question their value. They have likewise the property of lasting well in water when cut for indoor decoration, for which purpose they are exceedingly ornamental.

F.

Hybrid Alstrœmerias. From a photograph by Mr. S. W. Fitzherbert, Torquay.

Armeria alpina rosea.—The dwarf varieties of the Thrift are now very showy, crowned with their globular heads of bright rose-coloured flowers. These plants are very useful as edgings, and even when the flowers are past, their close grassy tufts are very pleasing indeed.

TREES AND SHRUBS.

EFFECTIVE BEDS OF SHRUBS IN SPRING AND SUMMER.

It is not usual to see beds of flowering deciduous shrubs planted with bulbs, tubers, or small, low-growing summer or spring flowers, but one can so ensure a permanent bed, which will have a mass of bloom in it both in spring and summer; nor is it common to have borders or beds made of a mass of two or three kinds of herbaceous plants only, underplanted with bulbs; yet by making such beds a grand display of bloom can be obtained in a mass all over a bed several times a year, and a collection of many varieties of several kinds of plants can be had at the same time.

I was never fond of "patchy" effects, such as are too often to be seen both in bedding out and in mixed borders. A mass of one colour, or several shades of one colour, in one place pleases me much better (though in a few of the instances I am going to name, many colours which harmonise will be placed together, and are certainly both charming and effective). I think many people who are anxious to have a pretty garden have no idea of what plants to buy, when they flower, or how they are to be treated, therefore I hope that the few notes I am going to give may be of use to them.

A bed of Ribes albidum (Flowering Currant), Lathyrus, and Scilla sibirica will secure a carpet of lovely bright blue in early spring, a charming feathery mass of white flowers, faintly tinted with pink later on, and then in the summer the Lathyrus will twine themselves up amongst the bushes and produce an abundance of bright rose or white flowers. To obtain this bed the Ribes albidum must be planted in it in the autumn at a distance of 3 feet between each bush, and then a plant of Lathyrus albus or Lathyrus latifolius put in between each of the Ribes all over the bed. The little Scilla bulbs, at a distance of 1½ inches apart, must then be put in about 2 inches deep everywhere where the ground is not occupied with the Ribes and Lathyrus; they must be planted close up to the stem of these all over the roots. The bed must be well dug and manured before it is planted, and mulched every autumn with rotten manure, over which a sifting of mould ought to be put.

A bed of standard and half-standard La France Roses—the standards in the centre and half-standards round the edge—can be made beautiful at two different months in the spring by planting (in the same way) Tulips and Snowdrops all over the bed, between the Roses. The Tulips I recommend for this purpose are the Gesneriana spathulata (also called major), which, with their large crimson-scarlet flowers and blue-black centres, have a grand effect both near and at a distance. These I should plant 5 inches apart, and the Snowdrops about 1 inch apart. This bed will need a thin top-dressing in the autumn of stable-manure, in which there is little straw, and a thin layering of mould sifted over it before the Snowdrops come into flower. This will feed the Roses and yet not cover the Snowdrops too deeply, and the bed will be lovely nearly all the spring, summer, and autumn, as La France is an especially free-blooming Rose both summer and autumn, and also flowers especially well as a standard.

Many people know the Rugosa Rose Mme. Georges Bruant, with its large, double, paper-white flowers, which are produced in clusters, and which cover a strong-growing bush during many months of the summer. Those who do not know it would do well to make its acquaintance. Plant each Rose about a yard and a half apart, and in the spring this bed could be made beautiful by a complete carpet of Primula Sieboldi, planted about 6 inches apart all over the bed. These require to be planted near the surface, and if the bed in the first instance is well manured before the Roses are put in, and then about 2 inches of good soil and leaf-mould placed on the top, and the Primulas planted in it, their roots will run about and quickly spread into a mass, which will produce a great display of bloom. Of these Primula Sieboldi Crimson King is a tall-growing and very effective one, but, if preferred, a collection of many named kinds could be used in various shades of pinks, reds, lavenders, and white, or a packet of mixed seed would in time produce a collection almost

as good. This would need sowing elsewhere, and the seedlings pricked into the permanent beds afterwards. This bed must have a slight top-dressing of leaf-mould, with a little rotten manure in it, every year; but the Primulas must not be deeply covered, though it will be found that they work upwards on their own account.

Everyone ought to have a few of Lord Penzance's Hybrid Sweet Briers in their garden, and my experience is that Anne of Gierstein and Rose Bradwardine are two of the hardiest, most free-flowering, and strongest-growing of them. The one is crimson and the other a deep shade of pink, and a round bed composed of about four of these planted about 2 yards apart would soon form a huge tangled bush, which would be a feature in the summer when smothered by thousands of blossoms, and could be made beautiful in spring by a carpet of St. Brigid Anemones. These produce their large flowers freely, and seem to thrive in almost any soil. All that would be needed would be to so prune the Briers that they did not grow too thickly low down on the bed; but the Briers are best left to grow as they will, and only pruned for a purpose such as this or to keep them within bounds.

The White Mezereon (Daphne Mezereum album) is not so often seen as it deserves to be. A bed of it, each bush planted about 2½ feet apart, would be charming when covered with its fragrant white flowers in the spring, and the bed planted all over with white Sylvia Tufted Pansy would make it beautiful nearly all the summer. This Pansy may be left on a bed undisturbed for years if the dead flowers are cut off and the stems which have borne them are cut back in the autumn, and a sifting of leaf-mould and soil put round the plants for the new growth to root in and spring up through the following spring. It bears freely creamy-white flowers with a small, yellow eye, borne on short stems. Mrs. Robert Jocelyn.

Propagation of Clematis montana (*Ignorance*).—Cuttings of well-ripened wood inserted in sandy soil, and placed in a close case, soon emit roots. Layering is a very sure and easy method of increasing it. Vigorous and thoroughly ripened growths should be secured to the soil with pegs, and treated in exactly the same way as Roses or Carnations. Layering is best done during the autumn. Your Holly-trees may be trimmed during the summer.

Berberis Darwini.—Each recurring spring this showy, useful shrub is striking even in company of myriads of glaring, brightly-coloured Rhododendrons. Yet it is not seen in good condition as often as one would wish considering its great merit, and the ease with which it can be grown, for it is not fastidious as to soil, although I think it prefers warm, light soils. Its propagation is also simple. Short sturdy side growths of the ripened wood inserted in sandy soil in the open in the autumn and mulched with light material as protection from frost and drought strike freely. In very cold districts severe winters and keen easterly winds certainly cripple, and sometimes kill, the bushes, but in such unfavourable situations it surely deserves the protection of a wall. Part of my cottage is covered with it. It has nearly reached the points of the gable ends, and is a most pleasing object all the year round.—J.

Iris Lorteti from Cornwall.—I send you a bloom of this wonderful Iris. It is certainly more striking than even I. susiana. The treatment has been the same.—J. Vivian, *Meadowside, Hayle.*

*** A splendid flower of this Iris, which, it may interest readers to know, was discovered some years ago between Pteis and Hounin in South Lebanon, by Dr. Lortet, a French naturalist. Dr. Michæl Foster, of Cambridge, who knows Irises well, writes of it thus: "Its wonderful colouring puts it by itself as perhaps the most beautiful Iris in the world." The flowers sent by Mr. Vivian are very large, the standards of a delicate lilac, almost white, beautifully veined, the falls copiously spotted with brown, with a dark velvety crimson patch or "signal" in the centre.

Clematis failing (*Bowie*).—Evidently the roots are in a bad way. The plants should be taken up and the roots properly overhauled. Perfect drainage is one of the keynotes to successful cultivation of this lovely climber.

AMARYLLISES.

For many years Amaryllises seemed to go out of fashion, but the recent introduction of so many fine varieties has again awakened enthusiasm for their culture, and it cannot be denied that their general usefulness amply repays any amount of pains which may be bestowed upon them. Their culture is tolerably easy, but why some fail to do them well is because they give them too little heat when making their growth. Others store them away before the bulbs are well matured and in too warm a place; consequently when started the following season they fail to flower, or do so very irregularly. Potting should be performed as soon as the plants go out of bloom, using pots in strict accordance with the size of the bulbs, as overpotting they strongly resent. The compost which suits them best is good fibrous loam three parts and one part leaf-mould and well decomposed cow-manure, with some coarse sand added. After potting, an intermediate-house is the best place for them, this encouraging an early and free growth, and a consequent early ripening of the bulbs. As soon as it can be perceived that growth has ceased, removal to a cooler and more airy structure for a few weeks is necessary, gradually lessening the supply of root moisture and finally withholding altogether when the plants are stored away in a dry, cool place just free from frost, being again introduced into a gentle warmth in spring according to the time they are wanted to flower. If a part of the batch is kept back for later blooming, a little water should be given occasionally, as a too prolonged state of root dryness will cause the bulbs to shrink and render blooming uncertain.

Seedling Amaryllis.

Saxifraga muscoides atro-purpurea.—For covering quickly a large space in the rock-garden, or even on level ground, there are few plants more suitable than this mossy Saxifrage. It is just now covered with its rosy-red blossoms, and the large cushions of it, 2 feet or 3 feet across, are very striking. For clothing the sides and bottom of a miniature ravine in rockwork it is one of the best plants we know, and by pulling the tufts into small pieces and dibbling them freely over the surface, they quickly meet and form a perfect carpet of green, that in spring is covered with its bright pleasing flowers. The plant grows most freely where there is just a suspicion of moisture, and the flowers attain their best colour in full sunlight. It is one of the most charming of all easily-grown rock-plants.

ORCHIDS.

Lælia superbiens and Odontoglossum Roezli.—Is this Lælia a shy bloomer, and what is the best treatment? What is the best temperature for imported plants of Odontoglossum Roezli? Should they be left on the sticks as imported, or would it be best to take them off and repot?—C. S. B.

*** Lælia superbiens is by no means a shy-flowering species. When its cultivation, which presents no difficulties, is thoroughly understood, and the pseudo-bulbs attain to their proper size, each newly-made bulb will produce flower-spikes freely. It is best grown in a pot, which must be well drained, filling up to quite one-half of its depth with clean crocks. Over these must be placed a thin layer of Sphagnum Moss, and the plant potted in the usual manner. The best fibry peat and Moss in equal parts is the proper compost, and during the operation of potting it is advisable to intermix a few rather large pieces of crock with the soil to encourage porosity. One important point is to tie one or two of the large pseudo-bulbs to strong sticks, so as to keep the plant steady in its place, because if allowed to rock about each time the plant is moved it will never obtain a firm hold on to the compost. Grow the plant in a light position in the intermediate-house, and until thoroughly well established water must be afforded with great care, as the old pseudo-bulbs are liable to decay if too much be given at this period. When the new growths are fully made up it is good practice to stand the plant where it will obtain extra sunlight, so that the bulbs may become properly matured. Your imported pieces of Miltonia (Odontoglossum) Roezli should be taken off the sticks they were brought home on, and pot them into small pots or pans. During the summer months a moist, shady place in the Cattleya-house is the best place for them, but it is advisable to remove them to the warm stove or East Indian-house during winter

Bulbophyllum barbigerum.—Most of the species contained in this genus are remarkable for some characteristic, and the most interesting part of the flowers of this kind is the wonderfully sensitive labellum. This consists of a long, thin body surmounted with a tuft of very fine hairs. The slightest disturbance of the atmosphere sets these hairs in motion, and a breath upon the labellum makes it also rock bodily to and fro, giving the whole a grotesque appearance, startling to anyone seeing it for the first time. As the atmosphere gets calmer the movement slows down by degrees, and every few seconds a few hairs take quite a different motion from all the others, so that it is hardly possible to believe the whole thing is not alive. The plant is, unfortunately, seldom seen in collections and rather difficult to obtain. Its culture is not difficult if plenty of heat and moisture can be maintained. Fluctuations should be guarded against, and the plants so grown that nothing heavy or close comes into contact with the roots, the best holding, perhaps, being a piece of Tree-Fern stem lightly covered with Sphagnum Moss. Though liking a fairly clear light, the growth must be screened from bright sunshine and the roots must never be dried. The other parts of the flower are of dingy brown colour, and but few are usually produced upon a spike. The flowers last a considerable time in good condition. B. barbigerum comes from Sierra Leone, whence it was introduced in 1836.

Anagallis linifolia.—This is one of the most brilliant bits of colour at the present time. The plant is dwarf in habit, inclined to trail somewhat, and not more than 9 inches or 12 inches high. The flowers are of a brilliant shade of blue, very intense, and about ¾ inch in diameter. With age appears a zone of a reddish hue at the base of the petals internally. The plant is in a greenhouse.

THE LEOPARD'S-BANES.

The small class of plants comprised in the genus Doronicum contains only two or three of importance in gardens. Few plants are more easily

Doronicum plantagineum excelsum (Harpur-Crewe).

grown and suitable for all gardens, the variety D. plantagineum excelsum (Harpur-Crewe) being the finest. The total number of species is probably not more than ten, which are confined to the temperate regions of Europe and Asia. These species include two or three dwarf mountain forms hitherto classed as Aronicum, but exclude several Indian plants described as belonging to Doronicum, but now referred to Senecio. The name Doronicum is said by the best authorities to be Arabic, and as the plant was in high repute amongst the old herbalists for its medicinal virtues, and many native plants of this nature became known in Europe by the foreign name of the drug extracted from them, we may accept the Arabic "doronigi" as the original name. It is usually pronounced as four short syllables, having the accent on the second, as if the *n* were doubled. The English name Leopard's-bane is the translation of the Greek word Pardali-anches, which literally means Leopard's-choke. This word has been adopted as the specific name for the type of the genus, though we have no means of knowing to what plant the ancient Greeks and Romans applied it. Indeed, Pliny, a Roman philosopher, who unfortunately in his voluminous writings tells us a very large number of popular superstitions about plants and animals, but very few scientific facts, has a whole chapter about Pardalianches, which he identifies with Aconite. He says that where leopards are abundant the natives laid meat soaked in a decoction of the plant, and thus rid themselves of these pests. He also tells us that the poison is so deadly to man, that the only chance after swallowing it is to take another equally deadly poison. The two poisons then fight in the stomach like the famous Kilkenny cats, till both are destroyed, and the man is saved.

To avoid troubling the reader with obscure botanical characters not obvious or important to the gardener, I will describe the Doronicums as (1) the Lesser Leopard's-bane, (2) the Intermediate Leopard's-bane, and (3) the Giant's Leopard's-bane. These names sufficiently distinguish any at present known which are likely to come into gardens.

The Lesser Leopard's-bane includes the dwarf form sometimes called Aronicum. Those who think that plant names must mean something would do well to note this name, Aronicum. The genus is intermediate between Arnica and Doronicum, and so the botanist who named it coined an intermediate name. The dwarf class of which I am speaking includes D. glaciale, D. scorpioides, and D. Clusi, plants which, if distinct, come very near one another, being all of them 3 inches or 4 inches high, with yellow flowers rather large for the size of the plant, but not freely produced. I have grown them on the rock garden, but they are so vastly inferior to such plants as Odontospermum maritimum, of the same height and colour, and producing ten times as many flowers, that they are hardly likely to be in high favour.

The Intermediate Leopard's-bane, called by botanists D. caucasicum and D. Columnæ, which may well be considered as one, would be an excellent plant in early spring if the flowers were hardy enough to withstand spring frosts. It produces abundance of clear golden flowers on slender stalks about 18 inches high in April. If properly treated it is a capital plant for forcing in pots, but it is only in warm soils and sheltered situations that it shows to advantage out-of-doors.

The Greater Leopard's-bane easily supersedes all others of the genus. It has been so frequently described that little need be added to what has before been said. Its origin is uncertain, but as it has not been traced beyond the garden of the late Mr. Harpur-Crewe, it has been named after that gentleman. He thought it came up in his garden as a spontaneous seedling, and it may be a cross between our two native Leopard's-banes; it is also called D. plantagineum var. excelsum. In rapidity of increase it surpasses any plant of the kind I ever cultivated. The fleshy root-stock may be cut up into pieces the size of a Hazel Nut, and each will have become a large plant in a few months. It requires a moist, rich soil, in which it will produce flowers from February to November, but an abundant succession of flowers is best obtained by dividing and replanting at all times of the year, the first flowers produced by a young plant being generally the finest. It does not increase by stolons, like D. pardalianches, but only by multiplication of the crown, so that it can never become a troublesome weed. It is used for forcing, but I have never seen flowers or forced plants equal to those produced in the open border either in size or in richness of colour.

D.

Doronicum caucasicum.

Saxifraga peltata.—Flowers of this distinct species in a cut state do not usually do the plant justice. But with knowledge of the plant it is one that can be recommended for growing in cool or moist spots, or even such as are wet and boggy. On the other hand, none of these conditions are absolutely essential. Those who would see the plant attain to its giant proportions must give it a moist position, and in such its huge shield-like leaves are often 18 inches across, thus rendering it unique among its kind. The flowers are white and pink and appear on tall, stout, hairy stems a little before the leaves unfold. The plant is composed of a large, flattish, creeping rhizome, and in a moist, cool place these stems travel quickly.

Pelargonium Dr. E. Rawson.—Those who admire the intense glowing crimson shade as seen in the well-known bedding kind Henry Jacoby will find in the above a superb addition to this class of colour, and not only colour, for the individual pips of this variety are upwards of 2½ inches across by actual measurement, added to which the truss is of large size.

Narcissus bicolor Grandee.—This is among the finest of the late bicolor Daffodils, and should always be included in a collection. Even if it flowered among the midseason kinds it would still be valuable for its robust habit and freedom of flowering. If half-a-dozen be planted in a group and allowed to remain two years, the clump at the end of that time would produce a couple of dozen fine flowers. Thus seen, its broad, overlapping perianth segments and solid yellow trumpet impart to it a massive bearing such as very few kinds can claim.

Cheiranthus Marshalli. — Very few among the dwarf rock plants of spring can vie with this when in good condition. It is not common, and the plant is only occasionally seen in the southern counties in broad, free masses. It is not so robust as C. alpinus nor so easily increased, which is unfortunate, seeing it is much more showy. Cuttings root best late in July if secured with a heel and inserted at the foot of a north wall. Give a thorough soaking of water at first and little after, if any. Plant firmly and leave the cuttings exposed to the air.

Plantain-leaved Leopard's-bane (Doronicum plantagineum).

SINGLE-FLOWERED PÆONIES.

Herbaceous Pæonies rank amongst the most charming and valued of all our hardy decorative plants. Of late years the many fine double and semi-double varieties, which have been so frequently exhibited by the leading growers, have succeeded in gaining more notoriety for them, and in drawing attention to their great beauty and value as garden plants. Fortunately, they belong to a class of plants which thrive under very diverse conditions as to soil, climate, and exposure, and in every sense of the term they may be said to be "everybody's plants." Who has not stopped to admire a fine clump of the old double crimson Pæonia officinalis in some cottage garden? Its sturdy habit, its deep green glossy foliage, its numerous large and bright flower-heads must arrest attention and command admiration, and when it has passed out of flower its place is taken by some of the white, pink, or red forms of P. albiflora, graceful and sweet, whether single or double, more slender in growth, taller, and more refined than the forms of P. officinalis.

The single-flowered Pæonies form a very interesting group worthy of every attention, with a very extended flowering period and a wide range of colour, and amongst them the white-flowered species and varieties constitute an important division, not confined to any one section. Pæonia Emodi is one of the most beautiful of them all. It is a native of India, with a rather wide distribution in the Western Himalayas, and found only at fairly high altitudes, and is about the sixth or seventh species to bloom, its flowers opening from the 7th to the 14th May, according to the season; whereas P. albiflora and its varieties rarely flower until the end of May or early in June, P. Emodi is one of the earliest species to start into growth in the spring. Its young shoots push up quickly, and, unlike those of many other Pæonies, they are soft green in colour, and in the young state very liable to injury from frost. The unfolding leaves are also distinct and pretty, reminding one forcibly of the opening leaves of the Horse Chestnut. Early in May they are fully developed and the flower-buds are prominent. In strong plants the flowering shoots are from 3 feet to 3 feet 6 inches high, and before the middle of May the flowers open, one to five on each shoot, according to its strength, but rarely more than two open together, and the lower bud or buds frequently lack energy to develop fully. The flowers are pure white, with a bunch of golden-yellow stamens surrounding one to three green carpels, and from 4 inches to 6 inches across. The leaves and stems remain of a soft green colour, without any trace of red or pink—in fact, it is only when the fruit is ripe that any red colour makes its appearance, the persistent calyx then turning to bright red, which later on, when the fruit dehisces and exposes the bluish-purple seeds, forms a very pretty object. The other white-flowered single Pæonies are P. albiflora and several of its varieties, P. villosa, P. officinalis alba, officinalis oxoniensis, P. cretica. There is also a form of P. Wittmanniana, which flowers some days earlier than the type, and is white in colour, not yellow. Of

P. albiflora and its varieties, suffice it to say that they are amongst them the choicest and most delightful of all Single Pæonies, and that if they can be obtained true to name, P. albiflora var. tatarica, P. albiflora var. sibirica, and P. albiflora var. major (so-called in several trade lists) are the best of the single white varieties.

P. villosa is a very distinct plant, closely allied to P. mollis, very like it in habit, flowering about the same time, but with green stems and white flowers. It is a very chaste little plant, stems not more than 18 inches high, terminated by a single flower on a very short peduncle, pure white, and daintily cupped, closely surrounded by a collar of dark green leaves.

P. officinalis alba is a much more delicate plant than the other forms of P. officinalis. The flower is rather thin in texture, and it lasts only for a couple of days; nevertheless, it is an elegant and distinct variety, and if planted in good soil in a sheltered position it produces large and graceful flowers. It is doubtful if P. cretica can fairly be classed as a white-flowered Pæony, as after the flowers have been open for a day they turn pink, but when they first open they are white, splashed here and there with pink. The plant is very dwarf, and the flowers are large.

A good collection of Herbaceous Pæonies furnishes ample scope for much interesting observation. First of all it is interesting to note the different shades of the young shoots as they appear above ground and gradually develop. P. cretica is generally the first to make its appearance; its young shoots are soft rose at first, and then change to green. It is the first to show flower-buds and the first to flower. All the albiflora forms have bright red shoots, the young leaves being also bright red. P. Emodi,

Single Pæonies.

P. villosa, and P. officinalis alba are the only Pæonies which come up with green shoots. As before stated, the first to flower is P. cretica; the last to flower are the albiflora forms. I delight in Pæonies, and have a large collection. One year P. cretica opened on May 1, P. tenuifolia May, 3, P. arietina May 4, P. hybrida May 6, P. humilis May 6, P. peregrina May 7, and between May 1 and May 21, twenty-one species and varieties opened their flowers. F.

Azalea Vaseyi.—This is the most recently introduced of the North American Azaleas, having been first sent to this country in 1887, and then only to a very limited extent. It is a much-branched bush, whose flowers make their appearance before the leaves. The blossoms, which are freely borne, vary to a certain extent in tint, for in some the ground colour is almost, if not quite, pure white, while in others it is pale pink. The upper portion of the flower is in the interior dotted with reddish-brown, but this feature varies a good deal in different plants. The blooms are each about 1½ inches in diameter and borne in fair-sized clusters. Its season of blooming renders this Azalea especially valuable, for it flowers with the very earliest of the mollis group and before the numerous Ghent Azaleas; indeed, it must be regarded as a successor to the distinct, but very uncommon, A. rhombica, which, though introduced from Japan twenty years or more ago, is rarely seen. It is a native of the hills of North Carolina, and is there said to reach a height of 15 feet. In this country, however, it blooms profusely when not more than a couple of feet high. Not only is this Azalea valuable for its charming blossoms, but it will doubtless be taken full advantage of by the hybridist, and by association with some of the bright coloured forms we may get in time a totally distinct race of early-flowering Azaleas.—T.

OUTDOOR PLANTS.

HERBACEOUS PLANTS MASSED.

On March 24th and April 6th last I described some beds and borders of herbaceous plants massed, underplanted with bulbs. The beds I then described I had proved successful for several consecutive years in my own garden, treated as I advised.

But they were all beds in which the autumn effect is that of tall plants, of from 3 feet to 5 feet high. Of course, the spring effects were from dwarf plants, and in spring the beds were only Crocuses, Tulips, Hyacinths, Narcissus, or the bulbs then in flower. The difference between the effect of dwarf plants in spring and effect from taller plants later on is often pleasing and satisfactory; but there are cases where a low bed all the year would be preferable, and I am now going to show how a few beds could be arranged which would be dwarf all the time, and in which there would be little need to use stakes or to tie up the plants—a proceeding no one finds amusing.

Let the bed be what size it may, we will begin by making one after this plan, and as I know the constitution, growth, time of flowering, and requirements of all the plants and bulbs I name from personal experience, I think I may safely say that the bed will be satisfactory and a success if treated as I recommend.

I do not write for people who have studied and had experience in gardening on their own account. They know much more than I could tell them, probably; but there are many people just beginning to plant a garden who know nothing, and I shall be glad if I can save a few of those people from several years of unnecessary expense, constant disappointments, and lost labour, such as most of us go through when we first begin. During that period we buy our experience, and discover that certain herbaceous plants which look delightful in some border belonging to a friend, or promise to be charming by a description in a catalogue, require especial treatment in arrangement.

To begin with, all beds must be well dug (some weeks previous to planting, if possible, but, any way, well dug). If the soil be heavy add leaf-mould and stable-manure liberally; if poor and light add farmyard-manure, and do it very liberally. But in both cases it would not be too much trouble to make a heap 1½ inches off the top of the soil, and to mix with the heap well-rotted leaf-mould in the same proportion as itself (or the remains of an old Mushroom-bed). After the digging is over return that heap to the surface of the bed. It will be much the better, because it will ensure that none of the bulbs planted afterwards come in contact with anything which might prove injurious to them, such as very heavy soil or fresh manure, both of which are apt to either cause decay or to make bulbs go poor. This material will also cause a quick rooting of young plants, and hasten their growth and well-being considerably.

This done, at a distance of 2 feet apart, plant a row of Sedum spectabile the whole length of the bed. Repeat these rows at a distance of 4 feet apart until the bed is finished. Then exactly between each two Sedums down the length of the rows plant a Globe-flower, Trollius japonicus fl.-pl. being the best, and you have several complete rows, with a space of 4 feet between them. In these spaces of 4 feet plant other rows of plants down the centre (which will, of course, be 2 feet from the rows on each of them), and let these rows be of Lilium Thunbergianum sanguineum or Lilium Thunbergianum Van Houttei, in groups of four bulbs, planted 2 inches deep and 3 inches apart from each other, and the groups from centre to centre 2 feet apart. In these 2 feet, or, rather, 1½ feet, remaining between each clump of Lilies, plant a Phlox coccinea and a Phlox Sappho (or Phlox Diadem) alternately. Then put the bulbs of the large-flowered Yellow Crocus all over the surface of the soil at 1½ inches apart everywhere which the crowns of the plants already in the bed do not occupy; and having done this, plant them in at a depth of 2 inches with a trowel. The highest things in this bed will be about 2 feet high, and in February and March it will seem as if it was bedded out with Crocuses and they had it all their own way. But in April, when the Trollius shoot up their pretty green foliage and brilliant double orange flowers, they will hold their own in almost the same way, and in June and July the bright scarlet Lilies will make a great display.

In August and September the Scarlet and White Phloxes will be lovely, and again will hold their own, and when they have done flowering they may be cut down to within a few inches of the soil, and the Lily-stalks shortened to that height also. Then the bed will be a mass of grey leaves, which have formed a pretty carpet all the time, and the pink Sedum flowering in their midst will last a long time in the autumn, and although not so showy as the other flowers have been, will be very pretty in its own quiet way.

This bed must be mulched with short rotten manure in the winter, about an inch deep, and if some soil is lightly sifted over it when the Crocus first begin to show above the ground it will be found that the bed will take care of itself very well during the rest of the year.

Another bed I am now going to describe must be dug and manured in the same way previous to planting. It also will have a dwarf effect, but quite a different one. Put Corydalis nobilis where the Trolliuses are in the other bed; Aster amellus bessarabicus or Aster dumosus or Aster Lindleyanus nanus (Michaelmas Daisy) (all dwarf and all bearing very freely violet or mauve flowers, but do not mix the three—keep to one—they do not all flower at the same time) where the Sedums are in the other bed; Iris pallida Queen of May and Iris pallida Khedive alternately where the Phloxes are in the other bed; Chrysanthemum maximum the July-flowering one, 2 feet high, with stiff stalks) where the clumps of Lilies are, and underplant the whole bed with Horsfieldi Daffodils, 3 inches apart and 1½ inches deep. Set Snowdrops in thickly between them at the same depth, and you will have a bed of which you will be proud during February, when it is a mass of white Snowdrops; and during the end of March and early April, when the beautiful Horsfieldi Daffodils fill the bed; during April and May, when the Corydalis make it bright with their lemon-coloured flowers and pretty leaves; in June, when the Irises are a sight worth seeing; July, when the large white Daisies (Chrysanthemums) make the bed a mass of white; and autumn, when the Asters occupy the bed.

The Chrysanthemums must be cut down to within a few inches of the ground when over, and the Daffodil flowers cut off when dead. The dead Iris flowers must also be cut down, and the Michaelmas Daisies must have a few stakes, but nothing else beyond an autumn mulching and cutting down of the Michaelmas Daisies (at before it) must be attempted. The other foliage and leaves must die down at their leisure, and will be hidden by the other plants while they are doing so.

This bed, like the other, will always be low. The Michaelmas Daisies are the only things which will require stakes, and only short ones need be used for them. In putting them in their way into the soil must be felt carefully, so as to avoid injuring any of the bulbs of the Horsfieldi Daffodils, as to do that would be a pity. A few Snowdrops, like the Crocus in the other bed, would not be missed. In the autumn this bed must be mulched in the same way as the others. MRS. ROBERT JOCELYN.

Iris missouriensis.—For the first days of May this is a very charming kind and specially suited for the second row in the border. The flowers are of a pale mauve shade and very pleasing, and, seeing that it comes so early and is so free-flowering, one wonders why so beautiful a plant is not largely grown, particularly when the flowers are obtainable on good long stems.

THE GOLDEN-RAYED LILY (LILIUM AURATUM).

ONE of the most beautiful, and, at times, unsatisfactory, Lilies is this splendid species from Japan. We have often referred to it and answered questions as to its failure in many gardens. The photograph, however, shows a plant in rude health, the spike represented having borne nearly forty flowers, and these unblemished in every way. For planting amongst shrubs and bold grouping few bulbs are more useful than this.

Golden-rayed Lily (Lilium auratum). From a photograph by Mr. E. Robinson, Hampton, Middlesex.

Destroying slugs and snails.—I am greatly troubled by these pests, for which I can find no remedy. The snails have attacked all my Irises, and almost completely destroyed them, eating through all the flower-stalks. I have tried surrounding the plants with lime, but without effect, and am continually hand picking, but cannot keep them from doing serious damage. The slugs are the small white and larger brown kinds, and eat up all young growths and tender seedlings. I have tried surrounding Pyrethrums, etc., with soot and lime, but it only seems to keep them off for a few days, while it is fresh, as they soon attack the plants again. Is there anything else that would get rid of them more effectually? My garden is fully stocked with plants, so I cannot take any wholesale measures, for fear of injuring them. Are there any kind of traps I could set for the snails and for the slugs too? There is a wall at the back of my garden, thickly covered with Jessamine, which I expect harbours the snails, but this I cannot alter in any way.—ABBEY.

*** Your garden is evidently in a much infested condition. We know of no better remedy than salt, soot, and lime; but do not use either in conjunction. If you persevere the pests may be eradicated. Get a large lump of fresh lime, place this in a close tong-basket or box, and add just enough water to make it powder down quickly without being moist. It will then be very fine and very hot. Put an old glove on the hand, and sow it as fresh as possible well into the crown of your plants. Only a slight dusting should be given at an application, and this at intervals of two or three days. It is better done early in the morning, or in the evenings when slugs are feeding. So fine a powder penetrates almost everywhere, and kills the tiny slugs, gradually killing the larger that may escape handpicking. In the meantime, by all means continue your present practice of handpicking and placing a ring of soot or lime around any special favourite. Dig over all the ground you can, and keep it well stirred, so that birds may have a fair chance with the enemy, as well as destroying their hiding-places. Unless you get rid of the slugs to a greater extent than appears to be the case, it is not much use your having a garden well stocked with plants.

Questions about the Tree Pæony.—There is an old Tree Pæony in bad health growing on the vicarage lawn here. 1, What is best to be done to improve it? 2, Can I take cuttings from it; if so, when, in what manner (in heat, etc.), and the kind of soil? 3, What ways are there of propagating Tree Pæonies?—NEASHAM.

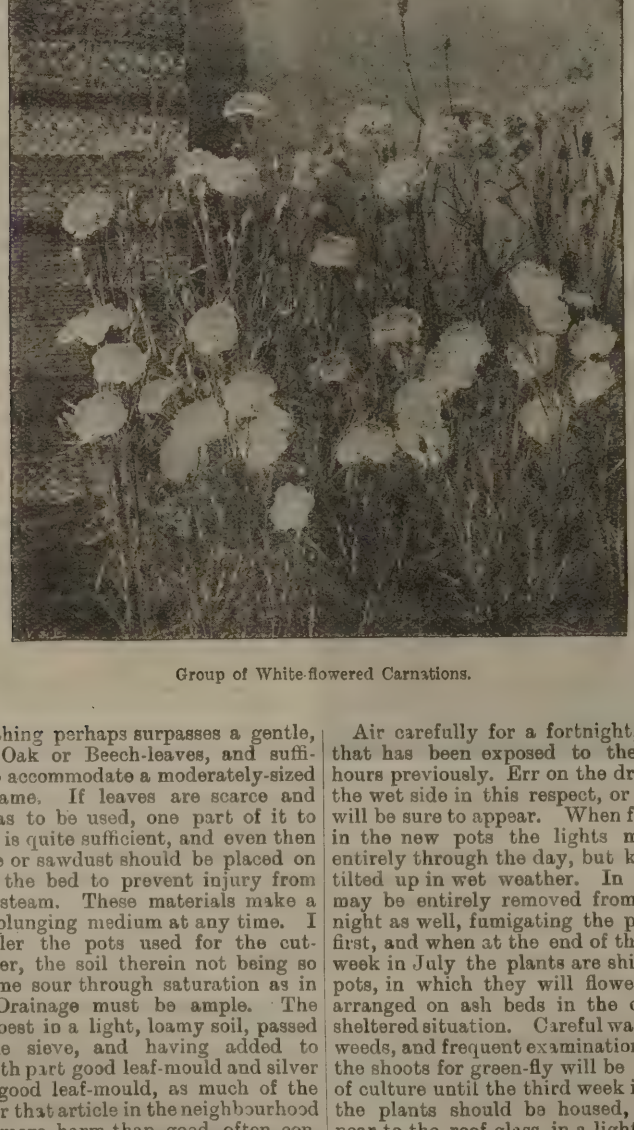
*** We are asked what is best to be done with an old Tree Pæony in bad health upon a lawn. The Moutan or Tree Pæony enjoys a light and rich soil, which must be deep and frequently enriched by mulchings of well-decayed stable-manure. Probably "Neasham's" plant is in a starved condition, or has been nipped by the recent cold weather, spring frosts often severely injuring young growths of this section. At the same time they must not be over-protected or coddled, otherwise premature growths are made and greater risk than ever of injury from this cause. Our correspondent does not say in what way his plant is unhealthy. As regards propagation, the tree or Moutan varieties are usually grafted upon stout fleshy roots of the herbaceous species in August or early in September. P. officinalis is most generally used. Let the graft be a portion minus flower-buds, and place the grafted root in a cold-frame, plunging over the scion and keeping them close and partially shaded for a time, gradually admitting air after a junction is effected. We would prefer to leave them in the frame until the following spring, when either pot on and grow in pots or plant in their permanent quarters. Divisions and layers are not so certain, while cuttings are almost always a failure, unless in experienced hands. They need a close, but gentle heat, and should be taken early in spring in the same manner as Dahlias.

Fritillaria recurva.—One of the essential points in growing this pretty scarlet-flowered kind is to avoid keeping it out of the earth too long. The plant is benefited by lifting, particularly where the soil is rather heavy. When out of the soil it should be kept in silver-sand till planted again.

Irish mouse-traps (*Inquirer, Chudleigh*).—For the last seventy years I have seen the old Irish mouse-trap in little village shops. Every ironmonger in the United Kingdom keeps it. The low charge of one penny each hole in the slab of wood makes it the cheapest of all contrivances, and it is also the most effective, whether for cupboard or garden. The wire springs are bent down with a darning-needle and button-thread. The mouse severs this to get at the bait and is strangled.—W. H. L.

TREE CARNATIONS.

Those who fail in their attempts to grow greenhouse or Tree Carnations often render final success next to impossible by continuing to take cuttings from their debilitated stock of plants. The best plan is to obtain some fresh healthy cuttings from another source, as, even if those above described strike at all, the process is very slow, and in nine cases out of ten aphis or thrips attack them before they are ready for removal from the propagating-frame or handlight and before they will stand fumigation. Some growers prefer to propagate in the autumn, others in the spring, and although I prefer the spring, I think it best, in order to make success more certain, to put in one batch of cuttings rather late in autumn —say October or November, and a second batch in February. Beginners often make a mistake in choosing the soft, strong, terminal shoots, whereas experience teaches that the somewhat stubby side-growths strike much more readily, and, as a rule, make better plants. This is especially so with Miss Joliffe, which does not always strike so easily as Alegatiere, Sir Charles Wilson, and a few others. Then many batches are ruined by the employment of both too much top and bottom-heat, that of a Cucumber or Melon-house being too great, at least in spring.



Group of White-flowered Carnations.

In autumn nothing perhaps surpasses a gentle, warm bed of Oak or Beech-leaves, and sufficiently large to accommodate a moderately-sized single-light frame. If leaves are scarce and stable-litter has to be used, one part of it to three of leaves is quite sufficient, and even then Cocoa-nut-fibre or sawdust should be placed on the surface of the bed to prevent injury from any escape of steam. These materials make a capital clean plunging medium at any time. I find the smaller the pots used for the cuttings the better, the soil therein not being so liable to become sour through saturation as in large pots. Drainage must be ample. The cuttings root best in a light, loamy soil, passed through a fine sieve, and having added to it about a fourth part good leaf-mould and silver sand. I say good leaf-mould, as much of the rubbish sold for that article in the neighbourhood of towns does more harm than good, often containing injurious grubs and insects and encouraging disease. Unless it can be guaranteed made from Beech or Oak-leaves, it had better be dispensed with and extra sand added. After filling the pots firmly, water with a fine rose and allow them to drain for a few hours. In preparing the cuttings, remove a few of the lowermost leaves and cut each through with a sharp knife immediately below a joint, inserting them at once, half-a-dozen in each pot. Again sprinkle to settle the soil and plunge at once to the rim. Those who have not a special propagating-house, but have an early vinery or Peach-house, may make up a bed of leaves on the border and introduce a small frame. In bright, sunny weather the cuttings may require a spray from the syringe daily, but when dull and sunless they will sometimes not need it for days together, as the fermenting material supplies a certain amount of atmospheric moisture.

A chink of air admitted at night allows the escape of any superfluous moisture, keeping the light shut down by day. If all goes well, the majority will be rooted in three weeks, when more air must be given, and a week later the pots lifted and stood on a shelf tolerably near the glass, but shaded during sunshine. When growing freely, remove them to an intermediate-house, give them a light position, and fumigate.

Remove into single pots before the roots become matted, using now the same kind of loam, but rubbed down by the hand instead of sifted, rough sand, or road-grit, and leaf-mould being the only addition. Young gardeners often erroneously add farmyard-manure, and lose their plants in consequence. In potting, keep the collar of the plant rather high than low. By May another shift will be required, a 4½-inch pot being used, and the plants afterwards placed in frames on a hard ash bottom. Air carefully for a fortnight, and use water that has been exposed to the sun for a few hours previously. Err on the dry rather than on the wet side in this respect, or the "yellows" will be sure to appear. When fairly established in the new pots the lights may be removed entirely through the day, but kept on and well tilted up in wet weather. In June the lights may be entirely removed from the frames by night as well, fumigating the plants once more first, and when at the end of the month or first week in July the plants are shifted into 6-inch pots, in which they will flower, they must be arranged on ash beds in the open, choosing a sheltered situation. Careful watering, removing weeds, and frequent examination of the points of the shoots for green-fly will be the chief points of culture until the third week in October, when the plants should be housed, elevating them near to the roof-glass in a light, airy structure from which frost only is excluded. Coddling is ruinous. If the plants have done well, a little weak liquid-manure may be given once or twice a week, but further stimulants are best avoided. Always remember that a clean, healthy growth in the winter is the only guarantee for a batch of good cuttings the next spring.

The best varieties are A. Alegatiere, bright scarlet; Germania, canary yellow; Leonidas, crimson; Mlle. Carle, pure white; Mary Godfrey, white; Miss Joliffe Improved, pink; Mrs. Hemsley, deep crimson; Pride of Penshurst, yellow; Reginald Godfrey, salmon-pink; Sir Henry Calcraft, scarlet; The Moor, dark crimson; Uriah Pike, like the Old Clove in colour and fragrance; and Winter Cheer, scarlet, shaded crimson. J.

HOUSE AND WINDOW GARDENING.

WATERING WINDOW PLANTS.

In pot plant culture of all kinds, especially in windows and glasshouses, watering is a most important matter, and simple though it be in reality, it is nevertheless rather difficult to explain in writing. If the soil is too dry, then the roots as a matter of course cannot obtain from it sufficient moisture to counterbalance the evaporation which takes place through the leaves, consequently the plant droops, or, as gardeners term it, "flags." Again, if the plant is watered too freely the soil around its roots becomes sodden and impervious to the air, the leaves turn yellow, and the whole plant soon becomes debilitated and out of health. From this it will be seen that an equable state of moisture is desirable, therefore practice, together with habits of observation, will soon teach the right temperature to adopt. A wet soil is really unfit for plant growing in a general sense. A plant standing twenty-four hours in water is often irreparably injured. A Hyacinth, to be sure, will live one season in water, but all the matter which goes to make up the flowers is prepared the year before, and after flowering the bulb is exhausted and almost worthless. A good soil for plant growing, therefore, is not one which will hold water, but one from which water will rapidly pass away. The soil itself ought to be composed of minute particles through which air spaces abound. The water supply must be just enough to keep these particles moist and the air in the spaces is thus kept in a moist condition.

The roots traverse these air spaces, and it is really, therefore, moist air which the roots of the plants require, and not water. If it were water simply which plants wanted we should cork up the bottom of the hole in the flower-pot, and thus prevent the water getting away. Instead of this we try to hasten the passing of the water through as much as possible, by not only keeping the hole in the bottom of the pot as clear as we can, but often putting pieces of broken material over the hole to act as drainage. A plant (when in growth) will generally be the healthiest, therefore, which wants water most often. This will show that there are plenty of air spaces in the soil, and the roots are making good use of them. If it does not often want water it is in a bad way, and more water will make it worse. How often to water them will be according to how easily the fluid passes away or is absorbed. If, when you pour water on earth, it disappears almost instantly, it would be safe to water such plants every day. There are several methods which may be adopted in order to determine when a plant requires water—viz., by the general appearance of the soil, or tapping the pot with the knuckles, when, if the soil is dry therein, a sharp hollow sound is given forth, and when the soil is moist a dull, heavy thudding sound is given forth. Take a pot of dry soil and one recently soaked with water and try this experiment, by lifting the pots and testing their weight, wet soil being, of course, much heavier than the same quantity when in a dry state. Fill two pots with soil, water one only, and then lift them both for comparison. A little practical experience will soon enable anyone to tell when plants are dry by each or all of the above-mentioned.

Always use soft (*i.e.*, rain or river water) in preference to that from wells or springs. In towns where water is supplied by companies expose it to the sun and air, before using, in a large tub, tank, or other vessel. Never use cold water. Water for plants should be equal in temperature to the atmosphere of the room, case, or frame in which they are growing. Never water a plant that is already wet, but when a plant is dry give it sufficient to moisten the ball of earth thoroughly. When the compost gets very hard and dry the pots may be plunged in a pail of water, and allowed to remain until

the air-bubbles cease rising to the surface. If a plant is growing freely and the pot is well drained it is almost impossible to water it too freely. Plants require water less frequently during dull, damp weather than is the case during the heat of summer, when the sun is powerful and the light intense. Water for syringing or sprinkling plants overhead should be pure and quite free from mechanical impurities, as chalk or lime. Muddy water leaves spots and patches of dirt on the leaves and necessitates their being sponged clean. B.

481.—**Pot-pourri recipe.**—One oz. gum arabic, 1 oz. Orris-root powder, ½ oz. pounded Cloves, 2 lb. bay salt. Rose petals picked when passing off the trees, not after being in water. The bay salt must be baked in the oven so as to dry it well. When cold, mix a handful of it with the perfumes. Of this place a layer in a stone jar, which must be quite dry and clean. Then a layer of Rose-leaves, Lavender, Orange-flowers, Sweet Verbena, Sweet Geranium-leaves, etc., all well picked from their stalks and fresh but not damp, and all thoroughly dried in the sun. Then another layer of salt with the perfumes, and then the flowers, until all are exhausted. Then take the salt alone and fill the jar with alternate layers of flowers and salt, fill the jar up and cork it up air-tight—all depends on this—and keep it for three months. Then open and stir with a wooden spoon, after which it will be ready for use.—Viscountess.

—— The following recipe from "W. H. C." appeared some years ago in Gardening: Damask Roses, part in buds and part blown, two pecks; Violets, Orange-flowers, and Jasmine, a handful of each; Orris-root, sliced, Benjamin and Storax, 2 oz. each; Musk, ¼ oz.; Angelica-root, sliced, ¼ lb.; the red parts of Clove Gilly-flowers, one quart; Lavender-leaves, two handfuls; Rosemary-flowers, Bay and Laurel-leaves, half handful each; three Seville Oranges, stuck as full of Cloves as possible, dried in a cool oven and pounded; half handful of Knotted Marjoram; and two handfuls of Balm of Gilead, dried. All to be put in a jar in layers, with bay salt strewn between. A close cover to be kept on the jar and taken off occasionally when the perfume is desired. The above was taken from an old work, dated 1795. The chief expense seems to be the ¼ oz. Musk; this at present prices might cost 15s. to 20s. or more, according to quality; probably a much lesser quantity would do. The following is another recipe taken from the same source: Take of Orange-flowers, Clove Gilly-flowers, and Damask Roses of each three handfuls; Knotted Marjoram, Lemon Thyme, Rosemary, Lavender, and Myrtle, one handful; six Bay-leaves; half a handful of Mint; the rind of a Lemon, and ¼ oz. Cloves. Chop all and put them in layers with pounded bay salt between up to the top of the jar. If all the ingredients cannot be got at once put them in as you get them, always throwing in salt with every new article.

—— Take an ounce of Benjamin, Storax, Orris, Nutmeg, Cloves, and Mace, respectively; bruise them in a mortar with a pinch of Musk. Lay a thick bed of coarse salt at the bottom of a jar, then a layer of red Rose-leaves, sprinkle the mixed spice and some bay salt, then another layer of Rose-leaves and so on till the jar is full. Finish off with another layer of salt, and put a board on the top. You can use Rose-leaves alone or petals of coloured Pinks, Orange-flowers, Myrtle-leaves, Sweet Brier, Lavender, Thyme, and Rosemary, also chips of Lemon-peel. Do not stir for at least three months. After the first summer it will only be necessary to add layers of flowers and salt, and stir as often as you please.—Balnacarron.

Genista præcox.—This and the pure white form are both a mass of bloom at the present time, and among plants of shrubby growth none are more effective. The drooping branches, covered to their tips with blossom, give it a most graceful bearing, and for the rock garden, or any position where room can be afforded, the pure white and yellowish-creamy flowers are very beautiful and effective.

The Paulownia from Cornwall.—Mr. Vivian sends us from Meadowside, Hayle, a spike of P. imperialis. Its deep blue flowers and brown calyx are very distinct, but it is only in the more southern counties it flowers freely.

INDOOR PLANTS.

GROWING GLOXINIAS.

A few years ago a good deal of time was spent in the raising of stocks of these beautiful bulbous plants by means of leaves. Not only was this a tedious and slow business, but it also entailed a great amount of labour. The plants producing the then requisite leaves were usually three or four years old, and were grown on till flowering was nearly over, to be then cut up for propagating. A large leaf was often made into three cuttings. In this way I have in years past assisted in the preparation of thousands—a system very little in vogue nowadays. The strains of seeds obtainable at the present time render this leaf-propagation one of the things of the past, as unnecessary as it is undesirable. But though we have made great advances in the strains of these flowers, it yet remains an open question whether we employ the seeds to the best possible advantage, by which I mean, do we so use them as to only spend a minimum amount of time in the growing of the plants themselves? One of the more common errors with all seeds of a very minute character is that of sowing too thickly, with the obvious result later on of overcrowding, damping, and other attendant evils. An ordinary packet of Gloxinia or Begonia-seed contains a great number, possibly 400 or 500 seeds, and if this were more often fully realised it would be almost an impossibility for any gardener to sow them all in a 6-inch pot. For such a packet of seed four or six such pots would be much better, or two pans. Particularly is this the more needful if the seed be known to be quite new. The pots must be well drained and nearly filled with a good sandy soil and given a thorough soaking of water three or four hours before sowing the seeds. The second week of January is the time for sowing, but we draw attention to the plants now, as they are in full bloom. If this be well done no further waterings should be needed till the seedlings appear. Frequently seeds of small size are lost through watering after sowing. In raising the seedlings a brisk stove temperature is better than a sharp bottom-heat, as the latter frequently quickly dries the soil below. If placed on bottom-heat it is best at a moderate temperature, and then good seeds will germinate rapidly. Cover the seed-pots with a sheet of heavily-shaded glass and examine it daily till the seedlings appear. From this time it is simply a question of transplanting the seedlings as soon as large enough into boxes or pans, and from these latter firstly pot them into 4-inch pots, and when ready shift into 6-inch or 7-inch pots to flower.

It is not necessary in the culture of quick, free-growing subjects such as these to give a plant three or four different sizes of pots in the short space of four months; indeed, to shift a plant into a pot one size larger is frequently a very dangerous proceeding, as the roots often are badly damaged in putting in fresh soil, and in the case of Gloxinias the leaves as well as the roots must be considered. To keep the former in good condition, it will be found best to pot into the flowering size as soon as the leaves reach the margin of the smaller pot. If this be done with care, little damage will ensue either to leaf or roots, though a little extra care and judgment will be needful in such cases in watering till the plants are in free growth. A suitable mixture of soil is one of loam, leaf-mould, a little, say one-sixth, of very short manure, a similar proportion of peat, with a free addition of sand. This, with a warm greenhouse and shaded from sun, will suit them well.

Seedling Gloxinia.

THE CINERARIA FOR GREENHOUSE AND SHOW.

Soil and potting.—The next repotting will be the last, and an 8 inch pot is large enough for a specimen plant. I advise only the best and most sturdy seedlings to be thus shifted on, for it will be found among a batch of Cinerarias from seeds that the best in growth indicate the best flowers generally; the rest may be left in smaller pots for conservatory decoration and so on. The compost for this shift must not be sifted, and less sand should be used. The addition of a little broken charcoal will be beneficial. It will be noticed no manure is recommended. Stimulants can be applied when the assistance of such are wanted. What the Cineraria delights in is a sweet, porous soil for the roots, and this may be had by mixing turfy loam, decayed leaves, and sand.

Give preference now, as during all stages of growth, to rain-water, which for some time

should be sparingly used, so as not to sour the large ball of earth. If the same be moist at potting-time no water at the roots will be required for a week or so; indeed it will be found that the Cineraria up to the time of the appearance of flower-buds makes more satisfactory progress if kept on what gardeners know as the "dry side." Shade from the sun and keep the undersides of the leaves moist by the use of the syringe, and in this position—that is, cold-frames—the plants may be left until the end of September, after which time they will do best in their winter quarters.

AUTUMN AND WINTER TREATMENT.—A greenhouse where plenty of air can be admitted on all favourable occasions, and where the temperature may be kept between 40 degs. and 50 degs., is the winter position for this plant, and I much prefer a bottom-heat of ashes or some such moisture-holding material than the ordinary lattice-work stages. The plants should again be stood on inverted flower-pots, which allows air to pass freely among the lower leaves, besides giving them room for development. Be particular not to crowd the plants together. As soon as the stem of the plant is advanced 3 inches or 4 inches high, nip out the point, especially in the case of seedlings. This will give three or more leaders instead of one, and the head of blossom will be proportionately larger. Tie these down carefully as close to the rim of the pot as is possible, which may be done either by neat sticks or by fastening a piece of string around the underside of the pot's rim, and gradually bring the leaders down to it. This will ensure a good foundation to the plant, and keep it dwarf. About this time I would start feeding the plants with liquid-manures. I do not advise the use of the well-known concentrated manures as a top-dressing—it is so easy to put on too much; in fact, Cinerarias are better without these so-called artificials. I would use instead the drainings from cattle-yards, and always take care to give very weak applications. The liquid from soot and cow-manure together is excellent. This makes the leaves put on a dark green, healthy colour.

A matter of great importance is to keep the plants free from the attacks of green-fly. This is best done by fumigating the greenhouse at intervals of three weeks. Do it even if the enemy is not seen, only let it be done lightly The leaves, again, must be dry when this operation takes place, or the edges of the same may get scorched. Another pest is a small maggot which riddles the undersides of the leaves in a similar way to that known as the Celery-fly. Its work may easily be seen, for it leaves a light-coloured road behind. Killing the maggot is the only mode of preventing it doing further injury to the foliage.

IMPORTANT DETAILS.—Regulate the flowering stems in an even manner with sticks, which should not, however, be seen, and I would particularly urge careful handling of the plant at all times. Nothing is more common than Cinerarias with no bottom leaves, caused in many instances by carelessness. The leaves are so brittle that they give way to the slightest touch, but a specimen either for exhibition or the home stage cannot be perfect that has not rich dark green foliage, almost hiding its pot.

H. SHOESMITH.

A freak in Arum Lily.—I enclose photograph I took of a Nile Lily grown in my conservatory, which seems to me a curious freak. It is the second year of flowering of the plant, and last year it threw out one bloom, which seemed as if it was going to be a double one also. It, however, withered off, and never opened properly. This year it has given three large perfect single blooms, then this double one. The cups are both perfect, are of large size, each measuring from stem to curled point fully 4½ inches. I should be obliged by your telling me if this freak is at all common? I have never seen it myself before. There is only the one stamen or spadix, which in size and thickness is rather over normal. The photograph shows both a single and the double bloom.—JAMES MILLER, *Bridge of Allan, N.B.* [*The photograph showed an Arum Lily with double spathe, which is not very uncommon.*—ED.]

Heating greenhouse (*Ragus*).—We think your plan would work very well, but 20 feet of 2-inch piping should be ample for such a small and warmly situated house, especially as you do not need it for any but ordinary greenhouse plants.

CHRYSANTHEMUMS.

Cut-back Chrysanthemums (*H.*).—In reply to your first question, we assume your object in cutting back your plants is to make them dwarf. On this account it would be better to cut back below the shoots you describe. Do not in any case cut back into the hard wood, or the resulting breaks may not be satisfactory. In cutting back Chrysanthemum plants, always cut back to where the stem is moderately firm, neither too hard nor soft, and then you may reasonably expect nice vigorous shoots to break away immediately below the cut. Your second question is a little difficult to understand. Our experience is that when a plant makes a break, either naturally or artificially, there is no original or leading shoot, as the shoots resulting through the formation of the "break" bud, or through being cut back, are of equal value and size. Now and then one shoot may show a little more vigour than another, but this is mostly seen in plants cut back into the hard wood, when one shoot will sometimes grow away much more freely than another. Our advice to you is, retain the three strongest shoots, or the three shoots of most even size, and then the flowers which in the end develop on these growths should be of even size and character.

Chrysanthemums—which buds to retain (*H. Brown*).—If your plants have not made a natural break, pinch out the tips of the shoots at once of Mrs. Hermann Kloss, General Roberts, Mrs. G. Gover, Pride of Madford, Deuil de Jules Ferry, and Mme. Carnot. A week to ten days later treat similarly Reine d'Angleterre, John Fulford, Chas. Carter, and Robt. Petfield. It is now too late to treat your plants in the hope of getting second crown buds, and several of your sorts are better from this kind of bud. You must, therefore, now retain the first crown buds in each instance. Chrysanthemums like a change of diet, and no one manure can suffice right throughout the season. Commence with soot-water, placing a bushel in a sack and soaking it in a barrel of water. Peruvian guano is a capital fertiliser, and there are many excellent patent manures also which are largely advertised. Half-an-ounce of these to a gallon of water is a useful quantity to use. Commence to water when the final pots are full of roots, generally about the middle of July, or later.

Pink Chrysanthemums (*J. C. Ck.*).—There are very few pure pink Chrysanthemums, the majority of those nearest to this shade of colour being largely suffused with mauve. You ask for a pure pink Chrysanthemum of good quality, and this leaves us at a loss to understand whether you mean for decorative uses or for exhibition. Annie Clibran is a good quality flower, and also a free-flowering variety. The colour is a clear soft rose-pink, and most invaluable as a decorative sort. Another pretty little free-flowering sort is Bambina, the colour being a delicate pale rosy-pink. A profuse blooming sort is O. J. Quintus, sometimes described as a mauve-pink, but when grown in a free manner a beautiful pink. Lilian S. Bird is a very large flower, with long quilled florets of a lovely flesh-pink shade. Mrs. H. Briscoe-Ironside is a new variety of a distinct flesh-tinted colour. We think these will meet your needs.

Latest date to stop Chrysanthemums for decoration (*J. W. J.*).—As your object is to grow bush plants and you want them by mid-November, none of your plants should be pinched after the middle of June. So far north as Ayr, it would be unsafe to stop your plants at a later date, although growers in the south may defer the date of this pinching until the end of June. Each of your varieties is of easy culture, and should do very well as bush plants for decoration. Elsie and Mons. W. Holmes may be pinched just a few days later than the others, as they flower somewhat in advance of ordinary November sorts.

Tufted Pansy Princess Louise.—This is a very fine variety. It is very dwarf and compact, and studded with charming, rayless blossoms of clear yellow. As a plant for massing it should be highly esteemed, and there is little doubt that it will take the leading position as a clear yellow bedding variety.—D. B. CRANE.

GARDEN PESTS.

Carnation pests.—Could you tell me the name of the enclosed insects, and the best means of destroying them? They have made sad havoc among my Carnations. I gave the ground a good dressing of soot and lime last autumn, but it appears to have no effect. No manure was used. I shall be grateful for any information you can give me.—W. WILSON.

*** The creatures you sent were specimens of two kinds of millipedes. The large brown ones are the London snake-millipede (Julus londinensis); the smaller ones are the flattened snake-millipede (Polydesmus complanatus). Both are very destructive pests in gardens. Salt or nitrate of soda strewn thickly on the ground, and then well watered, will kill them if they are near the surface. Or they may be trapped by burying slices of Turnips, Mangold, Carrots, or Potatoes near the plants about an inch below the surface. Stick a small skewer into each so as to be able to find them easier. Examine these baits every morning.

The Vine-weevil (*H.*). — The insect attacking your Maiden-hair Ferns is the black Vine-weevil (Otiorrhynchus sulcatus), a very annoying pest. It feeds on the leaves and young shoots of various plants, Vines and Maiden-hair Ferns being special favourites, and the grubs are equally injurious to the roots of Ferns, Primulas, Cyclamens, Strawberries, and many other plants. No insecticides can be used with any effect against the weevils, and all you can do is to search for the beetles. You might lay small bundles of Moss or hay about so that the beetles might creep into them for shelter during the day. These traps should be examined every morning. Plants in pots might be shaken over a white sheet after dark. The beetles lay their eggs at the roots of the plants, the grubs hatched from these eggs feed on the roots and eventually become chrysalides, from which the weevils emerge in due course. The only way of destroying the grubs is to pick them out from among the roots.

London snake-millepede (*A. A. Lucas*).—The "animals" you sent are specimens of the London snake-millepede (Julus londinensis). They are most destructive in gardens, as they feed on the roots of many kinds of plants, and are most difficult to destroy. A heavy dressing of salt or nitrate of soda, well-watered, will kill them if they are near the surface, or they may be trapped by burying small slices of Turnips, Mangold, or Carrots, near the plants they are attacking. Stick a small skewer into each so that they may be easily found; they should be examined every morning.

Canna and Aralia leaves bitten (*Mrs. J. J. Freeman*).—We do not think that your Aralia and Canna leaves are attacked by an insect. If they are it is probably by a night-feeding one. Look the plants well over about an hour after dark and see if you can find anything. We have often found similar holes in leaves without any apparent cause, and we are of opinion that they are the result of the presence of some fungus, but we cannot offer any proof of this theory.

Apple-trees affected (*R. Harper*).—The leaves of your Apple-tree seem to be very badly mildewed. Try syringing or spraying with Bordeaux mixture. To make this dissolve 6 lb. of sulphate of copper in 4 gallons of water. In another vessel slake 4 lb. of quick-lime in one gallon of water. When this latter is cool, strain and pour it into the copper solution, and add 35 gallons of water. Keep the mixture thoroughly well stirred.

Insects eating Peach, Vine, and Rose-leaves.—I send you two insects that are now eating the leaves in my orchard-house—Peach, Vine, and Rose. How can I best destroy them? What are they? A reply in GARDENING will much oblige—CARTER.

*** The insects you sent are two weevils. The larger and darker one is the black Vine-weevil (Otiorrhynchus picipes). The other belongs to the same genus, but I am not quite sure to what species it belongs. They are most destructive pests, feeding on the leaves of many plants, and their grubs feed on the roots of Ferns, Primulas, Cyclamens, and various other plants. The weevils feed at night, and hide themselves very carefully during the day.

They may often be caught by laying white sheets under the plants, and after nightfall throwing a bright light on to the plants. This should make them fall. If it does not, give the plants a good jarring shake, and look them well over. Tying small bundles of hay or Moss here and there on to the stems would be useful, as they would provide hiding-places for the weevils. They should be examined every morning. The grubs must be turned out of the ground. No insecticide can be made to reach them so as to be of any use.—G. S. S.

Flies injurious (*B. D. H.*).—The flies which you found so abundant in your garden belong to the genus Bibio. The flies themselves are quite harmless, but their grubs feed on the roots of plants, so you did right to kill them.—G. S. S.

Worms in soil (*Mandrake*).—If the worms you mention are ordinary earth-worms they will not injure your plants. If they are not, please send up a few specimens, and I will tell you what they are and how to deal with them.—G. S. S.

HOLLYHOCKS DISEASED.

I SEND some leaves of my Hollyhocks, which I am afraid must be attacked by the disease. I should be glad if you could tell me how to treat them so as to check it? I have heard that syringing with sulphide of potassium is a good thing. If so, in what quantities and how often should it be done? The plants were planted out as seedlings about this time last year, and a good quantity of manure was put into each hole. They did not blossom last year, but were quite healthy until lately. They are growing at the back of a south border in a light clay loam, and up to this have had a great deal of moisture. I have just given the plants a good mulching of stable-manure and cut off all the diseased leaves, also all extra shoots, leaving only one main one. —ABBEY.

*** The plants are very badly diseased. You have done quite right to cut off the leaves, though why the extra shoots is not evident, unless badly attacked. The leaves sent show that the plants are attacked by Hollyhock disease. When the leaves are much infested there is no chance of obtaining fine blossoms. It is probable that the Hollyhock fungus may have been in existence (vegetating quietly on some member of the Mallow family) for many years, but its introduction among cultivated plants is of comparatively recent date. In dry, hot summers it is a terrible pest, and the only way to cope with it successfully is to give the plants generous cultivation from the first moment of their existence, whether raised from seeds or cuttings. In dealing with living organisms of this character—which are so minute and so easily carried from place to place unobserved—it is often easier to prevent than to cure, and it is certainly better for the plants, for when once attacked, even though we may succeed by taking timely measures in arresting the progress of the disease, they are never the same afterwards; it is a rare occurrence for a Hollyhock to be attacked, even in a mild form, without losing its bottom leaves. The best way to deal with it is to pick off some of the worst leaves, for nothing can save them. Mulch the plants heavily with manure, and water sufficiently to moisten the soil; then syringe them with Gishurst compound 4 oz. to the gallon. The whole of the leaves should be thoroughly wetted with the solution on both sides, and the syringing must be repeated until the fungus has been destroyed. It is never wise in dealing with known enemies to wait for them to begin the attack. Insects of all kinds, as aphides, red-spider, thrips, etc., may be easily discomfited by taking the necessary measures beforehand. The first thing is generous treatment, and the next is, in anticipation of unfriendly visitors, to syringe with a weak solution of some insecticide. Soap-suds in which a little sulphur has been mixed are as good as anything. A very weak solution will have a cleansing effect upon the foliage of the plants, and the odour of soap is distasteful to insects. The floating spores of mildew do not take kindly to the surfaces of plants where the least trace of sulphur, soot, or lime is perceptible. Seedlings are more vigorous than plants raised from cuttings. In the days when we had no Hollyhock fungus we raised our Hollyhock seedlings in the open air, sowing the seeds about midsummer, and pricking out in a nursery bed, where they remained all the winter. Now they are commonly raised in heat, often late in autumn or winter, and hurried on by forcing temperature, and it is not unlikely that this treatment has something to do with the predisposition to disease so common among Hollyhocks now.

GARDEN WORK.*

Conservatory.

Growth is very rapid now, especially in the case of climbers and other plants planted permanently in the borders, and therefore the thinning and regulation of the growth requires frequent attention, especially as regards the Tacsonias and other free growing climbers, which, if neglected, soon get into a tangled mass. Climbing Roses in small conservatories, unless the ventilation is carefully managed, will be attacked with mildew and insects. I often at this season have my attention called to small conservatories in which are Maréchal Niel and other Roses badly attacked with mildew. It is an easy matter to suggest remedies, but in using either dry sulphur or liquid antidotes we must not lose sight of the cause. There are plenty of things that will kill the mildew on Roses and other plants; but it soon reappears again, unless the predisposing cause is removed, and in nine cases in ten the presence of mildew is owing to a bad system of ventilation, resulting either in stuffiness or cold draughts; or possibly to stagnation at the roots, caused by too much or too little water. When the roots of plants are in bad, sour soil mildew and insects are sure to be troublesome, and the same thing will happen if the soil is unnaturally dry. In both cases the circulation is impeded. In ventilating plant-houses at this season, when the wind from what quarter it may come has a chilly tinge in it, only a small crack should be given at first on the south or sheltered side, and as the day gets up, and the warmth of the sun takes the sting out of the wind, more air can be given. The majority of the owners of small conservatories wait till the house gets hot, and everything is covered with condensed moisture, and then make a rush for the ventilators and fling them open to their full extent. Is it any cause for wonder if insects or mildew abound in such places. The Swainsonias are very pretty greenhouse plants, of semi-climbing habit; just the plants for training up a pillar or up a rafter. They belong to the Pea-shaped class of New Holland plants. S. galegifolia alba has lovely white flowers, very useful for cutting. S. splendens has carmine coloured blossoms, and is bright and showy. Plant in peat and loam, made fairly porous with sand. Good specimens of the new dwarf Cannas make a brilliant group in the conservatory; in fact, in cold districts they will be more satisfactory under glass than outside, as the wind is destructive to the beauty of the foliage. These plants are easily raised from seeds. We saved seeds from some of the new varieties last year, and when sown in heat, without any soaking or other special treatment to induce germination, the little plants were poking through the soil in a very short time, and are now nice plants. It is interesting raising seedlings where you have the pedigree of the plants.

Unheated Conservatory.

The heated house is not much advantage now, as in May house fires will be discontinued. Fuchsias, Pelargoniums, Tuberous Begonias, and plants of various kinds will thrive well merely with the shelter and protection of glass roofs. I have seen the most lovely collection of Tea and other Roses grown in an unheated house, planted or plunged in the borders. The cool Rose-house is one of the most delightful structures one can have in the garden, and the plants are much more easily kept clean from insects, etc.

Stove.

The summer-flowering climbers must be grown in the light to have the growth sufficiently ripened to flower well. The usual way in dealing with Allamandas when grown on wire trainers is to link the young shoots as much as possible up to the wires near the glass, so that the ends of the shoots, where the flower-buds usually form, may be well ripened. When the necessary check has been given, and the flower-trusses formed, the shoots may be led back and regularly trained. Those who exhibit stove plants will find the stove climbers, or some of them, indispensable. Well-grown Allamandas, Dipladenias, Stephanotis, and Clerodendrons often form leading features in collections of large specimens. Repot Palms and other foliage plants which require more root space. Fill a lot of pots or pans with various creeping plants, such as Selaginellas, Tradescantias, Fittonias, Panicum variegatum, etc. Where much autumn and winter decoration has to be provided for these will be very useful.

Late Grapes.

Any reader troubled with mildew in a cool vinery will have a difficult pest to deal with. First ascertain the cause. If it arises from a dry condition of the roots in an inside border, the first step is to thoroughly moisten the soil, and, if possible, take the chill off the water if it comes from a hard source and has not been exposed to the air. It should be understood that a thoroughly dry border cannot be sufficiently moistened without repeated efforts. It is wonderful how often intelligent people deceive themselves in coming to a decision as to what constitutes a soaking of water, and when a border has been allowed to get unnaturally dry the water will pass round or over it without penetrating the dry mass, unless the surface is broken up and the watering is repeated several times. Mildew is often caused by cold currents rushing through the house. Ventilation requires care and judgment. Stuffiness is bad, but cold draughts are even worse. Having discovered the cause and removed it, the usual remedies—either dry sulphur or lime and sulphur boiled, and strained, and mixed in small quantities in the syringing water—will then do its work.

Cucumber House.

When well grown an immense weight of fruit can be cut from a comparatively small space, if rightly managed and supported with liquid or other stimulants. We grow a good many Cucumbers from this and earlier till September, and we attach much importance to frequent light top-dressings. We do not ventilate, and we find these top-dressings very valuable in keeping the atmosphere sweet and pure. Regular pinching also is an absolute necessity. If the shoots are permitted to run out, the overcrowding soon tells upon the fruit bearing.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Window Gardening.

Window-boxes may be filled now if the plants have been well hardened; there is room for more variety. Everybody seems to run upon the same class of plants. It is better to have an occasional failure in breaking away from the usual stereotyped line than to go on in the old rut.

Outdoor Garden.

By the time these lines appear in type many of my readers will be busy planting their beds with "Geraniums" and other tender exotics. For some time past the nights have been very cold, but when the change comes the plants which have been well hardened by exposure may be planted, beginning with the hardiest things first. Calceolarias, Lobelias, Stocks, and Asters, and well hardened "Geraniums" may go out now, but Heliotropes, Ageratums, and the fine-leaved plants, such as Coleuses, Iresines, and Alternantheras, had better be sheltered till the first or second week in June. If a cold wave passes over these they will be useless for any effect for at least half the season. Sub-tropicals, such as Castor-oils, Cannas, Fernandias had better be kept back and encouraged to grow till June is in and the weather settled and warm. Place the stake to Carnations early, so that a link can be placed to the stems as soon as they begin to run. Those who have trouble with Carnation disease should not give up growing these beautiful flowers, but should try to improve the soil by adding good loam, road-scrapings, old cow-manure, and soot in a small quantity. I have had as much trouble with these plants as most people, but by digging the ground and making additions in the way suggested above, we begin to see daylight, and are more hopeful of growing even the delicate kinds. Seeds of Carnations and Pansies may be sown now.

Fruit Garden.

Plant out a few of the early forced Strawberries for a late autumn crop. Garibaldi or Viscomtesse de Thury succeeds well in this way. All blind plants in the Strawberry-beds should be pulled. They usually make strong early runners, but they are not worth perpetuating, and if left there is a danger of the runners being planted. Continue the disbudding of Peaches. The covers might be safely removed now. If there are any signs of green-fly, use Tobacco-powder. Blistered leaves may appear on exposed trees after all the cold winds we have had, and should be picked off, as they are quite useless. It is quite possible that Peach-trees against warm south walls may require water, as very little rain reaches them, except when the south winds blow. Apple-blossoms are not so numerous on late sorts as we anticipated, but Codlins and most of the early Apples are well bloomed; but all the Apple-trees are healthy and timely precautions must be taken and the trees washed with an insecticide. I have found much benefit from the use of a solution of Sunlight-soap, and it is cheap and easily applied. Of late years more lime has been used among fruit-trees in winter, and the benefit has been considerable. Fruits under glass must have unremitting attention. I believe fewer Grape-growers syringe Grapes after the berries are thinned than formerly, preferring to give a humid atmosphere by damping borders when necessary. But the syringe should be used in the Peach-house till the fruit begins to ripen.

Vegetable Garden.

When Tomatoes are well hardened they may be planted out against south walls or fences in warm, sunny spots anywhere if the right varieties are selected. At the present I am not acquainted with anything better taken altogether than Early Ruby. Ham Green will ripen early in a sunny spot, and the quality is superior. If wanted merely for sauce, a good strain of Old Red gives weight of crop, but the fruits are not worth so much as the smooth varieties. Walker's Perpetual and Ne Plus Ultra are good Peas to sow now for gathering in August. Plant Canadian Wonder French Bean and the white-seeded Runner. Plant out early Celery. Shade till established and keep moist. Sow Rampion for salads. Radishes and other salad-plants will do now in a shady position. North borders will be useful now for Cauliflowers, Lettuces, Turnips, and Spinach. Sow Basil and Marjoram on south border, or plant out if raised under glass. Cucumbers in houses and frames will require frequent attention in the regulation of the growth, watering, etc. In houses where the new ventilation system is carried out the growth will be rapid. Sow Spinach Beet and plant out New Zealand Spinach. Plant Brussels Sprouts and Cauliflowers. Sow Walcheren Cauliflowers for autumn. A few seeds of the Autumn Giant may be sown at the same time. This will come late. E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from May 22nd to May 29th.

We are just in the midst of the bedding-out of tender plants, but the sub-tropicals and tender foliage plants will wait a few days longer, as our climate at the best cannot be depended on before June. There is plenty of floral beauty in gardens now where flowering shrubs have been planted freely. Thorns, Lilacs, Laburnums, Ribes or Flowering Currants, and other things such as Siberian Crabs and Pyrus japonica in various colours have been very bright. Masses of the Evergreen Berberis Aquifolium, stenophylla, and Darwini, and the dwarf early-flowering Broom (Andreana) are always charming at this season, but they are most effective when grouped together, not dotted about in little bits of colour. The mowing machine goes its round weekly now, and the roller is used after rain. Tennis-lawns must have regular attention now. New lawns where weedy have been dressed with lawn-sand. This certainly kills the weeds. It also browns the Grass a little, but the Grass soon recovers, and is bright and stronger after its use. The large weeds, such as Plantains, have the tops cut off with a knife, and a little of the sand is then placed on the wounded plant. Daisies in weedy lawns generally grow in patches and kill the Grass. In

such cases the Daisies are sprinkled with the sand, and they disappear. The sand should be used in dry weather as it is the more effectual, and does less injury to the Grass. The directions supplied by the makers say use from 3 oz to 5 oz. per square yard, but in bad cases we have used a little more than this. Planted out Vegetable Marrows and ridge Cucumbers. We do not plant on hills of manure, but a bushel or so of good compost is placed where each group of plants or seeds are placed. For the early lot, plants are grown under glass; for the other bed, holes are made among the Broccoli. A little good compost is placed in the holes, and three or four Marrow-seeds dropped and covered half-an-inch deep. These Marrows and Cucumbers which have not been started in heat always bear freely till cut off by frost, and are less troubled by mildew. Planted out Brussels Sprouts. Pricked out Broccoli to wait till the ground is ready. Late Broccoli with us generally follows the early Strawberries without much preparation being given to the ground beyond chopping up the Strawberry-plants with the spade. If the weather is dry at the time, the Strawberry *débris* when wetted and dried is burnt, and the ashes scattered about. When the ground has been too hard to plant with a dibble, I have made holes for the Broccoli with a crowbar, filling in with the loose soil near, and watering the plants thoroughly. The ground is always trenched for Strawberries, so there is no hard pan beneath, and the growth of the Broccoli is firm and hard, and able to resist frost. Shifted on Zonal Pelargoniums and Fuchsias. The Fuchsia is scarcely so popular as it was, which is, I think, a pity.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

628—**Tea Roses in Jadoo-fibre.**—Will some reader kindly give their experience of growing Tea Roses potted in Jadoo?—NEMO.

629—**Trapping Sparrows.**—Can any of your readers tell me of some merciful trap or snare for Sparrows? I am overdone with them.—BIRDLIME.

630—**Plants for north border.**—I shall be obliged if you will kindly give me a list of the most suitable perennials (or hardy bulbs) for a border facing north, and getting little sun, with a close loam on a clay subsoil? I can get about three rows of plants.—SUBURBAN, *Streatham.*

631—**Strawberry growing on a moor.**—Would you kindly favour me with the following particulars and oblige? I have been offered 20 acres of heath land, light soil, sand and gravel under, three miles from seaside. What I wish to know is whether heath land is suitable for Strawberry growing, as that is what I require it for. The situation is open. Any information will be gladly received, as I do not understand heath land?—W. B.

REPEATED QUERIES.

578—**French flower-baskets.**—Where can I get those light oblong Reed-baskets or hampers for sending flowers by parcel post or train—the same kind as seen in markets in south of France?—BARONESS.

579—**Peppermint.**—Could any of your readers give me information as to the culture of Peppermint (Mentha piperita) as a commercial crop? I have been told there are large fields of it grown near London. Also where I could purchase seed or roots?—MEGARITY, *Ulster.*

483—**Hedgehogs.**—Can you or any correspondent help me in this? I have had both old and young ones, and find they die after about eighteen months. They have had bread and milk several times a week, and their winter burrow has been in a heap of dry leaves in a lean-to house, which never freezes hard. I keep them, as I find they clear off a large quantity of slugs, sowpigs, and insects.—CLIFTON.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

632—**Honeysuckle** (*Pant*).—A partial shade will suit the Dutch kind, and this we think the sweetest scented Honeysuckle.

633—**India-rubber plant losing its leaves** (*W. F. O.*).—We can only suggest that your plant is kept too cold for the formation of new leaves. They enjoy a moist and warm atmosphere when developing fresh foliage. The fine full-grown and healthy leaves would seem to confirm this.

634—**Plants growing too high** (*H. Somers*).—Keep down by pinching the plants, except the Beet, which, of course, you must leave alone.

635—**Destroying Ants** (*J. C.*).—Bits of sponge soaked in sugar and water, and laid about their haunts will trap them; or if you can find their nest, pour boiling water into it.

636—**Wild fruits** (*A Learner*).—You might use the Alpine Strawberry and Blackberry, also some of the cultivated varieties of the latter. There are few others besides those you name.

637—**Bedding out** (*G.*).—There is plenty of time yet for bedding out, and we will help you if you kindly say which is the front of your ground, its aspect, and whether a lawn or open soil.

638—**Treatment of Grass pathway** (*A Learner*).—In the first place you must level your ground, or at any rate see it is uniform in slope. For further information on this point see our issue of April 10th.

639—**Vines unsatisfactory** (*W. H. Bawtey*).—Probably your Vines have been overcroppod or not rested. You can shorten growth a little, but not spurs now. That must be done in winter when at rest.

640—**Gloxinia leaf infested** (*Ireland*).—There were no insects on the leaf that reached us, but we think you have probably kept the foliage too moist, and hence its tendency to decay at the base.

641—**Transplanting Hybrid Aquilegias** (*James J. Atkinson*).—You cannot transplant now, unless you lift with a very large ball of soil, and well water at once. Better wait until they die down in the autumn.

642—**Louise Bonne Pear diseased** (*Basil*).—The leaves are blistered owing to cold east winds of late. There is no help for it. The trees will soon grow out of it with genial weather. Probably your trees are exposed, or they may be young trees.

643—**Best liquid-manure for Cucumbers** (*H. Brown*).—The best liquid-manure is that from stables or cow-yard diluted, and failing this use guano water. Put 1 peck of best guano to 20 gallons of water, add to this 1 peck of soot. Use it in a clear state, and give it to fruiting plants twice a week.

644—**Perennials for bed** (*Bibur*).—Pansies, Anemone japonica, herbaceous Phloxes, Pæonies, Gaillardias, Aquilegias, or Doronicums might suit your purpose. We do not think you would find it too hot for Pansies. The tufted kinds are more continuous bloomers, and make a much better show.

645—**Cherry-pie** (*John A. Wheeler, N.H, U.S.A.*).—The name of this plant is the Heliotrope or Heliotropium, and is known generally under the name of Cherry-pie in England, doubtless from it Cherry-pie-like smell. It is, as probably you are well aware, a greenhouse plant, though much used in the summer garden.

646—**Tomatoes not growing** (*James J. Atkinson*).—The three Tomatoes you name are excellent varieties, and we cannot suggest why you fail with them when under similar treatment to that found so successful with Ham Green. It may be from cold soil or water, or perhaps the unseasonably cold weather has affected them.

647—**Vines not fruiting** (*A. C.*).—No, your Vines will not break or show bunches this season if shortened back. They have been overcropped or grown too thick, and wood is not matured. You should shorten shoots, say 2 feet; in fact, give same treatment as if they bore fruit. You will then get good wood well ripened for next year.

648—**Treatment of old Azaleas** (*Bill*).—Although your trees are so old, there is no reason why a good display of flowers should not be secured. We should see that the drainage is sound, and then mulch with an inch or so of coal-soot. Be sure and give careful attention to water supply after this. It would be better to house a little earlier than October.

649—**Tomato culture** (*North Lincolnshire*).—You would do well to grow the Tomatoes in pots or boxes, say 12-inch to 16-inch pots, one in each; certainly not in old tin pails. Of course they would do well in a border, but we think pots would be less trouble, and you would get more fruit. If you grow in a border have ample drainage, 3 inches to 1 foot of soil, and plant at 12 inches apart. See note on Tomatoes, last week's issue.

650—**Cooperia Drummondi** (*Cestrian*).—There are only two species of Cooperia; this and C. pedunculata. They are natives of Mexico and Texas, but are not hardy with us. Grown in a cool greenhouse or frame, however, they are easily kept in health, and when properly ripened will not fail to develop their fine, white, fragrant flowers. In September the plants should be gradually ripened, and in the winter must be kept quite dry.

651—**Tecophylæa cyanocrocus** (Chilian Crocus (*Cestrian*).—This is one of the most distinct of all the blue-flowered Liliads. Unfortunately, it is never likely to prove hardy in English gardens, but it might be grown in light soil on a south border, and covered with a handglass during severe weather, or in a frame facing south, as in the Royal Gardens, Kew. It is a Chilian plant. It might be grown in pots too in a cold-frame.

652—**Leaves of Apples and Pear-trees dying off** (*W. Foot*).—Your trees have suffered from drought, and probably have few roots to sustain them. You cannot expect Apples and Pears on newly planted March trees, without roots to feed them. Try and get new leaf-growth, you will then get ample roots. Damp trees overhead in evenings to help them. A good Pea is Ne Plus Ultra, a tall Pea 5 feet. A good dwarf is Sturdy, 3 feet.

653—**Calceolarias, etc.** (*P. J. E.*).—Suitable size pots in which to bloom Calceolarias and Cinerarias would range from 6 inches to 8 inches over. Cannas need an 8-inch to 10-inch pot, while the Cyclamen and Primula may be done well in a 5-inch size. Pot on the Abutilons into a 6-inch pot now, giving a rich loamy compost. Stand in the open from end of June until September, then house and water freely. A little extra heat and manure-water will increase their flowers at any time needed. Pinch the tips of growth a few times during summer. You are treating your Stephanotis correctly, and we hope you well drained the pot. By no means head the shoot; it should grow 10 feet to 20 feet long, and flower throughout its entire length. If you pinch it back, comparatively useless laterals will result.

654—**Artificial manure for Strawberries** (*D. C.*).—You may use nitrate of soda now in showery weather, fish-manure, or guano. Use nitrate of soda at the rate of 2 cwt. to 3 cwt. per acre, guano 1 lb to a pole of ground, applied at once. Same for fish-manure. Runners should be cut away from Strawberries at once. With regard to fruiting, so much depends upon size of plant. Those planted in October should not bear fruit.

655—**Tulips diseased** (*John Eckford*).—The cause of the Tulips going off is purely one of weather. The recent hail-storms did considerable damage to Tulips in many parts of the country. The hail perforates the foliage, after which decay sets in, and a fungus follows, which, if allowed to continue, reaches the stem, and eventually destroys the bulb. The only thing to do is to cut away all affected foliage and flowers, and the bulbs will thus be saved.

656—**Planting beds** (*A. L. O. F.*).—If you properly enrich the soil of your very dry bed, and attend to watering in the summer, we think the Begonias most suited from your collection, but they will need plenty of water. Certainly a bed of all Fuchsias would look well, but you must plant with care in the matter of height of different varieties; these will also enjoy plenty of overhead watering. With the number of subjects you have, there should be no difficulty in getting a good display.

657—**Cucumbers leaves drooping** (*Amateur*).—We think your plants must be wrong at the roots. We fail to detect insects, though red-spider is present, but not enough to affect the leaves. Wireworms at roots or disease may be the cause. We fear it is useless to plant in the same soil. Examine the roots for cause, and we will advise on remedies if you can give us further information. We fear it is club at the roots, and if such is the case you will need to get rid of the pest. Send a specimen of the root.

658—**Tomato growing** (*Alpha*).—For Tomatoes one row of pipes would be ample; on other hand you may some time wish for more heat. Our advice is to have a return and flow pipe on the coldest side of house and end. This is ample for most purposes in sized house named. A boiler, such as the Beeston or Loughborough, which requires no brickwork, and is fixed in outside wall, would suit well. The cost is small. We are unable to advise firms or give price. Consult our advertising columns; you will find what you need.

659—**Carnations doing badly** (*Fortyseven*).—It is difficult to advise without seeing the plants. It would not have mattered the plants being in a frame if they had been allowed free ventilation. I should advise allowing the stronger plants to flower, and cut down the more weakly ones. The growing points are flowering-stems, and would be no use as cuttings. The side-growths will do for cuttings, but it would be better, as they are not tree-Carnations, to allow them to grow on the plant, and layer them later in the season.—J. DOUGLAS.

660—**Decayed Carnations** (*Mrs. W.*).—It is not an uncommon occurrence for the plants to die off when they ought to start into growth in the spring, and most failures occur after an excessively wet winter and spring. The wet causes the root hairs to decay, and of course an effort is made by the plant to produce fresh roots, but continued wet causes decay to again set in, and many of the weaker plants are unable to struggle against the adverse conditions under which they are placed, and succumb to the continued bad weather.—J. D. E.

661—**French Beans and Strawberries failing** (*L*).—The temperature is much too low. Seventy degs. to eighty degs. during the day is none too high, giving 60 degs. to 70 degs. at night, with abundance of atmospheric moisture. Leaves sent are scorched, as if starved at one time and not enough air at others, or kept short of water or may be too late in syringing in the morning overhead. No. 2 requires just the reverse treatment. No heat till pots are full of roots, and then what is termed greenhouse temperature; but season is passed for No 2; on the other hand the culture is most simple. No 3 requires varied treatment, and we are unable to go into details. Specimens sent failed to set. Plants up to time of blooming require 50 degs. to 60 degs. with ample air, quite different culture to No. 1. After setting, give more heat. The failures are not owing to stock, but bad culture we fear.

662—**The best Rhubarb.**—What is the best Rhubarb and easiest to grow?—NOVICE.

*** *Best Rhubarbs are Victoria and Hawke's Champagne. For early use or forcing Royal Albert is very early and bright in colour.*

663—**Temperature for greenhouse.**—Would you kindly tell me through your valuable paper what temperature I should keep my greenhouse from May until October? It gets a great deal of morning sun, and sometimes goes up to 80 degs., with a fall at night to under 60 degs. It is only heated in winter to keep out frost.—GULTRA HOUSE.

*** *This is a very wide question. What do you wish to grow, tropical or ordinary greenhouse subjects? You see it all depends upon that. As a rule, 70 degs. to 75 degs. from sun heat, [illegible] to 60 degs. at night and upon dull days, is a good average temperature for the generality of greenhouse subjects.*

664—**Cannas.**—I have some Cannas—such sorts as Germania, Amiral Coubert, A. Bouvier—raised from seed this spring. Will you please tell me what sized pot they should be put in to flower? Also will they flower this year if kept in pots in the greenhouse? And please tell me the cause of some of the bottom leaves becoming spotted with brown and then withering away?—JOSEPH ELGOOD.

*** *An 8-inch pot will be suitable; do not use any less than a 6-inch size. Be very careful not to injure their fleshy roots. Overcrowding, or a spell of drought is probably the cause of the brown leaves. The strongest seedlings should flower this year.*

665—**Starved Magnolias.**—What is the best treatment and manure for Magnolia growing against a house and which looks starved?—M. F. L.

*** *These need a fairly rich and open compost. Mulch with a little well-decayed stable-manure, and lightly fork this in later on; also water with a little liquid from the cow-stall or stable.*

666—**Plants in Cumberland.**—Would "W. H. L, (Cumberland)," kindly give his experience of the following plants in his climate? The writer lives at an altitude of 1,000 feet above sea-level, and his experience of the following is rather disheartening—viz., Aubrietias, Alyssum saxatile, Erysimum ochroleucum, early Rockfoils—*i.e.*, Saxifraga Burseriana, Lychnis, Viscaria splendens, named Aquilegias, Armeria Cephalotes, and Thymes. With the writer they (including Pansies) either disappear in winter or are left in spring mere bare stems.—SCALPEL.

*** *All you name are quite hardy under certain conditions, but the Pansies must be made into cuttings, and these planted in a cold-frame in late autumn. I fancy your garden is in an exposed position, open to N.E. winds, or does it get saline air from sea storms, or is the soil very damp (a rock garden best suits the majority)? Snow burial is Nature's plant protector—Braemar an example.—W. H. L.*

667—**Black Hamburgh Grapes.**—We have some Vines of this kind, the fruit on which has just been thinned. At several of the lower joints they are throwing out what appear to be bunches of roots. Is not this somewhat unusual? Should they be pinched off?—P. J. G.

*** *The roots on your vine are air roots, caused by humidity, and are often seen on healthy Vines. These will not make much progress as bunches swell and more sun heat and air are allowed. You need not remove them, they are harmless.*

668—**Mushroom spawn in boxes.**—Could you please tell me how and when to set Mushroom spawn in boxes? I have a cellar, but no sun shines in it. I shall be greatly obliged if you will reply in your paper.—H. L. B.

*** *A cellar is an excellent place for Mushrooms if in an unoccupied house, but you will find it a mistake otherwise. Darkness is an advantage rather than otherwise. You need deep boxes, at least a foot of short stable manure from corn-fed horses, pressed very firm, then covered with 2 inches of light loamy soil, again beaten down, and pieces of spawn set about a foot apart. Do not water with cold water.*

669—**Stopping Cucumbers.**—Kindly tell me how to stop Cucumbers planted out in a house of about 60 degs to 65 degs. warmth? What length should the shoots be allowed to attain before stopping them; also, should the male flowers be removed? Any other hints as to their management would be welcome.—A RAISER.

*** *Your temperature is none too high, and with regard to stopping the plants, so much depends upon length of rafter, as if you stop you prevent plants filling roof space. You should stop, say, three parts up roof if you need it covered; if you only want a portion you may stop at 2 feet from base. Yes, remove useless flowers. You will see notes as to management.*

670—**Syringing Vine-leaves.**—As a subscriber to your paper I am anxious to know whether the leaves of my Vine may be syringed, now that the Vine has blossomed, or whether only the floor of the greenhouse can now be watered before closing?—H. B. D. P.

*** *You may syringe your Vines up to the time the berries begin to turn colour, but you must use rain-water free of sediment, or it will mark the berries. Many good Grape-growers do not syringe after setting, and so much depends upon the house, if you can keep it moist. Close early when sun declines, and use other means to retain moisture. In a mixed greenhouse one is often obliged to vary culture to suit various plants, and syringe to keep Vines clean.*

671—**Treatment of perennials.**—May I ask how you would advise me to set about cleaning and tidying four large beds of perennials which twenty years ago were looked upon as one of the sights of the county, but which during the last few years have become so full of weeds, Coltsfoot, and Hemlock as to make it very difficult to make tidy?—ALBERT BRIGGS.

*** *As the perennials have been so neglected it would be well to wait until autumn, then lift and replant, after cleaning the ground thoroughly.*

672—**Chinese Primulas after flowering.**—I grew some extremely fine Primulas from seed. Now the bloom is quite over, I hope they will be of some use next year. How shall I treat them in the meantime?—J. E. C., *Berks.*

*** *The Primulas are really not worth saving round for a second season. Far better sow a fresh lot from the same strain, and treat in the way you found so successful before.*

673—**Removing dead flowers from Rhododendrons.**—Is it desirable or necessary to obtain good flowers from Rhododendrons to nip off the dead stalks of last year's flowers?—A LEARNER.

*** *If you prevent the old flowers from seeding you avoid waste of plant strength, and secure the latter for benefit of future growth, and thus get better and more numerous trusses for the next year.*

674—**Clematis cuttings.**—Could I take cuttings of a double white Jackmani Clematis, also a pale mauve lanuginosa one? When and how should it be done? I should also be glad to know the name of a good large-flowered single white variety of Clematis, and a pale blue one that would flower at the same time? Both are required for planting on a sheltered south wall.—ABBEY.

*** *A note upon the propagation of Clematis will shortly appear. We should say the two best for your purpose are Henryi, white, and Lady Bovill, blue.*

675—**Scillas** — At what depth and what distance should they be planted?—N. A. F.

*** *Plant between 2 inches and 3 inches deep, and the same distance apart for the early-flowering kinds, but of course give more room to such robust forms as S. campanulata and S. nutans.*

676—**Vines infested with thrips.**—Would it be safe to smoke with Tobacco-paper Grapes about three part grown?—RETFORD.

Yes, you may fumigate with safety, but it is best to do the work twice or thrice in preference to one strong dose, and in the evening, taking care the foliage is dry. Avoid flame.

677—**Cyclamens after flowering.**—Kindly tell me what to do with my Cyclamens which have done flowering, and when to pot for next year's blooming, and best compost?—ANON.

*** *Keep in a cool-house, and do not apply quite so much water at present. Repot next September, and use a compost of turfy loam, leaf-soil, and rotten vegetable refuse. A little old mortar-rubble is also a great help to Cyclamens.*

678—**Various types of Pelargoniums.**—I should be much obliged if you would tell me the difference between the varieties of Pelargoniums, as although I have been a gardener for many years, I do not know exactly? I mean the show, regal, spotted, and decorative.—TWEEDSIDE.

*** *These are synonymous terms. A show Pelargonium is also a regal or decorative; a spotted one is merely a spotted bloom.*

679—**Destroying Nettles.**—How am I to get rid of Nettles in a long neglected lawn and shrubbery under rocks, especially when the Nettles are growing amongst very thick Laurels?—M. F. L.

*** *This is quite impossible without lifting, or constantly pulling out by the roots as they grow. Constant cutting over will in time kill them. Water, to soften the soil, then pull out after protecting the hands with gloves. It is one of the worst weeds possible. We have known it killed beneath trees, hedges, and among roots, by keeping chickens confined there for a time; but this would, of course, kill all other small plants and roots.*

680—**Sowing wild flowers.**—I am wishful to promote the growth of wild flowers by the sides of country lanes and walks through plantations. What are the best seeds to use for this purpose, and is it sufficiently simply to drop them by the wayside?—A LEARNER.

*** *Either collect seeds and sow in small patches just covering with good soil, and ensure a fair start by cutting away a sod or two of the other wildings, whether Grass or weeds, or grow a few seedlings more under supervision, and transplant when they can be handled. Primroses and many others may be used; they are far too numerous to name.*

681—**Heliotropes.**—I have some small Heliotrope plants that I want to grow into bushy plants. They are about 4 inches or 5 inches high, and on the top there is a tiny flower set. Ought I to pinch this off to make it throw out side-shoots, as they are only single stems at present? If you will kindly give me an answer through the medium of your valuable paper, I shall be much obliged.—H. L., *Surrey.*

*** *It would have been better had you pinched out the tip earlier, say when 3 inches high. Your plants will throw side-shoots from below the flower-truss, but had you stopped them sooner, there would soon be three or four trusses instead of one.*

682—**Cleaning coloured tiles in conservatory.**—I have a conservatory laid with coloured tiles (not glazed). Can you tell me how they are to be cleaned, as they are so very dull, and look dirty; and must they be done often?—FLORA.

*** *Sand will remove the green growth on ornamental tiles. Scatter it thickly over them, and scrub well with a hard broom or scrubbing-brush. We answered this question in* GARDENING, *May 1st, p. 129.*

683—**Claytonia perfoliata.**—Will you be kind enough to give me some particulars about Claytonia perfoliata. Some in this neighbourhood say it is a Canadian plant, and that the seed must have been brought over in Canadian hay. In the edition of the "English Flower Garden," of 1889, I find you say that it "is a weed in many localities." It grows as a weed in my garden, but my neighbours, two of whom have planted it in their gardens as a rare plant and a great curiosity, owing to their idea of how it was brought over, say still that it is a foreign plant, localised here. Neither Sowerby nor Withering mention it. I have never had any Canadian hay.—A. LYNE.

*** *Claytonia perfoliata is a North American plant, where it is used as a substitute for Purslane. It was introduced in 1794, and is an annual. It is naturalised in some places in Britain.*

684—**Planting climbers.**—Is it too late to plant the following climbers mentioned in the article "Trees and Shrubs" in GARDENING, 24th ult.? If not, do you know any firm who are very likely to have them? Berberidopsis corallina, Magnolia grandiflora, Cratægus Pyracantha, Common Myrtle, Choisya ternata. Perhaps you could give me an idea of the price of them?—POPPY.

*** *You should be able to procure fairly good plants of all but the Magnolia for 1s. 3d. to 1s. 6d. each. The Magnolia would probably cost double. Any good general nurseryman or florist could supply. It is not too late to plant from pots. We always endeavour to publish our notes at a seasonable date.*

685—**White Asparagus.**—I saw an answer to a correspondent in GARDENING a few weeks back, in which it mentioned that there was no white Asparagus, only bleached. I enclose a sample of white that grows naturally in the open ground in the garden where I work.—J. SOFFE.

*** *You cannot call the Asparagus sent white. It is a light green, and had you allowed a longer period of growth, it would have been greener still. There is no pure white Asparagus unless bleached by covering. There are degrees of colour. Yours is a light-coloured variety.*

686—**Black Hamburgh Vines not fruiting**—My Vines show no fruit. They were started first week in March, and have run to tendrils instead. Last year they showed about five bunches, and there ought to have been fifty. Kindly tell me through your valuable paper what I can do to the Vines to have plenty of fruit next year? There are little eggs or something on young growth about the size of a pin's head. What would they be? Are they insects?—H. SMITH.

*** *We fear your Vines are very weak, probably too much crowded, or you may not rest sufficiently. This is fatal and often the cause of barren growths. We are unable to help you re matter of insects without you send us specimens of growth.*

687—**Vine-blossoms unsatisfactory.**—I enclose a Vine-blossom which you will notice is curled into a ball. A very large number on my Vines this year have done the same. Can you tell me the cause, and can it be prevented?—NORFOLK.

*** *The cause is weakness of Vines, either from over-cropping, crowding of foliage, or want of root power. Which—or it may be all—we are unable to say without particulars respecting culture and other details.*

688—**Growing Cucumbers.**—Will you kindly let me know what heat to keep a greenhouse at for growing Cucumbers? Also do they want much ventilation, and can I grow Tomatoes in the same house?—A. W.

*** *Sixty degs. to sixty-five degs. at night for Cucumbers; ten degs. higher by day. You see this is stove temperature. They need scarcely any ventilation, but shade and moisture. On the other hand this is much too high for Tomatoes. These want plenty of air, no shade, and little moisture. They are best apart. Either grow one or other in a greenhouse. Tomatoes would be best.*

689—**Grapes not colouring properly.**—I have a lean-to greenhouse over a baker's oven in which I have a Vine (Black Hamburgh). I generally get a good crop of Grapes, and very early, but they never colour satisfactorily, as they are more of a greenish-purple than black. It is very dry, but I put plenty of water down every evening before closing. If any of your readers will kindly give me a hint as to treatment when colouring I shall feel very much obliged?—AMATEUR GARDENER.

*** *We think you overcrop, as that is fatal to good colour. You give no idea as to crop. Vines require more attention previous to colouring, more moisture, but less as the berries turn, and more air. Do you give the latter, leaving air on ventilators all night? In such a position you would do well to throw water about freely several times a day.*

690—**Making a stimulant.**—I propose making a stimulant in accordance with advice given in your interesting and valuable paper some time ago—namely, by immersing soot, contained in a bag, in a cask of water. Will you kindly give me some idea as to the proper quantity of stimulant to mix with each gallon of water (pure). The cask I have is 3 feet high by 18 inches wide. Quantity of soot immersed, 1 peck. Are tea-leavings of any use as a stimulant? Thanking you for past help.—PANT.

*** *One bushel of soot, or even two bushels, would be none too much for cask named. You would also do well to add other foods, such as guano or fertiliser, in addition to pure soot. Sheep-droppings or cow-manure is excellent. What good can you get from old tea-leaves? Such refuse does more harm than good. Plants do not live on weak tea.*

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. S.—We will certainly consider the matter. Thanks for letter.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*J. M. H.*—Rose Lamarque.——*A. C.*—Retinospora filifera.——*W. J. Whittington.*—The Judas-tree (Cercis Siliquastrum).——*U. U. S.*—1, Orchis Morio; 2, O. mascula ——*J. M.*—The flower sent for identification is a very fine form of Cœlogyne asperata Lowi.——*W. J. C.*—1, Polygala Dalmaiseana; 2, Sparmannia africana; 3, Salvia of some kind, but flowers had faded; 4, Russellia juncea; 5, Diplacus glutinosus; 6, Centranthus ruber; 7, Garrya elliptica.——*E. M.*—Diplacus glutinosus.——*Mrs. C. Stover.*—Andromeda floribunda.——*M. L.*—1, Forsythia suspensa; 2, Rhodora canadensis; 3, Kerria japonica fl.-pl. (Jew's Mallow); 4, Berberis Darwini; 5, withered; 6, Epidendrum vitellinum (Orchid).——*W. W.*—1, Santolina incana; 2, Erigeron multiradiatus. The Heliotrope is covered with green-fly. Smoke the greenhouse gently, repeating the dose a little later. You must give particulars. Heliotropes require merely ordinary and greenhouse treatment.——*Acanthus.*—The edging plant is Santolina incana; the tree, or shrub as you call it, is the Bird Cherry (Prunus Padus). Other query answered in reply column.——*J. Stalker.*—1, Bird Cherry (Prunus Padus); 2, Chinese Crab (Pyrus spectabilis).——*Roc.*—Bird Cherry (Prunus Padus).——*Mapperton*—Double Jew's Mallow (Kerria japonica fl.-pl.). The plants can be easily grown from cuttings taken in the summer months from flowerless wood.——*A. T. W., Herts.*—Pyrus Malus floribunda.——*Albert Briggs.*—1, Lonicera tatarica; 2, Withered; 3, Spiræa flagellata; 4, Prunus sp.; 5, Lungwort (Pulmonaria officinale); 6, Spiræa filipendula fl.-pl.——*G. B H.*—1, Saxifraga Wallacei, also called Camposi; 2, Geranium macrorhizum; 3, Geranium phæum; 4, Heuchera Richardsoni; 5, Saxifraga lingulata; 6, S. hypnoides.——*Mrs. Lindsay.*—It is not at all easy to name Tulips and Narcissi unless their characters are especially defined, but we think the following are correct names: 1, Not recognised. There are many kinds similar; 2, Tulip Golden Crown; 3, Tulip Buenoventura; 4, Withered; 5, Ordinary Pheasant's Eye Narcissus (N. poeticus)——*K. L.*—1. Skimmia japonica; 2, Phlox subulata and Ribes aureum. Two plants were labelled the same, the shrub with yellow flowers is the Ribes; 3, Allspice-tree (Calycanthus floridus); 9, Leopard's-Bane (Doronicum plantagineum); 10, Double Ragged Robin (Lychnis Flos-cuculi fl.-pl.); 13, Venus' Looking-glass (Specularia Speculum); 15, Delphinium, but cannot name without flowers. We may remind you that six is our limit to name at one time, and in several cases you have sent no flowers. We name all we can. Please send bloom of others.——*Lavender.*—1, Sequoia (Wellingtonia) gigantea; 2, Sciadopitys verticillata (Umbrella Pine); 4, Erica mediterranea hybrida; 6, Rosmarinus officinalis (Rosemary). Two specimens, Nos. 3 and 5, had got their labels displaced. The one with narrow green leaves and russety tomentum on the under surface is Sedum augustifolium. The other specimen with

white flowers and glossy green leaves is Choisya ternata. ——*Somerset.*—1, Skimmia oblata; 2, S. oblata rubella; 3, S. japonica; 4, S. oblata (splendidly grown); 5, Acer pennsylvanicum; 6, A. Pseudo-Platanus purpureum.——*Miss Read.*—Libonia floribunda.——*E. Bellows.*—Myosotis sylvatica. Sow seed any time in the summer.

BEES.

Bar-frame hives (*Many Pits*).—One of the most complete and perfect frame hives for general purposes contains ten bar-frames, has double walls back and front, porch, and zig-zag entrance, is provided with a crate of sections, and a lift for shallow frames or sections. A hive of this description costs about 12s. 6d. If you wish to introduce a swarm into a frame hive you should first get the frames fitted with comb foundation, either in full sheets or in strips 2 inches wide, and then shake the Bees out of the hiving skep on to the top of the frames, and place the quilts lightly over them. They will quickly run down and cluster upon the foundation. Another way of getting the Bees into the frame hive is to throw them from the skep down upon a cloth spread over the alighting board, and let them run in at the entrance, having first put the quilts upon the top of the frames. If your straw skep contains a stock of Bees you cannot shake them into a frame hive, but can, if you wish, transfer combs and Bees to it in the following manner: Having cut the skep from top to bottom in a line between the central combs, and divided it in two parts, place a piece of flannel, or some other soft material, upon a board a little larger than a frame. Upon this place two pieces of tape a few inches apart, then having cut out a comb from the skep, and brushed back any Bees adhering to it, lay the comb upon the piece of material, and a frame upon the comb. Should the comb be larger than the frame, mark inside the bars and trim the comb so as to make it fit into the frame, and tie the tapes round it. Upon completing this operation at once suspend the frame containing the comb in the frame hive, and cover with a quilt. Having transferred all the combs in this way, shake the Bees out of the skep into the frame hive, which place upon the stand the skep formerly occupied. Any combs that are not deep enough to fill the frames should have a piece of lath placed beneath them, with a third piece of tape under the lath, so as to fit the comb up to the top bar of the frame. Care must be taken to place brood combs together in the centre of the hive, and to keep all warm. In two or three days the Bees will have fixed the combs into the frames, when the pieces of tape should be cut and drawn out from the top. Transferring is more easily performed after a swarm has left the skep, because the population is then, of course, much reduced. A sheet of queen-excluder placed upon the frame will, as a rule, prevent the queen going up into the supers. It is useful also where broad frames of sections are placed within the hive, as in this case a divider of queen excluder will keep the queen to the brood-nest. Again, where frames run parallel to the entrance swarming may be prevented by placing a queen-excluder near the entrance of the hives, as its long perforations are just large enough to allow the worker Bees to pass through freely, while it prevents the queen from doing so, although it must be admitted that a very small variation in the size of the perforations defeats its object. You can obtain hives and all Bee-keeping appliances of any of the dealers in modern Bee-keeper's supplies, such as Neighbour, of High Holborn, London; Blow, of Welwyn, Herts; or Howard, of Holme, Peterborough.

LAW.

Gardener's notice to quit.—You give a curious decision as to this. The master told the gardener he might take anything he had put into the ground. Of course, that authorised him to do so; but you go on and say in regard to fruit-trees: "Indeed, as these were planted in nursery rows, and were not permanently set out you could remove these without anyone's permission." That is an extraordinary doctrine. Do you really hold that a gardener paid a weekly wage and a free cottage can plant in his master's ground any fruit-trees he likes, spend his time upon them (a gardener has not set hours any more than a coachman or a house-servant), and when he leaves, carry off the fruit-trees he has grown on his master's ground, without his master's permission, and applying his own labour, which his master bargained with him was to be used on his master's work? Can you quote any settled case which so decides?—G. A. H.

*** Your remarks appear to be founded upon a misapprehension of the facts. The original query (answered on page 142) referred to a garden with a cottage occupied by a gardener as part of his wages. Although he was not in the legal sense tenant of the garden, he occupied it with his cottage, and could have maintained an action of trespass against his employer if the latter had forcibly interfered with either the cottage or the garden. You say that a gardener has no hours of labour, any more than a coachman or a house-servant—a proposition that is not strictly correct, but from which you infer that the employer is entitled to the profit or gain arising from the labour of his servant during hours when he was not expected to be occupied in his employer's work. Apparently you contend that every minute of the gardener's time not actually occupied in eating and sleeping must be spent in his employer's garden, and that if he plants Potatoes in his cottage garden for the use of himself and his family, his master may, at any time he thinks proper, convert those Potatoes to his own use. When he quitted his service the gardener was in practically the same position with regard to his garden as any other occupier would have been, and any occupier may remove fruit-trees so planted in nursery rows and not permanently set out.—K. C. T.

Purchasing greenhouses by tender (*Mildenhall*).—As you made it a special stipulation that the roof should be of 21 oz. glass and the glass supplied, or some of it, is only 15 oz., you are at liberty to refuse what has been sent, or to sue for the difference in the value of 21 oz. and 15 oz. glass. But if there was no express stipulation as to size of squares, you are only entitled to a reasonable size. It seems that 2½ inches or 3 inches by 8 inches cannot be a reasonable size for a greenhouse roof, and you may therefore decline to accept these small sizes. The mischief probably is that you have paid cash before delivery, and so do not care to return the materials. But you seem to be at liberty to do so and to then sue for the return of the purchase money, or if you prefer, you may simply sue for the difference in the value of glass of a reasonable size and glass of the size actually supplied. Two shillings and ninepence is not a reasonable compensation, and you are perfectly justified in refusing to accept it. If the small squares are comparatively few it will be scarcely worth your while to sue, as the cost of proving what is a reasonable size may be considerable, but you can have no great difficulty in maintaining an action for the difference between the value of 15 oz. glass and 21 oz. glass.—K. C. T.

BIRDS.

MANAGEMENT OF CAGE BIRDS.

The Starling (Sturnus vulgaris).—This bird makes a most interesting feathered pet, its powers of imitation being only equalled by its docile and affectionate disposition, and although its natural song is not at all unmelodious it readily learns, when young, to whistle a tune and articulate words, being a born mimic. In its wild state the Starling is one of the most useful of our native birds, and a great destroyer of all kinds of insect pests, the grubs of the cockchafer and crane-fly being consumed by it in immense quantities during the breeding season. Its general nesting places are hollow trees, the roofs of old buildings, and holes in rocks. The eggs are of a pale greenish-blue colour, and about 1¼ inches long. The young of this species are easily reared by hand if fed upon bread and milk, raw meat minced fine, ants eggs, and small worms, and when they are able to feed themselves they may have Barley-meal moistened with milk or water, and bits of fresh meat, raw or cooked. They require a large cage and a liberal supply of water for bathing Their education must begin early, before they have acquired the notes of other birds, which they will soon do. The words, tunes, or domestic sounds that it is wished they should learn must be repeated continually to them day after day till the birds have mastered them, while every attempt to imitate should be rewarded by a dainty morsel of food. A bird learns more readily in a quiet and somewhat darkened room, where the attention is not taken by exciting surroundings. The old-fashioned plan of splitting the tongue of a bird to make it talk has long since been proved to be as useless as it is cruel. The plumage of the male Starling is very beautiful, and glistens in the sunshine like burnished steel, while that of the female has fewer metallic reflections, and is speckled with white.—S. S. G.

Canary with swollen foot (*F. G. N.*).—It would be advisable to dress the legs and feet of your bird with some cooling application, such as vaseline or zinc ointment, after washing them with soap and warm water. The perches should be covered with some soft material for a time or entirely removed from the cage, the floor of which might be covered with flannel. Cooling diet should be given, with a liberal supply of green food, such as Watercress, Dandelion, and Lettuce, and means must be taken to prevent the bird pecking at the inflamed part. Guard against, as much as possible, the feet of the bird coming in contact with any irritating substance. You will find a few doses of Parrish's Chemical Food do much in improving the general health of your bird, putting ten drops in each ounce of water.

WINDOW BOX COLLECTION contains 24 Lobelias, 6 Marguerites, 6 Geraniums, 6 Fuchsias, 3 Tradescantias, 3 Heliotrope, and 3 Ivy; carriage free, 3s.—C. SHILLING, Nurseryman, Winchfield, Hants.

5/9 **200 Bedding and Border Plants.** **5/9**
Shilling's Collection contains 200 strong plants, including Geraniums, Fuchsias, Calceolarias, Verbenas, Lobelia, Edging Plants, and Hardy Plants for the Border. Unequalled value. Order at once. Carefully packed and carriage paid for 5s. 9d. Half quantity, 3s. 6d.—C. SHILLING, Nurseryman, Winchfield, Hants.

3/6 **Shilling's Popular Collection of Greenhouse Plants** **3/6**
contains 1 Begonia, 1 Coleus, 1 Chrysanthemum, 1 Fuchsia, 1 Canna, 1 Heliotrope, 1 Fern, 1 Geranium, 1 Pelargonium, 1 Double Petunia, 1 Cyclamen, 1 Primula, 1 Smilax, 1 Grevillea, 1 Aralia, 1 Tuberose, 1 Amaryllis, 1 Arum, 1 Genista, 1 Tradescantia, 1 Isolepis, 1 Marguerite, 1 Palm, and 1 Carnation. The 24 choice plants, carefully packed and carriage paid, 3s. 6d.—C. SHILLING, Nurseryman, Winchfield, Hants.

6 ASSORTED PLANTS for Table and Room Decoration: Palms, Grevilleas, Aralias, &c., and 6 ornamental Japanese pots to grow them in, for 3s. 9d., carriage paid.—C. SHILLING, Nurseryman, Winchfield Hants

CHRYSANTHEMUMS.—All the best varieties selected for quality of bloom. A dozen strong plants in 12 beautiful kinds, named, for 1s. 9d.; 25 for 3s. 6d., carriage free. TOMATO PLANTS, strong, from single pots best kinds, 1s. 3d dozen, free.—C. SHILLING, Nurseryman, Winchfield, Hants.

OUTDOOR CUCUMBER.—The best kind in cultivation is the Incomparable Ridge, which produces in the open ground abundance of fruit from 18 to 22 inches in length. A trial solicited. Twenty-four seeds, 7d., post free; or 6 strong plants, 1s. 3d., free.—C. SHILLING, Seedsman, Winchfield, Hants.

HARDY CLIMBERS.—1 Rose, 1 Clematis, 1 Virginian Creeper, 1 Ivy, 1 Honeysuckle, 1 Jasmine, and 1 Pyrus japonica. All fine strong plants. The 7 plants carefully packed and carriage paid for 2s.—C. SHILLING, Nurseryman, Winchfield, Hants.

OUTDOOR KING TOMATO.—The best variety that can be grown in the open air, of very hardy constitution, and remarkably prolific bearer. Strong transplanted plants, 1s. 6d. per dozen. Carefully packed and carriage paid.—C. SHILLING, Nurseryman, Winchfield, Hants.

VARIOUS PLANTS.—Japanese Climbing Cucumbers, 6, 1s. 6d. Little Heath Melon, 6 for 1s. 6d. Hardy Climbing Melon, 4 for 1s. 3d. Golden Cucumber, 6 for 1s. 6d. Giant of Arnstadt Cucumber, grow white fruit, 4 for 1s. 3d. Vegetable Marrow-plants, 6 for 1s. 3d. Carefully packed and carriage paid.—C. SHILLING, Nurseryman, Winchfield, Hants.

BARGAINS.

1/3 **EACH LOT. Carefully packed and Carriage Paid.**
10 Calceolarias, 50 Lobelia Blue, 12 Cactus Dahlias, 12 Double Dahlias, 12 Geraniums, mixed, 12 Fuchsias, 3 Passion-flowers, 10 Cyclamen, 20 Stachys lanata, 12 Harpalium, 3 Pyrethrum, new French, 6 Lavender, 6 Rosemary, 6 Golden Thyme, 6 Ferns, 100 Lyon Leeks, 250 Celery, 12 Cerastium, 12 Tuberose, 12 Gladiolus, 4 Telegraph Cucumber, 10 Globe Artichokes, 6 Aralia Sieboldi, 6 Amaryllis, 20 Montbretias, 12 Tigridias, 12 Perennial Lupins, 20 Hieracium, 4 Grevilleas, 4 Cyperus, 12 German Iris, 12 Ageratum, 12 Heliotrope, 50 Anemones, 50 Ranunculus, 12 Perennial Asters, 2 Caladiums, 6 Begonias, 50 Golden Feather, 5 Honeysuckles, 5 Virginian Creepers, 5 Jasmine, 5 Clematis, 5 Ivies. Any 5 lots for 5s. 9d.; 10 lots for 11s., carriage paid. Packed in damp Moss. Safe arrival guaranteed.—C. SHILLING, Nurseryman, Winchfield, Hants.

VIOLAS.—Countess of Hopetoun, the best white bedder; Lottie, the best blue bedder, 1s. 3d. doz.; 100 in 20 grand sorts, 7s 6d., all post free.—CRAMB, Dunblane.

CAULIFLOWER—CAULIFLOWER.—Early London, Walcheren, Autumn Giant, 30, 1s 3d.; 60, 2s.; 120, 3s. 6d., post free. B. Sprouts same price.—CRAMB, Dunblane.

DAHLIAS. — Cactus: Gloriosa, Penzance, Pearl. Pompons: Iona, Madge, Bacchus. Show: Cherub, Duchess of York, etc. Doz. kinds, any section, 3s. 6d., strong plants, free.—J. HESFORD, 46, Roberts-st. Patricroft, Lancs.

A CHEAP SALE of new 1896 Chrysanthemums.—Mrs. H. Weeks, Mrs. C. Blick, Mrs. H. Long, Arona, Edith Tabor, Pride of Exmouth, Lady Byron, Lago Maggiore, Miss Mary Godfrey, Gen. Roberts, C. W. Richardson, E. Salisbury, Lady E. Smith, Mrs. H. Kloss, Exmouth Yellow, 2s. 6d. doz., free.—MAGGS, Whitchurch, Cardiff.

GARDENING ILLUSTRATED.

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TREES AND SHRUBS.

EFFECTIVE BEDS OF SHRUBS IN SPRING AND SUMMER.—II.

Is there any shrub that will grow in England which bears such huge and beautiful flowers as the Pæonia arborea (Tree Pæony)? Although the plants of two and three years old sent out by the nurseries seem small when they arrive, many of them produce one or two flowers the first season, and when the immense size of the flowers is taken into consideration, even a few of them make a great show of colour. Slowly but surely I find they grow each year, and with a little patience fine bushes are the result. Athlete, with gigantic flowers of a lovely lilac shade, is one which I know from experience is hardy here in Cheshire, and so is Louise Mouchelet, which bears equally large blossoms of a beautiful pale pink. Mme. de Vatry is also a strong-growing kind, and has beautiful pink flowers. Rinzi, a violet-mauve, is also one which does well here. Lactea and Bijou de Clensau, both white, and bearing magnificent blossoms, do not seem to grow as quickly as the others in my garden, but they evidently mean to live and do well in time, as they have survived several hard winters. These I should underplant with Chionodoxa Luciliæ or C. gigantea, the latter by far the largest and most striking, but both of them unsurpassed by any other dwarf spring flower. In colour they are a deep Nemophila blue, with a pure white centre. For an immediate effect the bulbs ought to be planted about 1½ inches apart and about the same depth under the surface of the ground. These will flower before the large leaves of the Pæonies appear, and I select them because they are so dwarf that they will in no way interfere with the Pæonies, even when the latter are only small plants. The leaves of the Tree Pæony, unlike those of the Pæony Moutan (Herbaceous Pæony), remain green until the autumn, and, therefore, I do not advise anything excepting the Chionodoxas to be planted in the same bed. The Herbaceous Pæonies are best with some autumn-flowering plants as well as spring bulbs planted with them, because they do not present a tidy appearance during the latter part of the summer, when they are dying down, and so need some plant grown between them which will hide them in the autumn and take their place; but the Tree Pæonies would be injured by this treatment, as they never die down, only lose their leaves in the autumn like any other deciduous shrub, and they certainly are worthy of a bed to themselves. There is this difference also (so far as my experience goes) between the Tree and Herbaceous Pæonies: the latter revel in a moist situation and can hardly be too liberally treated with farmyard-manure, and the Tree Pæonies not only like but need a warm, sunny spot, and cannot endure stagnant moisture at their roots. A much lighter soil suits them than the Herbaceous Pæonies, and they do not like so much manure added to it as the other Pæonies do. On the other hand, they must not be starved for want of it, of course.

If there is one Rose which more than another is adapted for massing by itself in a bed, it is Jeanne Dickson. With me not one of them produces its flowers more freely, grows in a more satisfactory manner, or has more attractive flowers than this. A whole bed of Jeanne Dickson would be lovely, and I am sure everyone who saw it would say so. If I had a bed of it (which I am sure I should do if I had not every corner of my garden full already), I should underplant it with Primula denticulata. These planted all over the bed at about 9 inches apart would make the bed a sight worth seeing in the spring, and these would flower year after year. The Roses should be planted about 4 feet apart, as Jeanne Dickson is a strong-growing Rose, and the Primroses ought not to be planted nearer the Rose-stems than 6 inches, thus just where the Roses are there would be a little gap, but at a short distance it would hardly be perceptible, and near at hand it would be seen why it was there. This bed would need a mulching of rotten manure every season, and a little leaf-mould sprinkled over the crown of the Primroses before putting it on, so as to prevent its coming in direct contact with them. A little fine soil ought to be sifted over the mulching to hide it, as in the other beds.

Then a bed of Weigelas ought not to be forgotten. Many shades of pinks and crimsons could be mingled together in it. An undergrowth of Crocus would be charming in the spring, and if the bed was mine, I should plant Clematis rather thickly in it also, and let them twine themselves amongst the Weigelas, and form a tangled mass of violet in the autumn over the whole bed. I have had a fair amount of experience with the various kinds of Clematises, and should strongly recommend Alexandra, magnifica, Velutina purpurea, Jackmani, Jackmani alba, and Tunbridgensis. They all belong to the Jackmani type, and flower from July to October. They are the hardiest and most profuse-blooming Clematises I know. Being of one type, too, they all need one treatment (cutting back to within about 9 inches of the soil in November, and being liberally treated with manure). If the bed was made up of rich leaf-mould, soil, manure, and some old mortar-rubbish to begin with, and then treated to a slight annual top-dressing every autumn, it would be gay with flowers for half the year.

The double white-flowered Chinese Plum (Prunus sinensis alba fl.-pl.) and P. sinensis rubra fl.-pl. are two of the most lovely spring shrubs we have, and yet they are not very often seen. I saw a bed of them last year, and was charmed with the beauty of it. I have just made a large round bed, and had it planted with them about 2½ feet apart. Like the Peaches, the Plums perfectly smother the branches which bear them with their star-shaped tiny blossoms. A carpet of White Grape Hyacinths (Muscari Botryoides album) would be very suitable for this bed. Like the Plums, they are not so often seen as they deserve to be, though the Blue Grape Hyacinths are common.

A bed of Hydrangeas is lovely, as most of us know, and Hydrangea paniculata grandiflora is hardy nearly everywhere. Many of the others are hardy out-of-doors in the South of England, in Ireland, and any fairly favourable climate. Gentian acaulis (Gentianella), grown as a carpet under them, would make a lovely bed in spring, or White Arabis would be very pretty and more easily obtained. The disadvantage of evergreen carpets is that the bed cannot be mulched as in the case of an undergrowth of bulbs or deciduous plants. It would be even more injurious to the shrubs to keep replanting the evergreen carpet than to let the bed remain unmulched, because nothing is so fatal to shrubs or trees as to disturb the top soil over their roots, since it is the surface roots which are the most important to the well-being of the shrubs. Therefore, the carpet planted under shrubs must be left year after year undisturbed, and that is why I have not mentioned many other spring-flowering plants, such as Primroses, Double Daisies, Auriculas, Forget-me-nots, etc., which are more easily obtained in the first instance (and therefore have also the disadvantage of being more common), but which need constantly renewing and regulating.

A great many people have asked me how the ground in which I plant things so thickly can stand the tax I put on it without becoming so impoverished that the plants fail to be satisfactory after a year or two. All I can say is this, that I have tried a good heavy soil, naturally moist and rich, and a much poorer, more sandy soil, naturally dry, and that, treated and planted as I have just described, the ground in which I have planted my things always has stood the tax I have put upon it, and that I have never found any of my plants to be the worse for it.

MRS. ROBERT JOCELYN.

Fir-trees dying (*W. H. Deakin*).—Evidently the result of old age, especially as the bottom branches have been dying for several years. The trees may, however, live a long time yet, but now that all the lower branches have disappeared a great deal of their beauty has vanished, and they will become a greater eyesore yearly. We should recommend you to grub them up. The specimen sent is Biota orientalis.

Weigela sinensis variegata.—After the welcome rains the variegated foliage of this Weigela has a fresh and pretty appearance, and though the blossoms cannot compare with those of the older green-leaved form, they are freely produced, as in that well-known and useful flowering shrub. The flowers are just opening, nearly every point being studded with them, the the colour being a pale rosy-pink. It makes a capital subject for planting on the lawn in an open position, the branches keeping well down on the Grass. No clipping or training is needed, the natural habit of the plant being very graceful, but it must have plenty of room for its full development.

Walnut-tree dripping (*Mrs. W. Finch*).—The dripping you complain of is quite natural, and will not kill the tree. When branches are lopped off sap generally exudes, some trees losing more than others. Cover the cuts with tar or a mixture of cow-dung and clay.

INDOOR PLANTS.

NEGLECTED PLANTS.

BEGONIA FUCHSIOIDES.

THIS fine old plant, now seldom met with, is one of the best and most free-flowering of the Begonias, whether grown in pots or planted out in a warm greenhouse or conservatory border, where it will cover trellises or pillars. It will succeed in almost any position, provided it is kept fairly warm and can get sufficient sunshine to ripen the young shoots, and thus secure plenty of blossoms. During the winter months, if in health, this plant is seldom out of flower, and, indeed, it produces blossoms more or less freely the whole year round. Cuttings of it may be rooted at any time of the year, but early in spring is the best time. They may either be placed singly in small pots, or several together may be put into larger ones. The soil for the cuttings should be finely sifted, and may consist of loam, leaf-mould, and a little peat, adding plenty of sharp silver-sand to keep the whole compost porous. The pots should be well drained, and then be filled loosely with the prepared soil; put in the cuttings, making them firm, and when completed water with a fine-rosed watering-pot. Place the pots of cuttings in a house or pit wherein there is a temperature of 60 degs. to 65 degs. Thus treated the cuttings will root in a few days. Later in the summer they will root in a cold-pit or frame, and make good plants for flowering early the following spring. Pinch off the tops of the young shoots several times during their growth to induce them to become bushy. Cuttings rooted early in small pots should be potted onwards as soon as they are ready for a shift, and in the case of those which have been rooted several together in one pot, they will require to be potted off separately. When well rooted a soil which suits them well is a mixture of equal parts of good turfy loam and peat, broken up into pieces about the size of Walnuts, some sifted leaf-mould, and plenty of sharp silver-sand to keep the whole compost open. The roots of this plant are very impatient as regards wet or sour soil. They will need a shift as often as they fill their pots with roots, until they are transferred to those in which they are intended to flower. Good sizes for general purposes are 6-inch and 8-inch pots. The flowers of this Begonia withstand the effect of gas better than those of other plants which I have used for room decoration. When well cared for in summer, the plants will begin to bloom early in autumn. Where boxes are used for plants on trellises they should be made 18 inches deep and 2 feet wide; the length must depend upon the space at disposal. If only one plant is to be put into each box, 3 feet will be a good length, and will be found to be large enough for a number of years. Holes must be made in the bottom of the boxes in order to ensure efficient drainage. Place 3 inches or 4 inches of broken crocks or bricks in the bottom, and cover them over with some thin sods of loam partly rotten, or pieces of rough peat, which are equally good. The compost for boxes should consist of pieces of old loamy turf, rather lumpy, peat, also in lumps, and a portion of sifted leaf-mould. The turf and peat may be used in equal portions, adding thereto a good quantity of sharp silver-sand. Plants one or two years old should be planted if at hand, as they soon cover the trellis, but if not, young plants bought from a nursery will answer. The tops should be pinched out several times the first year after they are planted, to induce the plants to produce plenty of strong side shoots. Where borders can be used they are better than boxes, which are often objected to as being unsightly in a well-kept conservatory. In making the border it should be 2½ feet deep and 2 feet wide. In the bottom should first be placed some broken bricks 12 inches deep and these should be covered over with some rough material, and then the other will be added. Use the same compost as that advised for boxes. Only a little rotten manure may be used, and less sand. If well cared for the plants soon reach a good height, and are grand objects when in flower. B. H.

Ornithogalum arabicum.—This is a most useful pot plant for conservatory decoration and when grown in quantity its spikes of bloom may be had for a very lengthened period. Two other fine species of this genus are O. aureum, very rich golden, and O. lacteum.

LACHENALIAS.

IT is difficult to understand why these bulbous plants should be found in so very few gardens. Their comparative hardiness, for example, should at once make them valuable to amateurs, and especially so to those who have but a limited amount of heat at command. A close, stuffy, or heated structure only results in weakly growth, and generally inferior results on the whole. The temperature for these Lachenalias never need be above 40 degs. during the winter; indeed, I would not hesitate to grow many of them in a cold frame, freely ventilated in damp weather, and protected by mats or the like during frost. Another point of equal importance as their hardiness is the length of time they remain in flower. Many kinds in the cool temperature I have referred to will remain in perfection for fully six weeks; some even longer than this after the flowers are fully developed and they have attained their colours. Other points which are worth noting are their simple requirements

Lachenalia Nelsoni.

and the freedom with which they reproduce themselves by means of offsets. They may be grown in pots, pans, or even hanging-baskets, but unless these last are suspended very low, not a tithe of the beauty of the plants is seen; and while we have so many really valuable subjects especially suited to hanging overhead, I for one would very much prefer to see these pleasing Lachenalias more suitably and certainly more naturally planted in masses in pans where they may be seen to advantage, and prove a source of enjoyment for some considerable time.

Their cultivation is by no means difficult. They succeed well in any good ordinary soil, but preferably in peat and loam in equal parts, with a little decayed manure added, the whole made rather sandy. In planting them they should not be covered with more than an inch of soil, and unless the soil is very dry, it will not be necessary to water at all for a week or so. The best time for planting them is September or October, though in this respect they are not very particular; in fact, I have frequently transplanted them in full leaf, and could never discern the slightest difference from so doing. I would not hesitate to plant these if sound dry bulbs were procurable at any time up to the end of December, the only point of difference being that a good succession of their flowers is thus obtained, and this is a decided advantage. Always provide abundant drainage, and when in May they show signs of going to rest lessen the water supply gradually, and keep quite dry during June, July, and August. A moist, but not wet, soil suits them best while growing. At the end of August or thereabouts it is best to overhaul them annually, sorting the large bulbs from the small, putting the latter in boxes of good soil for growing on, and planting the flowering bulbs into pots and pans for present use. There are a good many species and varieties with synonyms in cultivation, from among which the following are the best—

L. PENDULA.—A bold-growing, handsome species, having purple, red, and yellow flowers gracefully arranged on a stout stem. This is without doubt the showiest of the family, and easily distinguished by its flowers and broad dark green foliage.

L. TRICOLOR.—A very free-flowering and rapidly increasing species; the flowers are yellow, and tipped with green and red, while the foliage is distinctly glaucous and freely spotted with dull purple spots.

L. NELSONI is a most lovely hybrid, with rich, clear golden-yellow flowers. This delightful kind is one of the best and most continuous bloomers. (See illustration.)

L. AUREA, which is synonymous with L. tricolor lutea, has also flowers of a golden hue; these, however, are not superior either in colour or their numbers, but its foliage is very distinct.

L. LUTEOLA is another kind with yellow self-coloured flowers borne on spikes 9 inches or 10 inches high, the foliage inclining to lanceolate, slightly glaucous, and freely covered with reddish purple spots.

L. FRAGRANS produces handsome spikes of reddish flowers.

Others also might be named, but none of them of equal merit to the above. The usual height these plants attain to is from 8 inches to 10 inches, and they bear twenty or more of their pendent tubular-shaped blossoms. By successive planting Lachenalias may be had in flower for three or four months. J.

Chinese Primulas after flowering.—Mrs. S. would like to know if Primulas (late plants) bloom well another year? If so, what treatment they require, and when repotted?

*** So many wish to keep some special favourite of these charming spring bloomers that a fuller reply than can be accorded in our correspondence columns seems necessary. Our querist does not say if her plants are double or single-flowered varieties, nor which of the several classes into which Primulas are divided. As a rule, it is advisable to throw away plants of the singles (Primula sinensis or Chinese Primulas) and raise a fresh lot from seed. This method of increase we have frequently treated upon, and shall probably be doing so again in due season. But, where a special favourite is wanted a second year, pinch off all flower-spikes and decaying leaves, turn the plant out of pot, remove about half of the soil with as little injury to the roots as possible, and repot into a compost of leaf-soil and turfy loam, adding a little broken charcoal and coarse sand. Do not use so large a pot as before, one half the size will sometimes suffice. Stand in a cool-pit or frame, and if you can give them the partial shade and coolness afforded by a wall or hedge at midday, so much the better. If you are to keep clear of red-spider they must be cool and moist without being wet. Keep them in these small pots until September, then repot into the same compost, with the addition of a little manure from a spent hot-bed. A month or so in a pit or frame with a south aspect will now be better than the northern, removing them to the cool greenhouse and giving ordinary treatment from November onwards. Double Primulas are increased from cuttings, and now is not a bad time to commence, although July and August will also be suitable months. Pick off the older and lower leaves carefully, then place a mixture of turfy loam, leaf-soil, and sand in equal parts

around the base and well into the crown of the plant. Stand upon a shelf in the greenhouse, and be careful not to water the new compost too freely. Many of the new growths will root, and may be taken off in about six weeks' time. Pot into tiny pots of the same compost, less quite so much sand, and as time goes on afford a richer soil. These require a shelf in a cool-house during summer and autumn, or else stood upon pieces of brick or other pots inverted in a cool-pit or frame. Cuttings may also be taken direct from the plant, in which case it is best to have a slight portion of the older wood attached. Trim off the two lower leaves and insert firmly, but not deeply, in a very sandy compost. A slight bottom-heat is necessary for these, and you will need even more than ordinary care to avoid damping off.

Azolla caroliniana.—A quantity of this indoor floating plant is grown here, and during the winter stray pieces have, in watering, been deposited on the top of the soil of other plants in pots. What I wish to mention is the way in which the plant, like many others, can adapt itself to greatly changed conditions. The pieces which have found their way to soil of pot plants are growing in a most pleasing manner, surfacing pots of Oxalis and Orchids, and one could hardly have a prettier object where such surface plants are desired. On similar lines I have flowered the Aponogeton distachyon in pots of ordinary soil stood on a damp floor.—J.

Erica reflexa.—This, one of the Cape Heaths, flowers at much the same time as the different forms of E. ventricosa, and, being so distinct from any of them, it forms a pleasing variety thereto. E reflexa is a very uncommon but, at the same time, old species, as it was introduced into this country in 1820. It forms a neat, compact, bushy-growing plant, laden just now with a great profusion of small urn-shaped white blossoms, which are somewhat glutinous. Besides this, E. ventricosa also makes a goodly show. There are signs of a revival in the culture of the better kinds of greenhouse Heaths, which possess many desirable features.

SIEBOLD'S PRIMROSE.

Of all the various members of the great Primula or Primrose family which the diverse climates of the earth furnish, and which have been brought to Great Britain from time to time by plant-collectors, none are better suited for either pot or outdoor culture than is Primula Sieboldi. This is a native of Japan and is quite hardy. It is of the herbaceous or resting order, for the foliage, which is green and vigorous, and quite handsome during the spring and summer, dies down in the autumn, leaving in the soil a quantity of small buried crowns that are found at the extremities of creeping underground rhizome roots, and these in due course in the early spring develop foliage and, a little later, flowers. Those of the type are borne in moderate-sized clusters on erect stems, some 6 inches to 8 inches in height. The pips are round, a little cupped, are pale red in colour, and of good substance. Whether forming neat clusters in pots or in large clumps out-of-doors, the flowers are very attractive, and seem really deeper in hue than this description infers. Since the introduction of the species into this country it has been largely manipulated by florists, and many new varieties produced. Oddly enough, although the prevailing hue of the type flowers is red, the dominant colour of the progeny has been bluish or lavender, for these hues have in seedlings been very abundant. Still, there have been raised some beautiful pure whites, and deeper reds than are the flowers of the parent form. Also, too, whilst the parent pips are smooth and rounded on the edges, very many of the seedlings have very pretty cut or laciniated edgings, and these have, in many directions, obtained the greatest admiration. All, however, no matter of what form or colour, are very beautiful, and as the customary period of blooming is in a greenhouse in March and April, and outdoors in May, these hardy Primulas are all the more worthy of cultivation. To the amateur grower the plants are specially useful, because they are best without heat. Practically they require, if under glass, quite cool treatment. If planted outdoors, there to remain as clumps for several years, they do best in an elevated position, where rain passes off freely. A soil that is about half loam and half peat, with just a little old decayed manure and sharp sand incorporated, suits admirably. Very similar compost also best suits them for pot-culture. It is specially in this way they are so useful, because when well grown and in good bloom, the plants are truly charming objects. The best course of treatment is as follows: After the foliage has died down in the summer, the pots should be stood in a cold-frame, where, kept cool, occasionally watered, but only moderately, and out of hot sunshine or drenching rains, the roots really rest and ripen the crowns. During the month of October repotting may take place. To this end some 5-inch and 6-inch pots—quite clean—should be furnished, and properly supplied with drainage. On this should be laid some of the rougher or more turfy portions of the soil, filling up the pots with the finer compost to within an inch of the tops and gently pressing it down. Then the clumps of roots in the old pots should be turned out and broken up, picking out all portions having leaf-crowns attached, and sorting them. About ten of the strongest should be laid evenly over the soil in each 6-inch pot, as if previously well grown each crown should produce at least one truss of bloom. Strew enough soil over the crowns to properly cover them, press gently down and finish off neatly, then stand outside, and all being completed, water, then stand in a frame again. In the potting the weaker crowns should be placed in the same way into the 5-inch pots and be so treated. These may not bloom the following spring, but they will during the year make good growth, and the ensuing autumn will need to be shifted, without breaking up, into 6-inch pots, in which they will bloom finely in the spring. Once a good stock of plants is obtained this form of treatment in repotting may go on yearly. If the plants be stood in a cool greenhouse, or but a few at a time, in January, growth will the sooner commence, and bloom will quickly follow. No support is needed where an ample supply of light and air is permitted.

After the flowers are over the pots may be stood in a somewhat shady place outdoors to complete their summer growth. Outdoor or border clumps may be lifted and replanted every three or four years. Besides P. Sieboldi other good varieties are Snowflake, Queen of Whites, Rosy Morn, Pink Beauty, Charming, Lavender Queen, purpurea, Distinction, Bruce Findlay, laciniata, and Crimson Gem; these are but a few of the many varieties in commerce, and all, or a selection of the best, can be purchased as single plants in small pots cheaply. A. Dean.

Primula Sieboldi.

579.—**Peppermint for distillation** is very extensively grown at Mitcham, near London, as well as in other directions. What is called the white variety, although the plants are dark, but have white flowers, is esteemed the best. Peppermint likes—indeed, needs—a deep, well-manured soil of a blackish or boggy nature, but not of a wet character. Planting is done in the spring after several inches of growth have been made, two or three tops with small roots attached being dibbled in firmly into fresh well-prepared ground. The young plants are from 14 inches to 15 inches apart to admit of free cleaning with hoes. The beds are usually allowed to remain several years, but so soon as evidences of exhaustion are evident, both in growth and in oil or perfume production after distillation, they are broken up and new ones are made. Really a new breadth should be put down every year. On large farms, sometimes as much as 40 acres may be under Peppermint. The tops are cut in the autumn when in full bloom, as the essential oil is then most plentiful. The tops are laid in bundles on coarse cloths or mats, then when partially dry are carted into the still-house and there utilised. The Mitcham oil of Peppermint has the highest reputation. Peppermint is so absorbent from the soil of some important element, that, after carrying a crop for several years, the soil must have a rest from it, carrying other crops for fully fifteen years. Large growers are often much troubled to get land suitable for their purpose for the reason stated.—A. D.

FRUIT.

THINNING GRAPES.

This operation is by some growers performed all at once and by others at two different periods—that is to say, the bunches are partially thinned out as soon as the berries are the size of small shot, a secondary and final touch being given, say, in a week's time. In the case of early and midseason Hamburghs, Foster's Seedling, and similar Grapes, I think one thinning is sufficient, as it is no drawback, but rather the reverse, especially where the Grapes are for sale and weight is wanted, if the berries do wedge each other slightly, as with a dry, airy atmosphere and a gentle warmth in the hot-water pipes damping off, and consequently gaps in the bunches, rarely occur. With later varieties, however, intended for hanging well into the new year the case is totally different, and a second thinning is, I think, advantageous, inasmuch as it allows of a more correct judgment being formed of the exact space to allow between the berries to admit of a free current of air passing through them. No doubt a knowledge of the size of the various varieties and of the individual berries of the sort greatly assists the thinner. I am not in favour of suspending the shoulders as a rule, but it is almost compulsory in the case of large bunches. I have sometimes practised it and allowed them to remain so till the second swelling was completed and colouring commencing, when if there was any cavity between the shoulders and the main body of the bunch, I have severed the ligatures and gently lowered the shoulders without disfiguring the bloom. Sheuldering is often carried to such an extreme that a bullet might easily be fired through the bunch without touching a berry. The tops of the shoulders of bunches intended for exhibition should be thinned but little, as the lower berries when swelling will push these upwards, and thus increase the depth and solidity of the bunches. J.

Fire-heat for Vines in summer.—Grapes can be grown in many ways and in all sorts of structures. If only summer and autumn Grapes are wanted more kinds can be grown that do not need so much heat, such as Black Hamburgh and Royal Muscadine. I am aware that good coloured Black Hamburghs can be had in a cold-house (and in these structures they are often the best in colour), but they are quite different in flavour to those grown in warm-houses. If really good Hamburgh Grapes are desired that will keep till Christmas, then they should have fire-heat during the growing period. Last year we had good Hamburghs until the new year grown in this way. Such kinds as Lady Downes, Alicante, etc., cannot be profitably grown without fire-heat during the summer, and by so doing a supply of Grapes may be had when they are the most valuable, and this by amateurs. In structures where there is no fire-heat then every effort should be made to bottle up all the sun-heat, and avoid damping the structure in the afternoon.—J. Crook.

Barren Vines (*W. H. S.*).—We thank you for your clear note; it helps greatly in giving a reply. We fear your only remedy is patience. You cannot make good in a few months the neglect of years. Doubtless, the last occupier took heavy crops, and then last season the Vine got no attention. Last October the season was too late to effect a remedy, with the result the Vine must this year make growth. It is unable to produce fruit, and all your energies should be directed to mature that growth to bring a crop next season. Though you gave the roots new soil you must bear in mind that, owing to the Vines being at rest, it could not benefit them until this spring, and even then later than many think, as the top-growth of the Vine is greatly in excess of root-growth. You say your Vines are now growing freely. This is satisfactory, as they are reaping the advantages of your work last October. Treat them equally well as if bearing a crop, and keep foliage clean. Get wood as well matured as possible. We would stop growths when they get thick, allowing main lateral to run freely. They will then form good bunches. You see the fruit for next year is built up thus.

631. — **Strawberry-growing on a moor.**—To prepare light heath land for Strawberries, it is best to first cut off and burn in heaps all the Heather, Gorse, and Grass. Then the residue ash should be evenly spread all over the surface, and ploughing be done, the surface-plough going 6 inches at least, and a subsoiler following, breaking up another few inches. Deep culture would be at the first unwise. If practicable, a dressing of animal manure should be carted on and ploughed in on the cross. Failing that, a dressing of superphosphate and kainit, at the rate of 6 cwt. per acre, should be given, and then a crop of strong-growing Potatoes planted, ploughing them in on the cross. After getting off the Potatoes sow Tares and Rye; plough that in in April, then manure, and plant with the Strawberries so soon as ready.—A. D.

DOUBLE PÆONIES AS CUT FLOWERS.

Few flowers are more handsome when boldly arranged than the Pæonies, as our illustration shows. The effect is richer and more striking than any arrangement of mixed flowers would be. It is necessary for those who have much indoor flower decoration to carry out to realise the importance of getting a flower in its proper season and making the best use of it, as in the case of the Pæonies represented in the illustration. Nothing is required in the way of foliage except that belonging to the plant itself.

Double Pæonies in a vase. From a photograph by Mr. J. C. Smith, Nandana, Penrith.

481. — **Pot-pourri.** — Ingredients: Rose petals (dried or not), Lavender, a handful of Rosemary, a handful of Bay-leaves, Oak Geranium, and Lemon Verbena-leaves; Cloves 2 oz., Rose-powder 1 oz, Patchouli-leaves 1 oz., and Orris-root 1 oz. (the two latter to come from the chemist), the peel of a Seville Orange. Mix all these together and put a layer of the mixture at the bottom of the jar, sprinkle over them a handful of bay salt, and fill up the jar in layers in this way.—Taba.

Azalea Roi d'Hollande.—The garden varieties of Indian Azaleas are so numerous that a rigid selection is in most cases necessary, and if this is done from a catalogue it by no means follows in all cases that the plants will be as distinct from one another as the description would lead one to expect. The variety Roi d'Hollande is a very old one, and I have seen it in many instances this spring in particularly fine condition. It has bright orange-red flowers. It is also of good habit and grows freely. The flowers are produced in great profusion and it can be readily forced.—H.

Simple shadings.—I noticed the other day in a nursery a large number of lath frames made to fit the glass lights which cover plant frames. These are clean, easily shifted, and if well made at the first are with ordinary care very enduring. They have strips on either side, and at the ends 2 inches by 1 inch for foundation, the laths being nailed across, leaving intervals of about ½ inch between them. By their aid, strong sunlight was amply broken, and where laid over frames after the lights had been removed, admitted plenty of air. Many uses might be found for such simple shadings; as for instance, if fixed erect out in the open, in a line east to west, they would furnish desirable shade to seeds, cuttings, and numerous other things during very hot weather. They do capitally also to lay over seed-beds for a brief time, to shade and protect from birds.—A. D.

Daphne cneorum is one of the most charming of all rock shrubs, of a close tufted growth, and covered in spring with heads of pink or rose-coloured flowers. We have grown this very finely, too, in a bed of peaty soil as an edging to large clumps of Lilium auratum, and in a position shaded from hot sun by a large and stately Beech-tree. In this position, and again in company with Andromedas, the cushions of growth were each spring covered with pretty clusters of blossom.

GARDEN PESTS.

Destroying woodlice (*Woodlice*).—Toads and tame seagulls will destroy woodlice if they have the opportunity. They may be trapped by laying bricks or pieces of slate or board on the ground for a day or two without disturbing them, and the woodlice will creep under them. Only the other day in my garden I caught about a dozen under one brick. It is said that they may be poisoned by boiling small pieces of Turnips in water in which some arsenic has been placed.—G. S. S.

Grubs (*Amateur Gardener*).—The grubs you sent are the grubs of the daddy-long-legs (Tipula oleracea); they are among the most destructive pests we have in gardens, as they feed on the roots of most plants. It is almost useless to try and kill them by means of insecticides; but watering the plants very thoroughly with liquid-manure—such as guano, salt, or nitrate of soda—is very beneficial, as the manure is distasteful to the grubs and stimulates the growth of the plants. They may be trapped by burying small slices of Turnips, Carrots, or Potatoes near the plants which are attacked. Each bait should have a small wooden skewer stuck into it so that they may be more easily found. These traps should be examined every morning. They may also be kept by laying pieces of turf, slate, tile, board, etc., firmly on the ground. At night the grubs will crawl under such things, and may be found there in the morning.

War against caterpillars.—As many amateurs are now warring against the caterpillars among the Rose-leaves, may I describe a method I have found useful and speedy? I have a long, narrow-bladed spring forceps, discarded from surgical use, and this is inserted longitudinally well up between the folded leaf or leaves. Keep tightly closed till sufficiently far in to open all the leaf at once without tearing it. Then the pressure of fingers is gently relaxed, allowing the blades to open gradually, when the marauder will be seen lying at your mercy and the point of the forceps.—H. Shackleton, M.D., *Sydenham.*

Caterpillars on Gooseberries—simple remedy.—For nearly thirty years I have been quite free of caterpillars in two large plots of Gooseberries, which I ascribe to having a good bunch of Furze, when in flower, placed in the centre of each bush. Very few will believe in this simple remedy, but if any will try it for two or three years, they may find it effectual. I leave the bunches in the bushes until November, and some think that the spines prevent the butterflies being able to get to their usual place of depositing their eggs.—J. Thompson.

Seedling Sprouts (*B.*).—The seedlings are attacked by a fungus. Clear them off and burn them. I cannot tell what is eating your Sweet Peas without knowing something more about them. If you will send me some of the caterpillars that are attacking your Pear-trees I will tell you what they are and how you can best deal with them.—G. S. S.

Snails in garden (*J. T. Bird*).—The snails you find in your garden no doubt come from the hedges. You might lay Cabbage or Lettuce-leaves about to attract them, but I do not know of any wholesale trap. After a heavy shower of rain is the best time to look for them. If you cannot find anything attacking your Carrots, etc., during the day, examine them at night, and send me any insects you can find on them.—G. S. S.

Fuchsias diseased (*J. Lake*).—Your Fuchsias are attacked by a fungus, probably a species of Phyllosticta. I should spray the plants with "Bordeaux mixture" two or three times. To make the mixture, dissolve 3 lb. of sulphate of copper in 2 gallons of warm water, slake 2 lb. of fresh-burnt lime, make it up to a creamy consistency with water, strain, and mix with the copper solution, and add 20 gallons of water. Stir thoroughly, and keep all mixed; pick off any leaves which are so bad as to be no longer of any use to the plant, and burn them.—G. S. S.

Lilium candidum diseased (*S.*).—Your Lilium candidum is attacked by a fungus. Try spraying with "Bordeaux mixture," and see reply to "J. Lake" for quantity. I will try and find out what the fungus is.—G. S. S.

Ferns diseased (*J. Grimes*).—The insect attacking your Ferns is a weevil—the black Vine-weevil (Otiorrhynchus sulcatus). It is a most destructive pest, both as a beetle and as a grub. The latter lives on the roots of Ferns, Primulas, and many other plants. The beetles generally feed at night, and hide themselves carefully during the day. Small bundles of Moss or fine hay laid about make good places for them to hide in. These should be opened every morning. Search for the weevils at night.—G. S. S.

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ORCHIDS.

THE LONG-SPURRED ORCHID (ANGRÆCUM SESQUIPEDALE).

The Angræcum here figured is one of the most extraordinary plants in existence, the structure so remarkable that it has attracted the attention of all botanists. The specific name would seem to imply that the spur attained a length of a foot and a half, and although I have never seen a flower with a spur of that length, yet in good varieties the spur is nearly as long. The plant belongs to the distichous-leaved section of Orchids, the stem being erect or nearly so, covered by the base of the leaves, these being of a very distinct glaucous green and the habit is such that A. sesquipedale may easily be picked out from all other Orchids in existence, whether in or out of flower. The flower-spikes appear in the axils of the leaves, usually towards the top, and produce from one to about four blossoms on each, these, as hinted above, varying considerably in size. The colour throughout is a pure dead white, and the blossoms last a long time in good condition.

In its native home this Orchid is found growing on trees in hot, moist positions, but almost fully exposed to the sun. Such plants are said to be much freer flowering than others found in more shady places, but have the disadvantage of being without foliage on the greater part of the length of the stem. These are obviously far from attractive in appearance; therefore in cultivation a middle course has to be steered between the two extremes. Heat they must have summer and winter, and if they do not get it very little progress will be made. I have seen plants growing finely in a Cattleya-house, but it was at a place where the piping was more plentiful than anywhere else in the house and also in the sunniest part of it. A rather dry atmosphere is, I feel confident, of assistance rather than otherwise, though of course it would not be wise to go to extremes. The roots have a great affinity for wood, and will run to a great length should they happen to lay hold of the stage or any chance piece of this material. Not many people would care to make a miniature forest of their Orchid-houses and introduce trunks of trees for their roots to lay hold of, but were it practicable, I am sure this would make a splendid medium for the growth of this Orchid, the natural roughness of the bark holding just the amount of moisture that the roots relish, and, moreover, the latter would have the opportunity of pushing down towards the base where shade and moisture are abundant, the leaves at the same time being exposed to the influence of sun-heat and light. This is, however, for most of us a fanciful picture only, and we must make the most of convenience to hand.

The Long-spurred Orchid (Angræcum sesquipedale).

The usual method is to plant this Orchid in pots of living Sphagnum Moss, providing good drainage, and elevating the plant so as to prevent anything like accumulation of moisture about the base of the stems. I have found it rather a difficult subject to transplant, and would advise anyone who possesses well-established specimens not to disturb them more than is absolutely necessary. This applies in a greater or less degree to all of the distichous-leaved section, such as Vandas, Aërides, and Saccolabiums, but to this Angræcum especially, as the roots do not ramify so freely, but prefer running in straight lines up and down the inner surface of the pots.

There need be no hesitation, of course, about repotting a plant that really needs it, for with due care it will take no harm, but at the same time it is wise to do this as seldom as possible. If clinging closely to the side of the pot, no attempt should be made to forcibly remove the roots, but the pot should be carefully broken and all loose pieces taken away, those with roots attached being placed in the new pot. The size of the latter will depend more on the number of roots than the size of the plant, and it is better to give a fairly wide pot and drain it well than use a narrower one with a greater depth of compost. Every year a little of the surface Moss should be removed and fresh substituted, adding a little charcoal to this. Large supplies of water are needed while the plants are growing, the Sphagnum being always kept green.

Orchis.

Dendrobium Dearei.—The length of time that this fine species remains in flower is remarkable, and it is one of the handsomest of pure white Orchids. The blossoms are produced on bold full trusses from the upper part of the pseudo-bulbs, a large number appearing on each. While making its growth this plant delights in copious supplies of moisture at the root and in the atmosphere, a high temperature being also desirable. When the growth is complete it should be well ripened by removing the plants to a light sunny position in a cooler house, the water supply being lessened, but not entirely withheld.

Flowers in the Grass.—In the pleasure grounds here is a large mass of the Meadow Rockfoil (Saxifraga granulata), 30 feet long by 10 feet to 12 feet wide. The plants are growing beneath a Lime-tree. The Saxifrage is scattered over the surface, clustering right up to the bole of the tree, and coming up through the thin Grass. The flower-stems are from 10 inches to 12 inches in length. When I took charge of these gardens some eight years ago there was only a small patch of the Saxifrage. I make a point of not mowing until the foliage has ripened off, and by so doing the growth improves every year, and this favours the seeding. This useful plant is not fastidious as to soil or situation, as I have seen it do well in a dry open bed. Another common plant I saw a mass of early in the spring, growing beside the highway road in this neighbourhood, was the blue trailing Periwinkle. It had taken possession of a sunny bank, and had spread upwards 40 feet to 50 feet in one mass. As I saw it in full bloom, backed up and mixed with common Scolopendriums or Hart's-tongue Ferns, it made a charming picture.—John Crook.

Dodecatheon Jeffrayanum.—Perhaps of all the family this is the strongest and most robust, and plants of such a vigorous constitution only require to be left alone to produce a really good display. The species and varieties of this genus do well in peat, and shade and moisture, and sometimes in the drier parts of the bog garden. At the same time the fact cannot be too widely known that the above-named species thrives admirably in the open border; indeed, the finest plants of it we have ever seen had flower-stems 20 inches high. These were growing luxuriantly where the soil was heavy clay.

WALL GARDENING.

The best methods of wall gardening very often suggest themselves in places where old masonry or brickwork has long been left to Nature, and especially to the action of the wind and weather. It is difficult to visit any really old ruin, be it abbey, priory, church, or castle, without finding it more or less clothed with vegetation. At Rochester the wild Carnation of Normandy is quite at home, and on nearly all old castles the golden Wallflower is luxuriant, and very often, as on the great bastions at Conway, the red Valerian is also quite at home. The old walls at Oxford are noted for their vegetation, such as the Cheddar Pink, the Purple Toadflax, and many other pretty things. Snapdragons and all kinds of dwarf Pinks, Eschscholtzias, and many of the Campanulas are as happy on old damp walls as anywhere, and the same is true of the Indian Androsaces, such as A. lanuginosa and A. sarmentosa. I have had Ramondia pyrenaica strong and healthy on a shady wall for ten or twelve years, and Arenaria grandiflora forms fleecy carpets of its white flowers as it hangs from the stone pockets on the face of the brick walls. Erinus alpinus and the alpine Linaria nestle in the old mortar joints everywhere, and as so situated they often escape our hardest winters unscathed, while those in the borders are often killed off by frost and damp combined.

Wherever old walls already exist, one of the best ways of covering them with vegetation is to sow them with good fresh seeds. One of my methods is to sow the wall tops every year during a rainy period if possible. To this end I save or obtain seeds of Erinus, all kinds of Dianthus, Linaria, Antirrhinum, Trachelium, Wallflower, Draba, strong-growing Saxifrages of the rosette or encrusted section, and other suitable things. These seeds are all well mixed together in a basket or box of dry soil finely sifted, and then the whole mixture, seeds and soil together, are sown on the wall tops or in the made pockets wherever such exist. If the weather is dry, the whole surface is watered after sowing with a fine rose so as to settle the seed and soil well down into the cracks and crevices of the wall. Wherever retaining walls have to be made against sloping banks of earth, it is often easy to form them of rough stones and good loamy sods, and in some cases it is best to plant such walls as they are being made.

A wall garden of flowers.

In some cases walls may be specially constructed and made either hollow or pigeon-holed, or both, so as to afford root-hold when the interstices are filled with good soil. Or flat stones may be fixed to the existing faces of blank walls, so as to form chinks, pockets, and crannies, into which seeds may be sown or plants inserted, as the case may be. It is not difficult to fix stones to wall surfaces with large nails and a little cement. Two large nails are driven into the wall joints so as to support the stone temporarily in its position, and then the cement is used to fix it permanently in its place, after which the nails may be withdrawn if necessary.

One of the handsomest of all our wall plants is the pure white Campanula isophylla alba, hanging down in flowery masses, 2 feet or more, in front of a shady wall. All the dwarf Bellflowers, Ramondia, and small-growing Ferns are happiest on the damp and shady side of walls, but Erinus, Linaria, Dianthus, Onosma tauricum, Androsace lanuginosa, and various kinds of dwarf Cistus, and Helianthemum enjoy the sunny side best. Onosma, which often fails to grow satisfactorily on an ordinary rockery, and often gets killed by frost and damp at ground-level, does perfectly in a wall pocket, and flowers most profusely every year. The tops of large, broad walls and arches over gates or doorways may often be adapted for the growth of German Iris with very good effect, or the Flag Iris and Carnation may be planted together, by which a good evergreen effect is produced all the year round and two flowering periods are obtained. Very pretty effects may be also obtained by layering shoots and branches of the best flowering wall shrubs on to the tops of broad garden walls. Thus, where Wistaria, Forsythia, and various kinds of Ampelopsis, or Vitis, Ceanothus, or Passion-flowers overtop a broad wall, it is easy to bend down and layer some of their shoots under large sods and a heavy flat stone or two. In this way many a straight and stiff wall-top may be naturally diversified in outline and rendered far more beautiful in the garden landscape. But the methods of wall gardening may be varied at will, and will at once suggest themselves to those fond of flowers. I visited a town garden the other day which simply consists of a flagged and walled-in space of 30 feet by 15 feet. At first sight to an ordinary observer there seemed no chance of planting anything whatever, but the owner happened to be fond of flowers, and was determined to have them. In some places the walls were covered with Ampelopsis of different kinds planted in boxes and tubs in the corners, while the bare walls had been roughly shelved, and plants are grown in boxes of earth so as to hide both walls and shelves. There was a combination of Creeping Jenny (Lysimachia) and Campanula isophylla alba, and on the shady side of the little yard some of the rarer British Ferns were very fresh and beautiful. Polypodium trichomanoides, Osmunda regalis, and several Polystichums were exquisitely green and luxuriant.

There is really no limit to the plants that lend themselves to wall gardening in all sorts of aspects and situations. Even some of the choicer kinds of alpines may be grown on walls by the aid of a copious water supply, and a hose-pipe connection with the water-main is often a great advantage, as there is naturally a considerable amount of evaporation from all exposed wall surfaces.

B.

PREPARING FOR THE SUMMER GARDEN.

As the end of May approaches the attention of all gardeners is turned towards the important operation of beautifying flower-beds for the summer months. In this tastes differ and fashions are ever changing. At one period it was difficult to find any display of summer-bedding that was not formal and in some cases decidedly artificial. That was the age of straight lines and angles, which latterly have been superseded by arrangements more natural, more elegant, and, generally speaking, more in character with the surroundings. Bedding season is a time that has its responsibilities, for after-success or failure in the summer's display depends greatly on the manner in which our plans are formed, the way in which the colours and plants are blended, and the employment of such kinds that are suitable to soil and locality.

Many times I have seen amateurs' flower gardens gay at this time of the year—for a day or two; then there has come a provoking frost, which, if not sufficiently severe to destroy them entirely, has so retarded their progress that weeks elapsed before they again commenced growing. There are the cold winds so prevalent in May, and of which we have recently had our full share; they shrivel up the tender foliage and nip the advancing shoots, so that the plants' vigour is seriously weakened.

Preparation of the beds

is a matter that must not be neglected. Where bulbs have been grown, and the foliage is dying, they may be taken up and laid out to dry. The beds should then be dug and the soil well broken up. The question of manure depends largely on what is to be grown. With Pelargoniums the aim should be to obtain a maximum of bloom and a minimum of rank growth, and to do this it is best not to apply any strong manure. Leaf-mould is excellent, and the fibrous roots of the Pelargonium enjoy it immensely, but if manure is used in the case of any beds where the soil is impoverished by the roots of surrounding trees, let it be of a littery nature and thoroughly decomposed. Pansies, on the other hand, which are now used so largely for bedding, enjoy a little cooling manure, which prolongs the flowering period, particularly if the season is dry. That from the cowshed is preferable, and it should be dug in sufficiently deep so that the roots at planting-time are not inserted directly into it. Poor soil may also be enriched for the accommodation of Dahlias and some kinds of annuals. I do not wish to assert that the amateur must do nothing at present in the way of planting. On the other hand, hardy plants may be got out, and will be all the better for planting. It is a great mistake to leave Calceolarias too long in their winter quarters, as they get leggy and unshapely instead of being of that sturdy, bushy character that foretells dwarf habit and abundance of bloom. Where they are to be planted in a mass the beds may be prepared and the operation performed without delay, and where they are required for intermixing with plants of more tender habit they should have been removed to a nursery-bed several weeks ago. Pansies may also be planted for edgings, and the blooms kept removed as they fade. The variety of Pansies is now legion; but if the amateur has three distinct colours—say, white, blue, and yellow, he will have sufficient for his requirements. For dwarf habit and free-blooming qualities there are few better than Countess of Hopetoun, Blue King, and Ardwell Gem. White Antirrhinums (Snapdragons) and

Pentstemons should be removed to their summer quarters now. Perhaps the last-named plants are not appreciated by amateurs to the extent they ought to be. With the former a good strain of dwarf habit is requisite, and having obtained it, the plants are easily increased by the insertion of cuttings in a sheltered position in the autumn.

H. H.

FERNS.

GLEICHENIAS.

Unlike many Ferns, during the winter months the Gleichenias require a liberal supply of water, not so much, of course, as when growth is more active. They are very shallow-rooting Ferns; hence they suffer sooner than one might be led to expect. The majority of the roots are to be found near the surface; therefore it is much the best to grow the plants in pans. It is never advisable to let the plants suffer from want of water. In this respect they are almost as sensitive as the Tree Ferns. When watering them I prefer to use a fine rose upon the can, so as to ensure all the soil being thoroughly well moistened. In cases where the rhizomes and surface roots are somewhat bare and too much exposed, a sprinkling of sand and peat or leaf-soil will protect them. These parts of the plants need to be kept moist; if the rhizomes suffer, the future crop of young fronds therefrom will be correspondingly weak. There will not, as a rule, be much active growth in winter, although a few kinds rarely take much rest. The first opportunity should be taken to thoroughly examine the plants for insect pests. In some instances the brown-scale is troublesome; this should be dislodged by the careful use of a small pointed stick. It is a tedious process, but as insecticides are out of the question in a liquid state for fear of injury, it must be done. Fumigation will remove the thrips where these are found troublesome, and that without injury to the plants. The young and tender forms of the brown-scale will also be killed by about three gentle fumigations. I do not, however, think the old brown ones would be much affected.

Whilst most of the Gleichenias prefer a dry atmosphere, there are two notable exceptions; these are G. flabellata (quite a cool species) and G. dichotoma, which thrives best in warmth. Both of these may be syringed freely; thus in their case the thrips can be kept down. In most instances the growths will now be very dense. When any fronds begin to fade or turn brown they should be carefully cut away, taking care not to injure the leading growths in so doing, as these will extend from year to year almost indefinitely. This work is better done with a pair of Grape-scissors than with a knife. In any case where the fronds are overthick and they can be regulated, this also should be done; whilst if re-tying and staking are essential, these, too, should be seen to whilst there is time to spare to do it carefully and well. For the winter, a night temperature of from 40 degs. to 45 degs. will suit them well, save in the case of G. dichotoma, which I prefer to grow in an ordinary stove, by which treatment it develops much finer fronds. It often makes good growth during the winter-time, and at all times looks thriving if well cared for. The others cannot be hurried in their growth. G. Mendeli is an interesting kind (see illustration). R.

Hart's-tongue Fern in Ireland.—In Gardening, April 17, it is mentioned the Scolopendriums need more water than the majority of Ferns, but in the neighbourhood of Sligo the common Hart's-tongue Fern is very abundant, growing in very dry positions on hilly ground of the limestone formation, and I have never seen finer plants of it anywhere else.—W. M.

FERN-FRONDS FOR CUTTING.

Ferns are amongst the most beautiful and popular of all plants, and some of them are extremely valuable to supply fronds for cutting to mix with flowers in almost every form of arrangement, in bouquets of all kinds, and in the filling of vases, etc., for table and room decoration. To have Fern-fronds in good and lasting condition special treatment is required to get them of stout texture and firm, for without these qualities they wither and fade in a very short time. The chief point is to grow the plants freely and well in a moist, genial atmosphere, and also to afford them plenty of light by placing them near the glass, where they can also have abundance of air, which assists greatly in hardening the stems and bringing about their maturity, for if cut before they arrive at that stage they will not last any time. The most choice Fern for bouquets is, I think, Adiantum gracillimum, the fronds of which are somewhat smaller than those of the well-known Adiantum cuneatum and the leaflets are more minute. The British Maiden-hair (Adiantum Capillus-veneris) is very well adapted indeed for working in with cut-flowers; with the tips of the fronds peeping out amongst the blossoms, the effect is charming. The fronds of Adiantum setosum are also very charming, and form a capital background for two or three flowers to wear in the button-hole, their shape, size, and spread just fitting them for the purpose. This variety looks well in a small wire-basket or perforated Cocoa-nut shell, through which the fronds find their way and produce a very pretty effect. This Fern does remarkably well in a greenhouse temperature. The boldest of the Adiantums is A. Farleyense, the colour of the fronds of which is unique, varying in tint according to age. Unfortunately, these fronds are not very lasting in a cut state, but as an ornamental pot plant A. Farleyense is unrivalled. For dressing épergnes or large glasses Adiantum tenerum and A. concinnum latum are the most striking, but to be durable when so used they must be fully developed and "ripe." The first-named of these is a very handsome species, after the way of A. cuneatum, but larger, and having a less number of leaflets. All these Adiantums admit of ready increase by division, which is best carried out early in the year, just as they are starting into growth, as then the injured parts soon heal over and the young plants become quickly established. The soil best adapted for Adiantums and most other Ferns is a mixture of tough turfy peat and loam, in the proportion of two-thirds of the former to one of the latter, to which a good sprinkling of sharp silver-sand should be added to keep the whole porous. To ensure a free drainage—a great point in Fern cultivation—nothing is better than ordinary crocks made of broken flower-pots, of which at best not less than 1 inch in depth should be placed in the bottoms of the smaller pots, and double that quantity in those of a larger size. Although Ferns take and require a deal of water when well rooted and in full growth, they only need just sufficient water during the earlier stages to keep the soil moist—a condition that may be maintained by frequent syringing of the paths, etc., which, by creating a moist atmosphere around the plants, is highly favourable to their healthy development. Next in point of merit for cutting purposes to the Adiantums just mentioned is the Onychium lucidum, a Fern which bears rather plumy, slenderly divided, shining, deep green fronds, remarkable for their feathery lightness and elegance. Grown up near the glass where they get plenty of light and air, they become firm and stand well in a cut state; and removing the fronds does the plants little harm, as they produce others freely and in rapid succession. Pteris serrulata is another Fern that associates well with flowers, and it is a very hardy kind that succeeds well in a greenhouse temperature, as does also Pteris cretica and its variegated form, albo-lineata, both of which are most valuable in a cut state. These Pteris Ferns send up great numbers of fronds, the fertile ones being taller and narrower than those that are barren, which are serrated at the edges and much the best looking. Pteris scaberula is a great favourite with many, but, beautiful as it is as an ornamental object in pots and baskets, I do not care for the fronds when cut, as, although finely divided, they are not loose and open enough. The habit of the plant, however, renders it peculiarly adapted for running and trailing over the edges of rocks, or the sides of pots or pans suspended, conditions under which

Gleichenia Mendeli. From a photograph by Mr. C. Metcalf, Mill House, Halifax.

it is seen to advantage. Another elegant Fern for cutting is Davallia tenuifolia, something like Onychium lucidum, but even more striking and beautiful than that well-known kind. B. H.

OUTDOOR PLANTS.

ENGLISH IRISES.

Few flowers in spring are so welcome, so beautiful, or so delightfully fragrant as the reticulated Iris and its varieties, and although it is with the greatest difficulty kept alive even, in some districts so strong has the love for this beauty grown that people who cannot grow it out-of-doors manage to have a few pots for the conservatory, and for such a purpose it has few equals. The old idea of cultivating these bulbous Irises as we do Squills and Meadow Saffrons has long since exploded. They require frequent lifting, and the better they are stored and drier the greater will be the success. Our summers are too cold and wet to leave such bulbs in the ground, and covering over with glass frames is not nearly so effective as lifting. Another practice which tells against their successful culture is early planting; these bulbs should never be planted before late autumn or even mid-winter. In the first place, they have a better chance of being thoroughly dried, and in the second place, little or no leaf-growth is made to be destroyed by the severe frosts in winter.

They should be encouraged, however, to make root-growth, and this will be greatly facilitated by a covering of leaves or loose Pine-branches in hard, frosty weather. This applies more or less to all the bulbous species, and even in the case of the English and Spanish race of bulbous Irises I have seen many fine beds and groups destroyed by frosts, the result of too early planting. Too early planting causes the foliage of the Spanish Iris to brown and wither at flowering-time, and this may be to a great extent avoided by planting in the latter end of September or October instead of in August. Both the Spanish and English Irises are more largely grown in gardens than any of the other species, and the perfection reached by raisers of these new varieties in the marvellous colours and markings, and the curious blends and blotchings, entitles them to a first place amongst hardy bulbs. They are not only more easily grown, but they are less subject to disease than, for instance, the forms of I. reticulata, which simply refuse to grow at all in some localities, and although this disease may be somewhat retarded by lifting and careful storing, it is very difficult to eradicate, and in wet seasons carries the bulbs off by the thousand. The English Irises are more robust and withstand the rigour of an English winter and wet summer much better than the others. The name English Iris seems to have been applied to I. xiphioides in the very early days of bulb culture. It is a native of the Pyrenees, with a very limited distribution, and it appears that the bulbs were introduced from there to Bristol and thence to Holland, where it was called English Iris. It is a most charming summer bulb; the intense blues, the pure whites, and the various markings and blotchings of the flowers are extremely effective in groups and never fail to attract attention. There is a curious form called Thunderbolt of a dusky dull colour, which seems to have been well known to Parkinson in the old days. It is said to be a hybrid between the English Iris and I. filifolia, but of this nothing very definite is known. It rarely seeds in cultivation, and is grown chiefly out of curiosity. I. Xiphion (the Spanish Iris), from Spain, Portugal, and Algiers, is one of the finest and most variable types of bulbous Irises. It includes all the colours of the rainbow, some of the varieties being very remarkable from the curious blendings of these peculiar shades. They may all be obtained readily of any bulb merchant for a few pence, and in a few years large groups may be had, so quickly are they increased from offsets. They may also be raised from seeds.

English Irises.

A new Forget-me-not.—I send you a few plants of Myosotis alpestris gracilis, as it does not seem to be known in England. The advantages I claim for it is its dwarf and compact habit, and its free-blooming qualities, as you will see by the plants forwarded. When seen in the beds with other varieties its superiority is at once clear. For spring bedding, growing as it does so much like the Lobelia pumila, it should be of the greatest value to gardeners. On the journey some of the blooms may have faded, so kindly make allowance for this. These are grown in the open ground.—F. C. Heinemann, *Erfurt, Germany.*

*** A very bright coloured variety, but probably of M. sylvatica, which is very near to M. alpestris. The plants sent were compact and covered with flowers. A pretty garden plant.

Pansy Countess of Kintore, etc.—There are certain of the so-called Violas (Pansies) that are most admirably described as tufted, but this is not one of them. It has a loose, spreading habit, yet when in bloom in quantity it is exceedingly pretty. But there are some newer varieties of this piebald section that have a better habit, notably Iona, dark blue, blotched white; Mrs. H. Bellamy, purple and lavender-blue; and The Mearns, plum, edged white. These are three lovely particoloured varieties, having fine flowers and generally an excellent habit. To have them at their best for the summer it is wisest to put in cuttings into a frame or under handlights early in September, or failing these, then in fine soil that has a good portion of sharp white sand intermixed, under a north wall or fence where it is shaded from the sun. Once rooted the plants will stand all the winter, and may be transplanted in the spring.—D.

Hedgehogs.—If "Clifton" leaves the hedgehogs to find their own winter quarters, I think they will be all right. We have very fine specimens in our garden, and some of them are very old. They like meat very much, and are greedy over their milk. We find them most useful in clearing the garden of pests, but we never touch them. Let them go their own way all the year round.—Lolly.

Primula japonica is always happy with its large fleshy roots near the water, and in this position the plant is now blooming in many places, its whorls of brilliant crimson flowers being very effective. Raised from seed and planted a dozen or more in a group, and in quite moist ground, this is a really grand Primrose that gives but little trouble.

ROSES.

MOSS ROSES.

The very name of Moss Rose recalls to many of us scenes in our childhood's days when these Roses and the Maiden's Blush occupied a conspicuous place in nearly every garden in the land. Naturally the wealth of beautiful varieties of the Teas, Hybrid Teas, and Hybrid Perpetuals, etc., has been the cause of the deposition of many old favourites. The question is often put to me, "Do you grow the Moss Roses now? I very seldom see any;" and I am forced to admit that their cultivation has been sadly neglected. This charming class of Rose appears to have escaped the notice of hybridists, but if they try to improve the flower at the expense of its great attraction—the Moss-like growths enveloping it—then I would say, "Leave well alone." Doubtless, a rich crimson and a yellow variety with the Moss-like growth of the common pink would be hailed with delight by all lovers of the queen of flowers.

The culture of Moss Roses is not at all difficult. If dwarfs or bushes are desired I would recommend them to be either on own roots or budded on seedling Brier, but I think they appear to the best advantage when budded upon short standards with stems about 2 feet high. The Moss Rose delights in a rich fibrous loam with plenty of well-decayed manure added, and the plants should be transplanted every three or four years—as, indeed, all Roses should be—to maintain the vigour of growth so essential to their success, and to ward off the mildew, a fungus to which they are very much addicted. If grown in a border, and a portion of them transplanted each year, we should thus prolong the flowering period very considerably.

At pruning-time the knife must be used rather severely, excepting in the case of the very vigorous kinds, and the growths should be well-thinned in May to admit air freely to the centre of the plant. Ample room should be afforded when planting, as they speedily develop into huge bushes and trees. A good dressing of well-decayed manure applied in autumn and forked in in spring will be of great assistance in building up the buds. Many of us find in the winter months that we have an accumulation of liquid-manure in the tanks placed near the manure heap. If this liquid is poured on to the Rose-beds, giving the Moss Roses a good share, we shall have no cause to regret doing so. Some varieties, such as the Common Pink, Crested, and Crimson Globe, make grand standards to plant on lawns, and these will quickly make large heads and be a considerable attraction during the month of June. Pyramids or pillars could also be produced by planting alongside walks some of the very vigorous kinds, such as Comtesse de Murinais, Blanche Moreau, and the varieties named above. If trained in pyramidal form very little pruning, if any, will be required until the plants are five or six years old, but if the growths get too crowded these must, of course, be well thinned out.

Hedges formed of the common Moss have a beautiful effect when growing freely, and this variety could also be used to advantage in the wild garden. The plants should be on own roots and allowed to ramble at will. Some varieties are reputed to be perpetual, but this appellation is rather misleading, for to be perpetual we naturally should expect to see flowers produced in autumn.

I append a list of a dozen varieties which I consider worth cultivating. There are many other varieties, but the list given below is representative of all the colours at present obtained. I have placed them in their order of merit, so that if only one can be grown it should be the first named, and so on.

Common Pink.—Buds beautifully mossed. Too well known to need description.

Blanche Moreau.—Fine paper-white, the Moss-like growth being of a peculiar dark green colour, forming a beautiful contrast to the white flowers.

Little Gem has flowers of a deep pink colour and very small; the tiny buds are freely produced and are very mossy. It is a splendid variety for pot culture.

Crested.—A clear rose colour, the flowers being enveloped in a peculiar Parsley-like growth of a very striking appearance.

White Bath.—An old favourite, and in some

respects the best white, but not quite so vigorous as Blanche Moreau.

Celina.—Rich crimson, well mossed, and produced in panicles of eight or nine blooms each.

Comtesse de Murinais.—White, shaded pink, very showy and free, each shoot crowned with panicles of blooms eight or nine in number, well thrown out from the stem.

Salet.—Blush-pink, with a deep rose centre, large and free.

Mme. Wm. Paul.—Bright rose, free blooming, and the most perpetual of any.

Crimson Globe.—Quite a new departure in Moss Roses, the flower being of almost exhibition size, of a rich crimson colour, and buds well mossed.

Lanei.—Deep rose, almost crimson, and fairly well mossed.

Gloire des Mousseuses.—Beautiful blush-pink, large and full.

Mme. Edouard Ory.—Rosy-carmine, large and well mossed. P.

Treatment of Tea Roses in pots (*Nemo*).—It is too late to prune either of the pot-Roses you name. Grow them on steadily, taking great care to avoid extreme fluctuations of temperature and draughts. By the end of July they may be stood out-of-doors to ripen and solidify the growths. At this time they will need careful watering to avoid drought and at the same time not unduly encourage new growths. In November repot in a rich compost, only giving a slight shift, and proceed to prune by cutting away all weak and lateral growths, especially from the centre. Stronger shoots may be cut back two-thirds of their length, always arranging for the terminal eye or bud to point outwards. Yours is an excellent selection, but we would like to see Mme. Falcot, Niphetos, and especially G. Nabonnand among them.

Roses for greenhouse (*A Novice*).—The first four Roses you name are excellent for spring blooming; but the bulk of their flowers would generally be over before the middle of May. We would discard Marie d'Orleans and Etoile de Lyon, replacing them with G. Nabonnand and Francisca Krüger. Your temperature is quite high enough for any Roses. If you will send us a flower and leaf of your white Rose we will name it for you. It is almost impossible to decide from a written description.

Marechal Niel Rose (*K. E. H.*).—Prune now, cutting out weakly wood and any shoots that have flowered.

THE KITCHEN GARDEN.

VEGETABLE MARROWS.

The Green Varieties.

Now is the season for planting, and amateurs can often grow this vegetable to perfection. Sometimes they fail to get a good crop in return for labour bestowed, but this is partly through errors of judgment—in fact, they are too kind to the plant, and the latter in return gives them a wealth of leafage, but few fruits. A note appeared on the cream or white varieties a few weeks ago, and I will now confine my note to the green types and culture, treating the latter also from an ornamental point of view, as the Marrow makes a good screen or shelter when given a proper position. Some prefer the one illustrated (the Long Green) for exhibition, but it is a matter of taste, and judges often differ. The sure test as regards quality is quick growth, not coarseness. When a Marrow is allowed to perfect seeds it is past its best. It should be used when quite young, and this allows the plant to produce a much heavier crop. I am aware the question of fruiting may be thought simple, but some amateurs delight in allowing their plants to produce extra-sized fruits, and wonder why they do not continue bearing freely. If large fruits are needed, allow one or two plants to produce them, keeping others closely cropped.

Long Green Vegetable Marrow. From a photograph by Mr. Parren, Northgate-street, Canterbury.

The system of growing Marrows on a mass of rich manures came from the idea that plants to do well need such treatment. The best crops we have are grown on the flat with only a spadeful of decayed manure round the roots at planting. If we look at the market growers who grow Marrows by the acre, there is little manure—the growth is strong, short, and a mass of fruit at nearly every joint. There is, if one may term it, no running away of leaf-growths, each plant being of compact growth, and regular cutting gives the plants a chance to perfect a succession of fruit. It may be urged that Marrows are grown as

Ornamental plants

in addition to their fruit. Certainly, but grown thus one cannot class them as profitable. If used thus fewer fruits will be produced. I know they have their value as a cover, and few plants are more useful to cover rubbish-heaps or unsightly corners. Grown thus, if fruits are needed, my advice is, do not plant in a mass of rank manure, also plant so that full light and sun may reach the growth. I saw these plants last year in an amateur's garden used as a screen to divide the flower garden from the vegetable plot with excellent results. They were fruiting well, but the fruits were cut small and the plants given ample attention in the way of food and moisture.

For cover, or to form a screen, the trailing kinds are most useful. Few are better than the Long White and Long Green, and a little shelter at planting is well repaid; indeed, a necessity in our variable climate, as the plants are very tender. Much depends upon the condition of the plants when planted. If drawn or not well hardened they suffer. I prefer to raise them in cold-frames, as growth is then more sturdy and the plants do not receive a check when planting, but it is well to add that, raised thus, one must be very sparing of moisture until the plants have made three or four leaves, as the seed decays if too moist at the start. Another plan to get a succession of fruits is to raise a second lot of plants at the end of June. These, if placed in good soil, will fruit freely till cut down by frost, and I notice earlier plants become exhausted by the end of August when cropped heavily. Prince Albert is a very good green variety, not so large a fruit as the Long Green, but a splendid cropper. This I find of superior table quality to the Green Bush variety; the latter is a good cropper, and worth growing where variety is valued. Planting out may be done at any date from now, and the plants require more moisture when in full vigour. Red-spider soon cripples the plant if moisture is lacking. G. W.

SEAKALE FOR LATE USE.

This is one of the very best vegetables that can be grown, and deserves to be more cultivated by gardeners. It can be had in use for more than six months together, and this through the period when choice vegetables are scarce. It is a vegetable that can be grown by anyone, as it will succeed in any situation not overhung by trees, and it is not expensive to grow, although some people think it is.

A late supply may be had very easily. In our own garden the late is quite as valuable as the early Seakale, and being much appreciated, I make a point of keeping the supply as long as possible. Some three years ago I planted some root-cuttings on a north border at the foot of Pear-trees. The roots of the trees prevented me working the soil deeply. Accordingly I planted short thongs, keeping them about an inch under ground. These were planted about 10 inches all over the border. The object was to get as much as possible of nice useful Seakale from the space. After two seasons' growth, this year I placed a deep, thick coating of sifted coal-ashes over the whole bed early in the new year. As the growth advances the ashes are raised over the growth. By so doing, I began cutting from this bed on April 19th, and shall have enough to keep one fairly well into May. I was surprised to see how nice and white and tender was the growth. Nor does it get dirty but the reverse, as when it is washed in clear water one would never think it grew in ashes.

John Crook, *Forde Abbey Gardens.*

Early Potatoes.—The recent bitterly cold winds and sharp white frosts have again taught us the lesson that the Potato, in spite of its having been grown in Britain for 300 years, still remains a tender exotic, and great breadths of tops well through the ground, and even several inches in height, have either been severely cut down or so much injured that growth has been thrown back two or three weeks. This harm has been less in the south, but greater in northerly districts. I suppose we shall never learn the value of patience in regard to Potato-planting, but we ought, all the same, to know that well-sprouted sets planted at the end of April will usually escape injury from frost and come away unchecked and be quite as early in tubering and cropping as any planted a month earlier. Soil and air are both warmer, growth is far more rapid, and tuber crop is larger. It is all a matter of good preparation and wise patience.—A. Dean.

Utilising Celery ridges.—The plan of throwing out Celery trenches as early as possible is a profitable one, as the intervening spaces come in useful for growing on any quick-maturing crops of vegetables or salads. I generally devote part of mine to small sorts of Cabbages, Walcheren Broccoli, while on others Lettuces find a home. Small seeds also, such as the

general run of winter stuff, may be sown where other ground is scarce, as these will all be cleared off before any earthing up takes place. Some gardeners sow their Lettuces on the ridges and merely thin out the seedlings to the required distances instead of transplanting, this answering very well so long as the thinning is done when the plants are quite small.—J. C.

Late sowing of Runner Beans.—In garden management, as in most other things, cultivators get into fixed grooves, and this applies more particularly to sowing vegetables, and especially to Runner Beans. In several districts where I have been the rule has been to sow these the first week in May. This does very well if an average season for the first sowing, but often a week later would be better. Everyone who wants a continued supply over a long period should sow, whatever the quantity may be, twice at least, and in some instances three times would be more advantageous. My method is to sow about the middle of May and again a month later. By so doing we are never short till frost destroys them. The sowing made in June comes in full bearing just as the first is on the wane. I sow mine in land worked 2½ feet deep, with a good supply of decayed vegetable matter mixed into the bottom spit. Last year they were 12 feet high. If a very late supply is wanted, then a sowing may be made early in July, where they can be protected.—J. Crook.

Frosted Potato tops.—Those growers of Potatoes who took the precaution to draw fine surface soil up to and partially over the precocious tops, have already found the benefit of their labour, whilst tops not so protected have been in exposed places cut to the ground; those earthed have the stems uninjured, and they are already breaking new growth, and will soon recover from the check. In all cases it is well to go over the tops and pick off the frosted leaves, not only to secure neatness, but also to check any descent of the vitiated sap into the still healthy stems below. Generally Potato growers have had a useful lesson with respect to the unwisdom of planting too early; but not one in a thousand will next year regard it. Still, those who, planting well-prepared sets later, escaped harm to their crops, are gainers.—A. D.

Onions and Carrots.—Both these roots are in the young stage of growth very susceptible to the attacks of maggots, a fact too many have reason to know. The harsh, drying winds and cold nights now prevailing assist the maggots in doing mischief, because they so much check growth. The best plan, where it is practicable, to help the plant to move is to give twice a week moderate soakings with soot-water, as not only will that help to destroy the maggot, but will also stimulate growth of the plants. A very small quantity of paraffin may be stirred in with the water, but it is an ingredient easily abused. It is unwise whilst the nights are so cold to water in the evening. Preferably the watering should be done about seven o'clock in the morning or four o'clock in the afternoon. After the soil has partly dried hoe deeply between the rows of plants to check evaporation by hot sunshine.—A. D.

629.—**Trapping Sparrows.**—No doubt the most merciful method of thinning sparrows is to shoot them. They are terrible pests, and in the neighbourhood of houses or barnyards, and especially in and near towns, they do immense mischief—far beyond any assumed good they do. So bad is their case that the Board of Agriculture has quite thrown over the house sparrow, because it is a veritable farm and garden pest. The birds are so cunning that nothing they can see will alarm them. Black cotton or thread, not visible until touched, does alarm them, but such sort of protection cannot always be furnished, neither can fish-netting be in all cases. Traps to catch the sparrows singly would be of little good. The best method seems to be to entice them down into clusters by laying small corn or seeds in a yard, and shooting the birds wholesale.—D.

Tufted Pansy Blue Gown.—Old plants of this beautiful sort are covered with charming little blue flowers, and prove conclusively that this is one of the very best Tufted Pansies for bedding. It is useful as an edging to a wide border, as its form of growth is just that of a carpeting plant. The raiser of this variety is quite justified in stating that plants of this type are seen in better condition after the first year. In many instances these are considerably over a foot in diameter, and are very effective, especially so when massed.—D. B. C.

BEGONIAS OUT-OF-DOORS.

The Tuberous Begonia, when it does well, is certainly one of the most lasting and brilliant of bedding-out plants. It grows into a very strong plant, about 18 inches wide and 18 inches high, with stiff, broad foliage and immense flowers carried well above it. As it will not grow in every kind of soil and under every kind of treatment, I should like to inform the readers of Gardening how they can succeed well with it if they do not possess a soil which is naturally suited to it.

I have heard many people say that they cannot grow Begonias in a satisfactory way out-of-doors, and though in some gardens I have seen splendid ones which left nothing to be desired, in many others I have seen small plants which were called Begonias, but which no more resemble what a Begonia-plant should be than Narcissus nanus resembles a Narcissus Empress.

I have discovered that it is not climate upon which a Begonia depends. In moist summers and places it does best, provided it has good drainage at its roots; but if watered if the weather is very dry it does remarkably well, and smoke does not affect it. What it depends upon is soil and a thorough root drainage.

For several years I tried to grow them by raising tubers in a greenhouse, and then planting them out in beds which had been well dug and manured. The soil was rich and rather stiff, and this treatment did not succeed. I live in rather a smoky neighbourhood, and at first I thought it was the smoke. But I knew a garden in Ireland where the Begonias were a sight worth seeing, and I made up my mind not to give up the attempt to grow them in mine. I found that Begonias in pots need free drainage, a fibrous soil and bone-dust manure, so I had all the soil taken out of one of my beds about 20 inches deep. Then I had broken-up sods, in rather large pieces, with some stable-manure amongst them, put at the bottom of the hole thus formed. These would occupy about 8 inches of the 20 inches. The remaining 12 inches (and about 3 inches above them towards the centre of the bed, but no more—I am no believer in raised beds so far as the well-being of the plants in them is concerned) I had filled in with this mixture: one and a half parts well-rotted leaf-mould, one and a quarter parts of soil, half a part coarse sand, and the remaining quarter part of rotted manure. To this I added about 7 lb. of bone-meal to a bed about 2 yards square. In this I planted my Begonias, with the result that they flourished. I have always planted my bedding Begonias thus since.

Now as to treatment previous to planting. I buy, in the first instance, tubers of bedding Begonias, and I strongly recommend good ones to be bought with flowers carried erect. I believe in these bought tubers much more than I do in growing from seed. The result is more uniform and altogether better. After the first year these must be taken up as soon as the first frosts appear, and kept in the clumps of soil which surround them. Under the stage in a greenhouse is the best place to store them, and they must never be allowed to get quite dust dry, or they will shrivel up. On the other hand, they must be kept from damp or they will rot. Nearly dry, but not quite, is the best treatment. In February they must be taken out of these clumps of soil, put into a mixture of soil, leaf-mould, and sand in a shallow box and started in a greenhouse. Avoid very much water until the leaves begin to appear, but keep watering slightly until then. When the leaves appear cut out the eyes like you would in Potatoes, and plant these in pots separately (in soil as before directed). Be sure there is a good drainage at the bottom of the pot, and that each eye has a piece of rooted tuber attached to it; then water well and constantly and keep near the light. If once they are allowed to draw up and become weak the Begonias are spoilt for that year. They will never be really satisfactory after a bad start like that.

In planting the tubers let the crown appear just above the surface of the soil, but in planting the started eyes the crown of the tuber beneath them should be just covered with the soil. Of course, on first buying tubers they are small and must not be divided; but these small tubers, with this treatment, will make great plants during the summer and give an enormous display of bloom. The great advantage of Begonias over Geraniums is that they do not have their flowers dashed and spoilt in rainy weather, which, considering how much rain we often have, is certainly a great gain.

Named sorts of single Begonias do splendidly out-of-doors (the erect-flowering ones, of course), and I think it would repay anyone to get up a stock of some very good large-flowered kind for this purpose. But if in buying bedding kinds the large-flowered ones are chosen to begin with instead of the smallest and cheapest, it comes very nearly to the same thing as regards the size of bloom. After the first there ought to be no need to buy at all. And they have another advantage—they take up much less greenhouse room during the winter than Geranium cuttings, and, on the whole, give much less trouble.

As soon as the leaves are showing well, and the plants have become settled into their pots, it is much better to put them out in a frame near the light than to leave them in a greenhouse. But the best treatment of all at this stage of affairs is to make up a good bed in a frame to within about a foot of the glass and to plant the started plants in this until the end of May, when they can go into their final quarters. They ought always to be quite large-sized plants by the time they go out to their beds, as half the summer is lost unless they begin to bloom soon afterwards. This is the case with far too many bedding plants. They are not of much use until nearly autumn. In my opinion that is greatly due to bad management. I know from personal experience it can be avoided. But it is certain that it is more easy to avoid it in the case of Begonias than in many other instances, as they are never injured or put back by being moved. If this is done with a good clump of earth at their roots, and water is given freely just afterwards, they will go on growing just as if they had not been moved at all.

There is one piece of advice I must give to novices before I end. Do keep to one colour in one bed, and do not spoil the whole effect by putting a border of something else round it. This treatment ruins the effect of most beds, and gives a horrid patchy effect to the whole garden by being repeated again and again. There is no plant which it spoils the effect of more than a Begonia.

Mrs. Robert Jocelyn.

PLANTING OUT ARUM LILIES.

Arum Lilies will now soon have finished flowering and be ready for standing outdoors or for planting out during the summer months. It is an easy matter to plant them out, as they require but little attention and make very fine specimens afterwards. If the plants have been grown in a warm temperature it is necessary to harden them off gradually, and stand under the shelter of a tree, or in a position where they may be sheltered from late frosts till the time of planting out. The back of a mixed flower-border, or between the rows of tall-growing Dahlias, is a suitable position for planting, but if a vacant piece of ground can be spared on a south border so much the better, as more light will be afforded and they are not likely to get drawn. When turning the plants out of the pots shake away the drainage and a good portion of the soil from the roots, and plant in the ground in old spent manure. Tread in firmly around the plants to prevent the roots from going too far into the soil and also to obtain a better ball to the roots when lifting. They should be lifted in September, using pots according to the size of the plants. They make very fine specimens, producing four and five spathes at once; or, if required, they can be split into single stems, and in this condition are well adapted for windows or for any kind of indoor decorations. Feed freely during growth with liquid-manure.

W. J.

Othonna cheirifolia is a very distinct-looking plant with foliage of a glaucous hue and flowers resembling those of some yellow species of Hawkweed. It is a true perennial, delighting in warm, sunny places.

SEASONABLE NOTE ON TUFTED PANSIES.

The plants which were put out into their permanent quarters during March and April are established now. The continuous spell of cold and boisterous winds to some extent retarded their progress, but, now that more genial weather is being experienced, each day is making a great difference in the appearance of the plants. The Dutch hoe should be in frequent request now, keeping the soil constantly stirred, in this way assisting the growth of the plants, and ensuring healthy root-action. Weeds are now making their appearance, and these must be kept under, and their eradication is so much simpler and easier at this season than when they are allowed an uninterrupted course for a little longer. Beds and borders of autumn-planted Tufted Pansies are now giving the best display, and those readers of Gardening Illustrated who want their gardens to present a bright appearance from April onwards, and in particularly fine form during the first three months—April, May, and June—would be well-advised to adopt autumn planting with a goodly proportion of their stock. The spring-planted batch comes on with vigour when the autumn-planted ones are beginning to get a bit weedy, although by cutting out the old growths and pinching off spent blossoms, they may be kept in a healthy and vigorous condition until the autumn is well advanced. Some of the stronger-growing plants of those varieties recently placed out in the beds and borders have been severely knocked about by the strong winds. In such cases, a mulching of rotten manure passed through a coarse sieve will be very beneficial both in the support of the plant and in the food thus afforded it. Weakly plants should have their blooms and buds pinched off for a little while, in this way assisting the plant to make growth and obtain vigour. Last year's plants which were cut back in the late autumn are now covered with flowers. For a spring and early summer display these old plants are invaluable, and, although the individual blossoms are not so large as those propagated last autumn, yet this slight falling off is amply compensated for by the wealth of flowers which they produce. For large borders, if lifted in the autumn and replanted in masses, taking care to arrange the colours pleasingly, they are highly prized. They may be divided in the autumn to increase the stock. The present season will find a startling increase in the novelties of this popular hardy flower. Rayless flowers are increasing in number rapidly, and as these blossoms are generally so chaste they are sure to become the more popular. There are a few yellow sorts which are very promising, the flowers being large and of good substance, while the habit from a bedding point of view is all that one could desire, most of them being of a true tufted character. Princess Louise, Pembroke, Kattie Hay, and Molly Pope are four rich yellow sorts, and the cool weather of late has given flowers of large size and a distinct advance on most sorts for bedding—really, the only purpose for which they should be grown. Other colours have equally useful additions, and these shall be mentioned as the season advances. In the meantime keep a sharp look-out for any plants attacked by wireworms or leather-jacket grubs, and in all cases go to the root of the plant at once, where the depredator may often be caught red-handed. This will prevent further trouble from the same source. Any plants attacked by green-fly or red-spider and similar evils should have a spongeful of a solution of soft-soap and water applied, dissolving 2 ozs. of the former to a gallon of the latter. Let this be applied late in the afternoon or during the evening. Go over the same plants in the morning with clear water to remove any sediment that may have collected, or the sun may cause the leaves to blister or burn.

D. B. Crane.

Arenaria montana.—For a dry season like the present this is among the finest things that could be grown. The blossoms are snow white and the size of a florin or nearly so. Its total height is from 4 inches to 6 inches. It always appears happiest when near to stones.

Tulipa flava.—This is a most useful kind for the border, even if it cannot claim merit on other grounds, and also valuable for its late flowering. The buds are large and long, and the colour a pleasing shade of pale yellow. When seen in bold groups it is both distinct and effective, attaining to fully 18 inches high.

PROPAGATING THE ERICA, EPACRIS, AND GENISTA FRAGRANS.

There are few more popular or useful winter and early spring flowers than these, and now is the best time for propagation. As a general rule, we cannot recommend the amateur to attempt the propagation of the Erica and Epacris, great care being needed to avoid damping off. But there are some who appreciate home-raised plants so far beyond those purchased that a few words may be welcome.

Our illustration is considerably larger than the average cutting should be. Select young growths of the present season, a little more than half ripened, cut them off clean with a very sharp knife, and then trim off a few of the lower needles with scissors.

Do not prepare many before inserting, or they dry at the "base" and afford a less percentage of successful takes. Use a compost of sandy peat passed through a fine sieve or riddle. The pots should be half filled with drainage, a little of the coarser compost placed on top, and then 1½ inches of the sandy peat, made firm, upon this. A layer of at least ¼ inch of silver-sand should be placed on the surface. It is a good plan to sprinkle a little dry sand over the top, then insert the cuttings, and afterwards lightly dust over more sand, jogging the pot so that this works well around and assists to make the tiny cuttings firm. Use 48's or 32's, and place twenty or more cuttings in each pot. One good

Heath-cutting

watering should be given through a fine rose, and the pots allowed to drain for half-an-hour or so previous to being placed beneath a clôche or bell-glass. Plunge the pots and keep up a temperature of 60 degs. Frequent wiping of the inside to remove condensed moisture from the clôche will be a very important item, and the least suspicion of damp must be watched for and remedied. A very little finely powdered charcoal, dusted over any part where damping off appears, will generally stay the mischief if due care be taken to keep the glasses dry inside. As soon as new growth shows, a very little air may be afforded during the day, gradually increasing this, but not entirely removing the clôche for at least six weeks after you have commenced to give ventilation. Of course, you will take due care that a bright sun does not shine on the clôches, and also that the temperature does not rise above 65 degs. nor fall below 55 degs. When potting on give the same compost, ample drainage, and the assistance of a close atmosphere for a short time until the young plants take to the new soil, after which they may receive cool greenhouse treatment.

Genista fragrans, or Cytisus fragrans, needs much the same treatment, but is not so fickle in the matter of rooting. We would add a very little loam to the compost, and give a richer loamy compost when potting on. In neither case would we have the cuttings more than ½ inch long. It is very essential that a sharp knife be used, otherwise the base of such fine and wiry cuttings is bruised and unable to form healthy callus previous to emitting roots.

PROPAGATING BEGONIAS.

Leaves.—There are many ways of increasing these beautiful flowers, and not the least interesting is from leaves. Some two dozen or more of any special favourite may be obtained from a single leaf. Select a well-matured leaf—one that has turned shabby upon a plant of the ornamental or Rex section will do admirably. Make a number of incisions through the main nerves on the underside of the leaf, and then place it upon a pan of Cocoa-nut-fibre or peat, leaf-mould, and sand in equal proportions. A few pieces of crocks or stones laid upon it to keep the whole fairly well in contact with the soil is all that is needed. Lay the leaves right side up—*i.e.*, with the nerves or veins nearest the soil. Do not overwater the soil, and you will have small bulbils form at the lower ends of the nerves wherever severed. Roots will soon form, and the little plant push itself up through the decaying leaf. When three or four small leaves have developed the plants may be removed and grown on. A leaf treated thus, and the young plants allowed to grow through the summer, ripening them off in the same pan, will produce very useful-sized bulbs for potting up early the following year. Thus we can increase our stock of any Begonia. Keep the leaf partially close if convenient, and shade from a bright sun. A temperature of 70 degs., with a fall to 60 degs. or so at night, will be suitable.

Cuttings.—Almost any cutting will root if placed in a warm temperature, and compost of leaf-mould and sharp sand in equal parts. Make them in the same way as the Zonal Pelargonium and let them remain on one side for a day before insertion. The object is to partly dry the wound before it comes in contact with any moisture, and the cuttings must not receive much water until well rooted. The first few shoots from bulbs started early in the spring will root very readily in this form.

Divisions.—As soon as the tubers show where the eyes are breaking, cut them through with a sharp knife, leaving an eye upon each portion. Let these into a sandy compost, and keep them close in a temperature of 60 degs. to 70 degs., when they will come on very rapidly, and may be grown similar to others not divided.

Seeds.—Early in the year prepare a pan of sand and leaf-soil, thoroughly drained, and well watered after the surface has been made firm and level. Sow the seeds very thinly upon this, and do not cover with soil of any kind. A sheet of glass laid over the pan, a temperature of 60 degs. to 70 degs., and shade from too strong a light until the seed has germinated, will be all that is necessary up to the stage at which the seedlings can be handled and pricked off into the pans or small pots. The tuberous varieties may also be sown during early summer, and allowed to stay in the pans to ripen, when small bulbs will be formed for potting on the following spring, and which will come on earlier and stronger than seedlings of the same year's production.

Gloxinias may be propagated in exactly the same way as the above.

A. Piper.

Polyanthuses.—Beds and breadths of these hardy spring flowers have recently attracted great attention. Now is the time to secure seed and sow it in the open ground on fine soil that is fairly well manured, so as to stimulate growth, but still free from small weeds. Sow rather thinly, as the plants can remain in the seed-bed and become very strong for transplanting to the beds and borders in September. When the seed is sown and well raked in, strew a little fine sifted old pot-soil over it; then well water it if the weather be dry. Shade with newspapers or any thin material, as bright light is not essential to promote germination, whilst the soil will not become parched, and the seed dried. So soon as seed-leaves appear, the shading may be removed, but gentle waterings may be continued, as the young plants should be encouraged to grow rapidly and thus make good flowering stuff the following spring.—D.

Campanula glomerata dahurica.—A very useful, free-flowering border plant growing 1 foot or so high, sometimes 1½ feet, with clustered heads of a deep blue-purple. It is of compact growth, and may be increased to any extent by division. A very useful plant for cutting.

THE POPPY ANEMONES.

This is the popular name by which we all know and recognise the Garland Windflower (Anemone coronaria). It is an easily-grown plant, a plant that will flourish in all sorts of soils, and it is more than likely that this every-day recommendation is just calculated to do a certain amount of harm. It too often happens that those plants that can be well grown in every garden and in all soils are just the plants that many will grow, or rather purchase, with some such object in view, because of their requiring little or no attention. The result of all this is, unfortunately, and indeed too frequently, that the tubers of these plants are put into a hole little larger or more deeply stirred than a 5-inch flower-pot. The reward of such treatment is frequently seen in yellow leaves that should be fresh and vigorous, and puny, undersized flowers. It is a great recommendation to any flower that it will "grow in any ordinary soil;" but the plant that will answer to such treatment can always be grown to greater perfection with more liberal treatment, and, further, will pay for all the extra labour and care bestowed. It is just so with these Anemones, for in spite of the fact that they are among the easiest things to grow, there are few plants that respond to, and produce better results from, good culture. It is as spring flowers that they are best known in gardens generally, though the limit of spring by no means exhausts the period over which they may be had in bloom. Indeed, by planting the tubers in successional batches, flowers may be had from March to the end of October, or even later than this, provided no severe frosts are experienced.

The flowers are as bright and varied in colour as it is possible for them to be. Some of the scarlet and vermilion shades are extremely vivid in their colouring. The blue and lavender as well as the mauve shades are also numerous, and in their way equally charming. There is also a host of double kinds exceedingly rich and varied in their colours, many of the named varieties, both single and double, being in every way excellent. The chief advantage of these named kinds, apart from the superior flowers, is that it enables the planter to render the garden more beautiful by massing any given colour in a suitable position and, in conjunction with other things, employing them in a harmonious manner. So far as

Position

is concerned, these Anemones may be planted in a great variety of situations, endeavouring if possible to give them a slight shade. This is more needful perhaps where the finest flowers are required, and is perhaps more especially needed when planting the successional batches to bloom during the hot summer months. Those intended for spring flowering will be benefited if protection from the most searching and cutting winds can be given them. For example, in many private gardens such things may receive just the kind of protection they need if planted at the foot of a wall or in some equally sheltered place, and where such things are planted in October, and particularly if the tubers have been cultivated in the south of France, the autumn growth will be rapid, and not unfrequently become disfigured by the frosts that ensue. In a charming way do these Anemones mingle with Narcissi in the beds in spring, the abundance of the beautiful foliage of the former making a most delightful setting for the Narcissi, while succeeding them in the time of their flowering. And very charming, too, are these flowers in moist and rich meadows, and bright and attractive alike in shrubbery and woodland. In all these places they may be planted with a free hand; and if in the latter places their flowers are smaller than those grown in more cultivated quarters, they will be none the less valued in the end. A few remarks may be necessary with regard to their general

Culture.

Whether planted in beds alone or in borders, the soil should be deeply dug and fairly well enriched with rotten manure. In spite of the fact that the tuberous roots of these plants are not large, they quickly emit a large number of fibres that in good and deep soil find their way to a considerable depth—a somewhat sure sign that their requirements will not be satisfied in soils that are poor or shallow, or, what is almost as bad, those that are not prepared for their reception. Generally speaking, all the tuberous-rooting Anemones prefer a light loamy soil, and one that is well drained also. The most unsuitable soils in which these can be planted are those of a clayey nature, and where these are retentive the tubers frequently perish in the winter season. In all badly drained soils deterioration is likewise noticeable after the first season, and indeed it is unwise to allow them to remain. If the tubers are lifted as soon as the foliage decays there may be the possibility of their flowering a second season, which in the lighter, well-drained soils is of frequent occurrence. By deep digging and using freely river sand and leaf-soil, together with burnt earth and the like, the heavier soils may be transformed into quite a congenial home for these gay and beautiful flowers. The best flowers, it should be noted, are the result of autumn planting, but very fine flowers also are forthcoming when the tubers are planted quite early in the year, say in February or March. But the date of planting is one of those things which every gardener must decide for himself according as his peculiar requirements will dictate. With the soil well prepared the tubers may be planted over a very long period, far beyond the usual recognised limits of the florists of old, who in many instances gave preference to the autumn for planting. Indeed, it is at this season that they root so abundantly, and doubtless also, in due course, yield proportionately of their flowers. Notwithstanding all this, it is just possible to obtain very good flowers indeed by planting the dry tubers at midsummer. At this time the soil is warm and the tubers quickly plump up and grow, the majority of them flowering during September and October, a season when their flowers are as useful and welcome as in spring-time. The fact that these Anemones may be thus turned to account is not yet sufficiently known among gardeners and the managers of large establishments, who at all times have to provide large supplies of flowers. The same remark applies equally to the Anemone fulgens; indeed, the flowers of both kinds by successional planting may be had over a very lengthened period—in short, from February to the end of October. These plants at all times enjoy a fairly good and rich soil, and by planting rather thinly at 3 inches deep a good display is ensured. So far I have said nothing about

Raising from seed,

which is, perhaps, not only a simple but also an interesting way of growing these free-flowering plants. In all instances the seed should be sown in the open ground in well-enriched soil of good depth. Select a somewhat sheltered position, such as a shady border, and sow the seed thinly either in drills or broadcast. Drills are perhaps best, for the simple reason these are more easily freed from weeds, and an opportunity is also afforded for frequent surface stirring, which is of great help to the seedlings. The seeds may be sown at any time from March to the end of June. Later than this is scarcely advisable, inasmuch as the young plants would scarcely have time to fully develop before frosts arrive. Should the soil be dry, a good soaking may be given after the drills are drawn. Draw the drills at 8 inches apart, selecting a calm day for the sowing, and should the seeds be at all lumpy, take a handful of sharp sand or fine earth and, mixing with the seed, rub them through the hand till separated, afterwards sowing soil and seed together in the drills. Prior to sowing, the bed should be moderately firm, and when the seed is in cover very lightly with fine soil and make firm with the back of a spade. March-sown seed I would sow in a rather shady spot, but late June-planted seed should be sown in a warm, sunny spot, because of the limit to growth before the arrival of frost. Take care at all times to shade the seed-bed from all sun till the seed is well up, and likewise to keep the surface moist. When the young plants are matured in autumn they may be transplanted to other positions as required.

E.

Narcissus bicolor.—This is valuable as a late bloomer, as it does not commence flowering till such as Empress and Horsfieldi are past. The segments are pure white, broad, and overlapping each other, the trumpet long, clear yellow, and more drooping than in many of the larger forms.

CHRYSANTHEMUMS.

Selection of early-flowering Chrysanthemums for the mixed border (*Cariel*).—Your question is most opportune, as the time of planting has now arrived, and, in fact, the sooner the plants are in their permanent quarters now the better. Any well-known specialist should be in a position to supply you with nicely established plants in 3-inch pots, and if these be well watered previous to planting out excellent results are sure to follow. The varieties which we are pleased to commend are not expensive, and may be purchased for about four shillings per dozen or less, and there are few subjects so useful in the late autumn. Harvest Home, crimson and golden-yellow, is a good sort, dwarf, and free flowering in September, so, too, is Mme. Masse, lilac-mauve, very dwarf and free. Lady Fitzwygram, white, dwarf. Albert Chausson, orange-red, tipped yellow, rather later than most sorts, but very free, mid-October blooomer. Edie Wright, pink, fading to white, large flowers, September. Francois Vuillermet, pretty little flowers, light lilac-rose, very dwarf and free-flowering, one of the choicest September sorts. G. Wermig, yellow sport from Mme. C. Desgranges, which is a very good white sort. Madame Eulalie Morel, lovely deep cerise, shaded gold in the centre, dwarf, September sort. M. Dupuis, dark yellow, bushy, habit dwarf, blossoms during the whole of September. Mons. Gustave Grunerwald, pink, passing to blush white, very dwarf, commences to flower in August, and continuing on till October. Notaire Groz, delicate lilac-mauve, like a very early James Salter, very pretty, October sort. Sam Barlow, bright salmon-pink, a useful October variety. The following three sorts are usually at their best about the second week in October: Ryecroft Glory, bronzy-yellow, free and dwarf, strong-growing sort; Comtesse Foucher de Cariel, orange-yellow, one of the very best, exceedingly fine and dwarf; and Roi des Précocés, deep rich crimson, free and effective. All the above are Japanese sorts.

When to plant early-flowering Chrysanthemums (*Enquirer*).—The third week in May is generally considered the best time to plant early-flowering Chrysanthemums, but, as the weather has been very trying of late, you will not lose anything by being slightly later than that usually advised. Get your plants into positions at once, choosing, if possible, a quarter in the garden with a warm aspect. These plants prefer a nice open position, free from overhanging trees and shrubs, although they give good results in less favoured surroundings. Avoid positions where the plants would be shaded all day, as it is important that short-jointed and well-ripened wood should be developed, and this is only possible where the sun's influence is felt. The garden soil should not be too rich in character, but all the same must not be poor. Only well-rotted manure must now be applied, and this only in the case of impoverished soil. When planting take out plenty of soil, so that each plant may be firmly imbedded and well trodden in. Give each plant plenty of room, as most of the newer sorts make very rapid growth, and soon attain to large dimensions. If the plants are to be arranged in rows let these be quite 3 feet apart, and the same distance between the plants. This advice is for plants which have been grown on, and are now nicely established in 5-inch pots. If the plants have to be purchased now, and they arrive in very small pots, or without any pots at all, reduce the distance between the rows and the plants to 2 feet. Regarding the most suitable sorts to grow, see reply to "Cariel" in this issue of Gardening.

Auriculas.—Whilst many persons who find their best recreation in gardening, according to their knowledge and capacity, have no special fancies in flowers, yet in their gardening are supremely happy, many others have found unwonted interest as well as happiness in the particular culture of a speciality, such as the Auricula presents. Others may prefer the Carnation, whilst not a few cultivate both, and others have diverse fancies. But whilst many of our amateurish order have grown solely what is known as the show and the alpine sections of the Auricula, few seem to have cared very much

for that most attractive section grown outdoors in borders, which is so hardy and gives so much of beauty in the spring. There is in these a wide field open to anyone of leisure who may wish for an object upon which to spend time and energy in improving. We have what may now be called a beautiful race of garden flowers in these Auriculas, but yet a race that is so largely needing development. We have in them many colours or shades of a neutral kind, but too few that are striking or effective when seen in clumps in the garden borders. Whites, yellows, reds, and crimsons are badly needed. The flowers should be large, rounded, and flattish, of good substance, and have nice clear yellow centres; they should be borne on stout, erect stems, and not be so weak or flabby that the flowers are sprawling about, as is so commonly the case. Any one or more plants from a batch raised from seed giving any of these required features should be isolated, so as to ensure that the seedling progeny be fairly like the parent. Several hundreds of seedlings should be raised every spring, saving ultimately only a very few of the most promising after flowering. In that way, by constant selection and improving, presently may be obtained a border strain of great value and exceeding beauty.—A. Dean.

GARDEN WORK.*

Conservatory.

The necessity for regarding even the smallest conservatory in the working man's garden as a mere store-house for plants has now disappeared, and overcrowding would be inexcusable. Many of us aim at too much, and crowd more into glass-houses than we ought, and much injury is done thereby. Every plant which has flowered and done its work should be taken out of the conservatory now, not necessarily outside. Even such hardy shrubs as Deutzias, Rhododendrons, Azaleas mollis and pontica are not quite ready to be turned outside yet. The wood must be getting a bit firm, and the nights must be warm enough to prevent injury to the tender foliage; but at this season almost any temporary shelter will suffice to protect the foliage till the fresh air has hardened it. We place our plants in a temporary place, covered with canvas, which answers every purpose for a week or two, when the plants will be fully exposed. Daffodils and Narcissus, of which we grow some thousands in boxes for cutting, are turned out when the boxes are required for pricking off other things, and, without disturbing the soil or bulbs, are placed side by side on the ground, and left to ripen, which they do perfectly. They will then be shaken out, dried, and stored till September or October, when they will be planted out wherever there is room. The sun has considerable power now, and more water will be required. More ventilation also will be necessary. It is a relief to get rid of fires for a time. Just at the turning point of the days, when spring is merging into summer, fires may, I daresay they often do, harm. The dry atmosphere fills the house full of insects, and the flowers fade sooner. I often wonder when I see writers recommend fumigating with Tobacco paper to kill insects on successive evenings they do not try the vaporiser and clear the house of every insect and insect's egg for at least a month at one operation, without any trouble beyond lighting two or more small lamps, locking up the house, and putting the key in one's pocket till the morning. Truly, we are a Conservative people.

Stove.

Shift on winter-flowering stuff, such as Begonias, Poinsettias, Gardenias, Eranthemums, etc. Keep them warm and near the glass for the present, and pinch the shoots to make the plants bushy—at least, those things which pinching improves. Poinsettias are not usually pinched if fine heads of bracts are required. They are like Chrysanthemums in this respect—every pinching reduces the size of the blossoms. The double Poinsettia was, I suppose, only a selection from a well-grown form of the single, and has pretty well reverted back to the type. They are bright things in winter, and I think a few of the white variety should be grown for contrast. Be careful in syringing, especially Caladiums, Marantas, etc., to use only pure rain water, or the effectiveness of these things will be seriously injured. It is well to have general potting seasons with large collections of plants; but with young-growing specimens many of them will require more than one shift in a year, and it is well to repot when the plants want more room. Such things as Eucharis Lilies flower best in a pot-bound state if helped with liquid-manure. After the usual partial rest has been given, liquid-manure soon sends up the spikes. Night temperature now 65 degs.

Fern House.

This will be at its best now. Maidenhairs will be charming, and all the Pterises and other families will be making growth freely. The demand for foliage plants as represented by Ferns and Palms is daily increasing. Warmth, shade, and moisture pretty well sums up their requirements, and these are not difficult to provide. Sow spores now in a shady corner, and cover with glass and keep close.

Late Peach House.

Keep the growth thin. All the shoots not required to fill in the tree should have been removed and others neatly tied in. Expose the fruit from the first to get a good colour. Though pale-coloured Peaches may not lack flavour, yet most people select the rosy-coloured Peach. A Peach which naturally puts on colour should be bright and rosy. Noblesse is not a high-coloured Peach, and we do not expect much colour, but even then the Noblesse in the finest examples puts on a faint tinge of crimson. If the borders are well drained it will not be easy to overwater. The mistake is generally made the other way, especially if the supervision is easy or careless. Ventilate a little when the sun strikes the house, and increase it from time to time as the sun moves onwards; close, and damp down or syringe at 4 o'clock. On mild, calm nights give ½ inch of air along the ridge.

Young Vines.

New houses may be planted now. The borders may not all be made at one time, but 4 feet or 5 feet should be made, a part of which should be inside. I prefer inside borders for very early or very late work; but abundance of water and rich animal top-dressings are necessary.

Window Gardening.

Fill window-boxes with the best plants at command. Ivy "Geraniums," especially pink and white, white and yellow Marguerites, scarlet "Geraniums," and blue Lobelias, with a few yellow and red Nasturtiums, form the chief furniture for window-boxes. They often become monotonous, but there are many ways of making a change with only the same materials. Whatever is used, have the painted boxes hidden as much as possible. Do not let indoor plants suffer for want of water. Weak stimulants may be given to plants coming into flower.

Outdoor Garden.

There is a large amount of beauty in the old-fashioned florist Tulips, and the same may be said of Tulips generally, both early and late, and as the bulbs are now very cheap a note should be made of it. I am pleased to find there is a prospect of the florist's Tulips coming to the front again. There is plenty of room in gardening for the Tulip fanciers, and I have generally found in association with Tulips the old florist Carnations, Pinks, Picotees, Pansies, Ranunculus, all of which are very beautiful. Depend upon it, the time is coming when many of our amateur friends will sigh for the refinement of form and clearness of colour which the old-fashioned florists thought so much of in their flowers. The weather has been very cold lately; we always have frosty winds in May more or less, but during the present season cold winds have been very prevalent. German Irises are very beautiful. Some of the newer varieties are very distinct; they will grow anywhere, and might with advantage be planted in large groups in the wild garden, associated with herbaceous Pæonies and other hardy things of like character which do not require frequent transplanting. Thin hardy annuals and sow more seeds for late blooming. Asters sown outside will come in useful for filling blanks late in the season. Dahlias may safely go out now. The Cactus and Pompon varieties are best for cutting; but get a collection of the real Cactus kinds, not what are termed decorative varieties. Plant out Stocks and Asters. Water and mulch newly-planted things.

Fruit Garden.

Take measures for destroying the larva of the Codlin-moth. London purple (a mixture of arsenic and lime), dissolved in water, sprayed over the trees, has given good results and has the merit of being cheap; but those who dislike dealing with poisons may try Sunlight-soap and water, the soap to be boiled in a copper to thoroughly mix it, and be used warm. One pound of soap will make about 10 gallons of wash strong enough to kill soft-bodied maggots and other insects, such as green-fly, etc. Strawberries on dry soils will require water if the weather continues dry. The plants which have been merely protected in cold frames will now be ripening their first fruits. Royal Sovereign is a good kind for this purpose, as it comes early and is hardy. It is well to bear in mind that young plants ripen their crop earlier than old ones, and if early runners are taken and well cared for they will produce a good crop the first season. We always force Strawberry runners first season, and if the same care was taken of the runners planted out the same result would be obtained. Give liquid-manure very freely to Figs in pots. There is no doubt that the best way to grow the early crop of Figs is to keep thorough control of the roots. Use the syringe freely to Peaches under glass to ward off the attacks of red-spider. Keep the cold winds out of fruit-house; there is nothing worse than a cold current rushing through young foliage.

Vegetable Garden.

Tomatoes if well hardened may go out now against south walls and fences and in sunny spots generally. Last season was a very disappointing one generally. The first part of the season was too dry, and the latter part so wet that disease set in and the crop was ruined. Open-air Tomatoes, except against warm south walls, are a risky crop anyway; but under glass with artificial heat, where the plants can be started early, Tomatoes pay better than Cucumbers, but neither yield the profit they did. The foreign Tomatoes are better than they were, and are now often sold by unscrupulous shopkeepers for English produce. Plant Scarlet Runners freely; they make useful blinds to hide unsightly objects. Planted in circular patches on each side of the kitchen garden path they form rather a pretty avenue, and they bear very freely in this way. Plant Brussels Sprouts and early Celery. North borders will be useful now for salads and many other things if the land has been well worked and prepared. Vegetable Marrows are a favourite crop with everybody. Plants raised under glass may go out now if sheltered for a few nights in any simple way till established. Marrow Peas planted now will be ready in August, and if the pods are all picked when ready they will continue bearing longer. Mildew on some soils is a terrible pest to late Peas. Cover a little deeper and mulch if the season is dry. Dust Onions with soot to keep off the Onion-fly, and give a dressing of nitrate of soda to hasten growth past the critical time. E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good result s.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from May 29th to June 5th.

With us and our neighbours bedding-out is now in full swing, and other work not absolutely pressing will have to wait till the planting is finished, which will be in a few days now. Fortunately the massing of tender exotics has been much reduced of late years, and when I look back over the last thirty or forty years I am lost in wonder how any rational person could have been so silly as to grub up most of the old-fashioned hardy things to make room for the two or three months' display in summer; but in taking back the hardy plants we are learning to discriminate, for there are weedy things among them which we do not want, and we are learning also that to grow a good collection of hardy plants well and keep them one's head must be screwed on right. For instance, I was much pleased last year with a large mass of Coreopsis grandiflora: all summer we cut sheafs of bloom from this batch, and we thought, so strong were they, that if not a joy for ever, they would last another year, and only a few cuttings were struck; but the old plants were so exhausted by flowering that most of them are dead. This shows the need of raising young plants annually of this and other plants which flower profusely. There are blanks also among the beds of that useful cutting plant, Scabiosa caucasica, and other instances might be mentioned, and it generally happens, with us at least, that more plants die during mild, damp winters than when dry and frosty, but the character of our soil may have something to do with this. Shifted on half specimen Azaleas which have done flowering and are beginning to make growth; shall keep them a little closer till the growth is finished, and then harden the foliage by ventilation, and in July place outside for a couple of months. Planted more Marrow Peas and white-seeded Runner Beans; these fill a gap in the kitchen up till the time the frost comes. We cannot grow the true Spinach in summer, so have to provide substitutes. The New Zealand Spinach and Spinach Beet are the most useful of these. Cauliflowers and Lettuces are grown on north borders now. The early Celery has been planted in the trenches, and the ridges between the rows planted with Lettuces. We always have very fine Lettuces on these ridges; the extra depth of soil seems to encourage growth. Planted Leeks in shallow trenches in which a little manure has been placed. Forked between the rows of Potatoes just coming through the ground; this suits our land better than hoeing, though for other work, especially killing weeds, the hoe is seldom altogether out of hand at this season. We do as little watering as possible, except to newly-planted things, trusting more to the hoe or mulch.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

691—**Bats.**—These creatures infest my house, and are to be found in large numbers in the roof. Can anyone recommend a means of exterminating them?—F. C. M.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

692—**Parrot Tulips unsatisfactory** *(J. A.).*—Due to the hailstorms which greatly affect Tulips. See note in Gardening, May 22, p. 170. Yours is a similar case.

693—**Variegated "Geranium"** *(A. Keens).*—The name of the "Geranium" is Mrs Parker, and therefore is not a new one; but it is interesting, and you should keep it.

694—**Use of road-dust** *(Tara).*—It would be of little use unless ground was heavy. Of course it would help, but is of such little value that it is scarcely worth collecting.

695—**Oleanders** *(Old Hastings).*—You do not keep your plants in sufficiently warm and moist a heat after the flower-buds are set. Unless you can remedy this the Oleander is a very disappointing subject.

696—**Unsatisfactory "Geraniums"** *(H. E H.)*—Evidently the plants have had too much water and been syringed when the sun was shining upon them. We should keep flowers picked off for a time and prune back long shoots.

697—**Forcing Seakale** *(R. P.).*—You must cut away flower-shoots. It is not too late to remove shoots entirely. Thin to two or three of the strongest; feed plants, if you can, with liquid-manure during summer weekly, or, failing this, with a good fertiliser, such as fish-manure or guano. Soot and salt in showery weather are good.

698—**Raspberry-canes unsatisfactory** (*L. K.*).—Cut down old dead canes to ground; leave three to five suckers, according to strength of canes. Manure freely now, as the new canes will need food freely and liquid-manure would do good.

699—**Lilac shrivelling** (*Old Hastings*).—We think it must be that you let the stems of one Lilac dry more than the other before placing in water. Always make a practice of cutting off a fresh piece from the base before putting any flowers into water.

700—**Piping for greenhouse** (*Spero*).—A very small radiating stove should be sufficient for your house, seeing it is so sheltered. By looking through our advertising columns you will see them offered in sizes suitable for almost any small house.

701—**Growing plants for a livelihood** (*X. P.*).—Unless you have a large amount of practical knowledge, we much doubt if a living could be made from three such houses. Market produce is got to such perfection now that only the very best commands a paying price.

702—**Roses eaten** (*E. M. A.*).—Your plants are attacked by one of the night-feeding weevils. Place a sheet of white paper beneath the plant in the evening. Later appear on the scene suddenly with a light, and you will find several fallen in their hurry to seek shelter.

703—**Sickly Peach and Nectarine-leaves** (*M. Lipscombe*).—The blister is the result of cold east winds on a tender foliage. It affects some varieties more than others. The only remedy is to remove affected leaves. The new growths will soon remove traces of it.

704—**Coleus** (*Gloster Reader*).—You could not keep Coleus in so cool a house through the winter. Be sure the water supplied is not cold or very hard. A fair amount is needed, and if you add 1 oz. of guano to a gallon of water and apply this three times a fortnight it will help them very much.

705—**Spiræas** (*K. V. N.*).—Probably the plants did not mature sufficiently last summer. As a rule, they seldom bloom so well a second season, but are more satisfactory after a rest from one season's forcing. Give plenty of water, and you may have a little bloom yet, while next year they should be grand again.

706—**Budding Roses** (*A. Guest*).—An illustrated article upon Rose-budding will appear early in July. This will give you much fuller hints than we can afford in this column, and will be in ample time for the operation. Your idea is good to a certain extent, but we would prefer properly prepared stocks to inferior Roses for foster roots.

707—**Propagating-house** (*Be*).—Your flow-pipe seems to us much higher than is necessary. Could you not utilise the return only, and so leave the top pipe for surface heat? If enclosed, the return would give a steady bottom heat and need no ventilators; but if you use the flow as well, ventilators would be safer, and afford some little surface heat.

708—**Peaches and Nectarines unsatisfactory** (*Dagmar*).—Your Peaches are badly mildewed, caused by cold draughts and extremes of temperature. You see, during the day by sun-heat the house is very warm, but the reverse at night. Use a mildew specific—Bentley's, of Hull, is excellent; failing that, a weak solution of sulphur. We are getting bad weather for trees in unheated houses.

709—**Plants for conservatory** (*G. M. E.*).—There are Zonal, show, and fancy Pelargoniums, Begonias, Azaleas, Abutilons, Marguerites, Cinerarias, Primulas, Ferns in variety, Heaths, Genista fragrans, and so many others that a column could not contain their names. Much depends upon whether you wish for a constant and fairly good display, or one of full beauty at a certain date

710—**Insects eating Rose-leaves** (*Carnations*).—There are a large number of pests which eat the Rose-leaves. The only way is to keep a close watch while they are prevalent, and especially to catch the first arrivals. A solution containing a few Quassia-chips will make the leaves distasteful; but young leaves are always forming, and the older ones grow beyond the size affected by the solution.

711—**Marechal Niel Rose in cool greenhouse** (*Gloster Reader*).—By all means feed your Maréchal Niel. Any rest to young growth now would be fatal. The principle of summer pruning is to secure a better matured and longer growth that will produce good flowers the following spring. W. Allen Richardson needs similar treatment. Mulch now, and help the plants with liberal applications of weak liquid-manure.

712—**Azaleas covered with Moss** (*N. A. F.*).—Rub off as much as possible from the stems, taking care not to actually scrape the bark. Next wash with a little freshly-slacked lime, but keep the whole plant and stems syringed to avoid any fast setting of the lime-wash, or it will not have a good appearance. Wipe this off again the following day, and if the bulk of the Moss does not come off at the same time repeat the operation.

713—**Changing colour of Hydrangeas** (*Novice*).—There is no certain method of securing the charming blue tint sometimes found in the Hydrangea. Iron in the soil and a little alum dissolved in the water supplied sometimes causes blue flowers; but it is most uncertain. We have known plants to produce the dull creamy flowers one season and blue the next, although no apparent alteration was made in the treatment.

714—**District for market-gardening** (*Inquirer*).—We should advise a district between Chester and Liverpool—certainly Cheshire. London, unless you know the trade thoroughly, is overdone, and better prices are secured in provincial markets. Worcestershire, also, is good for the Birmingham market; but in Cheshire you have Manchester and a host of popular places in addition to Liverpool, and the land is fertile. You would do well to see localities (soil also an important item) before deciding

715—**Peach and Nectarine bloom falling** (*J. H. Gay*).—Without specimens of trees we cannot give much help. From our point of view, we fear your trees are dry at roots, as, though the surface may be moist, the soil lower down may be dry. Another point is draughts, as in a house trees subject to cold draughts often lose their bloom, and the past few weeks have been very cold. We fear there is some fault; and are your trees clear of green-fly? This causes bloom to drop. You give very little information as regards culture.

716—**Starting a market-garden** (*Merlin*).—The question you ask us is an impossible one to answer. How can we know value of your produce? So much depends upon how grown, and season sold, and where sold. You would do much better to study prices in your district, and quantities put up as measures vary greatly in north and south. In the latter the things are often sold by measure; in the north by weight. You would get better ideas by a visit to Newcastle or any other large market.

717—**Good pink Rhubarb for market** (*H. Davy*).—We cannot advise private growers. Any good grower will supply it. It may also be grown from seed sown now in drills, but will take two years. Royal Albert is early and a good pink, also Paragon. It is now too late to plant; you will have to get roots for next winter's forcing. Plant for forcing in well-manured land, 6 feet apart in row, 3 feet between plants, in an open position; plant in deeply-dug land in February. Small pieces planted then will make good forcing material by winter if well treated.

718—**Flowers of Plum Victoria falling** (*Victoria*).—We fear a Victoria Plum will do very little good in your greenhouse; indeed, we would advise its removal and grow a fruit that would thrive. Why not grow a Peach or Nectarine, and plant early next November? A greenhouse is too warm and dry for the Plum. If you determine to retain it pinch back the shoots to 6 inches from the base, except those which are main shoots or leaders. But why not grow Tomatoes this summer? Remove useless Plum at once. Of course a Vine would do. Let us know what you decide and we will help you.

719—**Liquid-manure and Vines** (*R. H.*).—You may give most kinds of manure to Vines in liquid form, such as from cows, horses, or other animals, or guano. Bone-meal is a surface-feeder. Give a peck to 6 square-yards. Apply guano either as surface-dressing at the rate of 1 oz. to square-yard, or 1 peck to 20 gallons of water; water weekly. Air roots are not injurious. Bleeding only occurs when Vines are starting—not now. Yes, you may use a vaporiser when berries are the size of Peas. Use moisture more freely. For red-spider, fumigating will soon clear the pests. Do the work thrice rather than give a too strong dose once. Mealy-bug can only be got rid of by hand, dressing over parts affected with soluble petroleum or strong Gishurst. See "Garden Work."

720—**Treatment of Balsams** (*Melon*).—You can flower Balsams in almost any sized pot. It is merely a question of their becoming root-bound. Consequently, if you wish for large plants they must be potted on from time to time before root-binding takes place. A 3-inch pot is large enough at first, and we would not advise any larger pot than a 6-inch or 8-inch, the former preferred. You cannot grow them without a rich soil and careful watering. Strong loam, well-rotted manure, and leaf-mould in equal proportion makes a good compost for Balsams. After the first shift they need a moist and fairly warm atmosphere in a frame until warmer weather sets in. From that time expose to all the light and air possible upon favourable occasions. When the roots have filled the pots of their last shift give liquid-manure twice a week. Balsams must never know the meaning of a check, either from starvation or lack of water. You can generally give a good guess as to colours by the colour of their main stems when growing freely. A light stem will produce light-coloured blossoms, and a deep red stem flowers of a darker shade.

721—**Hybrid Anemones.**—I had a fine bed of "The Bride" Anemones last year, but this year they have dwindled to only a few flowers. Ought I to have lifted the tubers?—A. W. P.

*** *Lift the Anemones and store in a dry place until next October, when replant in a light rich soil.*

722—**Azaleas not succeeding.**—I have some Azaleas and they do not do well. I have them in a greenhouse. Would it be best to put them in a frame in cinder-ashes? In my house they get drawn and do not bloom well.—E. M. P.

*** *We think it more probable your Azaleas are not kept moist and cool enough at the roots. A very little drought will kill such fine and silk-like roots as those of the Indian Azalea.*

723—**Cut flowers for market.**—What would be the most profitable cut flowers to grow for market in a small unheated greenhouse, 10 feet by 8 feet, between June and November? I thought that a fine variety of White Comet Asters would pay as well as anything. If this is so, what would they probably fetch? Of course, I mean to bring them on when those grown in the open are over.—HENRY G. GRANT.

*** *There are not many flowers you can grow in so small a house and get any profit from marketing the produce. Some forward plants of Mme. Desgranges Chrysanthemum might come in best for the early part of the time mentioned. You could not grow Comet or any other Aster during June and November and have them at a time when not plentiful outdoors. Why not grow Tomatoes for home consumption?*

724—**Flame Tropæolum not succeeding.**—I planted some Tropæolum speciosum on a bank covered with Ivy. One night, when it had grown up about 14 inches, each shoot, of which there are three, was bitten through quite close to the ground. Would this be mice?—NOVICE.

*** *Evidently mice, which are mischievous pests. Trap them.*

725—**Sowing vegetable seeds.**—What distance apart should Broad Beans, Scarlet Runners, Sweet Peas, and Beet be sown, and about what depth?—L. K.

*** *Broad Beans, 2 feet in rows, 6 inches between plants. Scarlet Runners, 4 inches deep, 6 feet to 8 feet in row, 6 inches apart. Beet, 18 inches, 6 inches apart, 3 inches deep. Sweet Peas, 3 feet to 6 feet, 6 inches apart, depth 4 inches to 6 inches.*

726—**Ixia bulbs.**—Is it too late to plant Ixia bulbs in pots? What is the treatment, and will the bulbs do for other years?—A. M. P.

*** *August is the best month for potting Ixias. Give a light sandy soil and grow on steadily in a close frame.*

727—**Peach-tree under glass.**—I have a Peach-tree under glass. Will you give me the proper treatment of such? It is a fine tree, with about a dozen fruits on it and a quantity of young wood. What am I to do with the young growths, and temperature to keep up? Shall I syringe till the fruits begin to ripen? When to leave night air on?—MELON.

*** *It is impossible to give an article on Peach culture under glass in reply to a question. If you read "Garden Work" in this journal weekly you get full details. See page 140. You must reduce young wood; twelve fruits are a poor crop. Lay in good fruiting wood, but do not crowd. Syringe twice daily till fruits are nearly ripe. You must also keep house moist, and you may have air on at night now.*

728—**Kainit.**—I have been advised to use Kainit for the growth of Asparagus. Will you kindly inform me the best time of year to apply it, and how to do so—viz., if in a dry state or in water? Is Kainit good for Seakale? My Asparagus-beds were salted a few weeks ago.—WM. SHORT.

*** *Apply in winter when making beds or early spring when top-dressing. For summer feeding a stronger food, such as nitrates or fish-manure, would be better.*

729—**Mildew on Vines.**—You advise painting the pipes with sulphur. Will you please say the best thing to mix with the sulphur to form a paint, also should it be put on the pipes when they are hot or cold? Also, how long does the one painting last? If only for one night, I suppose a second coating would have to be given the next? Is it efficacious when the ventilators are open in the daytime, or is it only at night, when the house is closed, that it does good? Should the pipes be very hot or only slightly heated? Your kind advice will much oblige —IGNORANT.

*** *Sulphur should be put on the pipes in the form of a thick paste. The foliage must be dry. Heat pipes well to make a strong fume. Mix the sulphur with tepid water, and apply dressing at sunset. You must remove all other plants. One good dressing should suffice, and it is a safe plan for a few days to shade Vines after the sulphuring. Of course, house must be quite close. We would add that sulphur in inexperienced hands is not the best remedy; an overdose will ruin your foliage.*

730—**Carnation layers.**—I have some Carnations Mrs. Leopold de Rothschild, La Villette, Germania, and Duchess of Fife just coming into bloom in a cool-house. They are all in rather large pots. I wish, if possible, to get layers from these to bloom next winter. Is this possible? If so, what is the best way of layering, and how ought I to proceed with the young layers so as to bring them on? Or would it be better to buy plants from a dealer to flower next winter? Ought the bud on a Carnation-stem that is quite close to the main top-bud be pinched off?—NOVICE.

*** *If you refer to our issue of February 20 you will find full instructions regarding the propagation of Carnations. In the course of a few weeks we shall be publishing a note upon the layering of border varieties; but if you wish for winter bloom, spring-struck cuttings of the tree or perpetual-blooming varieties are best. There is no advantage in picking off any buds, excepting to throw more strength and weight into the remainder.*

731—**Use of peat-Moss-manure.**—Is peat-Moss-manure from a stable any use for making hot-beds?—L. K.

*** *Yes; it is good for hot-beds for many things, but useless for Mushroom-beds.*

732—**Sickly Asparagus.**—I send you herewith specimens of Asparagus which appear suffering from either frost or some pest. I have had over fifty head in same condition last week. Shall be glad to hear the cause?—CONSTANT READER.

*** *Your Asparagus has been injured by frost. Probably the land is exposed to north or east.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Phil.*—Orange-coloured flower is Gazania rigens; the other, Matthiola tristis.——*M. R.*—Hibiscus sp.; specimen too poor to determine which.——*Devon.*—Akebia quinata, Japan.——*M. A. Elton.*—The Grass is probably a Bromus or Dactylis, but cannot name without flower; the other is Menyanthes trifoliata.——*Roc.*—Euphorbia pilosa.——*Pinehurst, Ascot.*—Hieracium aurantiacum.——*X. Y. Z.*—1, Euonymus radicans variegatus; 2, Aërides odoratum; 3, Adiantum trapeziforme; 4, Gymnogramma tartarea; 5, Bertolonia sp.; 7, Adiantum Farleyense; 8, Send fertile frond; 9, Adiantum gracillimum; 10, A. cuneatum; 11, Acalypha musaica. Please send better specimens of the others, as only six should be sent at one time.——*Mrs. Cecil Parr.*—Chinese Apple (Pyrus spectabilis).——*R. W. C., Guernsey.*—Please send flower.——*C. E. Cunningham.*—1, Bird Cherry (Prunus Padus); 2, Wych Elm (Ulmus montana).——*Hillesley.*—Bird Cherry (Prunus Padus).——*A. E. D.*—1, Ceanothus Gloire de Versailles; 2, Double Lady's Smock (Cardamine pratensis fl.-pl.); 3, Saxifraga Cotyledon; Send flowers, please; 5, Balearic Sandwort (Arenaria balearica); 6, Saxifraga Wallacei.——*A. Daniell.*—Ornithogalum arabicum.——*Rock.*—1, Drymis aromatica; 2, Azara microphylla; 3, Vaccinium canadense; 4, Cassinia fulvida (Diplopappus chrysophyllus); 5, Eugenia apiculata.——*Shrub.*—1, Barbary Box Thorn (Lycium barbarum); 2, Berberis Darwini; 3, B. dulcis; 4, Cryptomeria japonica; 5, Juniperus recurva; 6, Thuja plicata.——*H. D. G.*—1, Specimen not in condition; 2, Ledum palustre; 3, Rhodiola rosea; 4, Lilac Charles X.; 5, Common Lilac; 6, Berberis dulcis; 7, Cotoneaster Simonsi; 8, Snowy Mespilus (Amelanchier canadensis); 9, Pyrus Eollwylleriana; 10, Juniperus virginiana.——*Hon. Mrs. S. W.*—Ceanothus azureus.——*Energetic.*—2, Santolina incana; 3, Aubrietia deltoidea; 4, Abutilon Thompsoni variegatum; others next week. The Solomon's Seal is Polygonatum. We do not think you will succeed with Ficus repens outside, although it may succeed in a cold-house.——*E. M. L.*—The leaf sent was a side leaf of a Canna. They need a warm temperature early in the year, very little root

disturbance when once started into growth, a compost of leaf-soil, loam, and a little sandy peat, plenty of water from the first, and help with liquid-manure when pots are full of roots.—*F. J. W.*—1, Ajuga genevensis; 2, Kalosanthes coccinea; 3, Pteris cretica albo-lineata; 4, Salvia patens; 5, Sedum Sieboldi.—*H. M. R., Fishponds.*—Your flower was much withered when it reached us. We think it is one of the greenhouse Vincas. Sow seed at any time now, and pot off into 5-inch pots next autumn. A compost of rich loam and leaf-soil is suitable, and you must give plenty of water while in full growth.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

G. V., Wolverhampton.—We know of no book upon the subject, and, as we do not believe in such arrangements, do not encourage them.

POULTRY AND RABBITS.

Fowls for winter laying (*Oaks*).—For laying powers generally, not only in winter, but throughout the year, I should prefer Orpingtons to Plymouth Rocks, for the simple reason that they are the breed most recently introduced, and thus have had less breeding for feather and other points noticed only in the show-pen. A still superior bird, especially so far as winter laying is concerned, is to be obtained by crossing any hen which lays an egg with a coloured shell by a cock belonging to a non-sitting breed. The pullets of such a cross are generally magnificent layers, especially when the parents are descended on either side from stock bred for this purpose. I should add that laying properties are as much a question of strain as of breed, and for this reason it is scarcely a good plan to compare breed with breed.—DOULTING.

Poultry farming (*G. W.*).—As stated in my last article on this subject, it is absolutely essential to success that a definite plan be decided upon before the poultry farm be stocked. The preliminary work must, of course, take some little time, and expenses soon mount up, so that some considerable outlay must be incurred before anything substantial in the shape of returns can be counted upon. To spend weeks or months, therefore, in making experiments or observations in one direction, and then to suddenly make a start in another, is practically to ruin the whole concern. In starting a business of this kind the requirements of the immediate neighbourhood or large towns within easy reach should be kept in view, because it is not unlikely that a scheme which will answer in most districts would be ill-adapted for this particular locality. If there be no special object to aim at I should expend the most of my energies in the production of new-laid eggs. These, if reliable in the true sense of the word, are saleable at all times, and there cannot be a doubt that the demand for them still increases, whilst it is equally a certainty that prices do not fall. To this it may be replied that in some counties eggs are a perfect glut, and can hardly be given away, but a little investigation will reveal the fact that such localities are either thinly populated, or the eggs are forthcoming only at seasons when they are very plentiful everywhere. My experience is as above stated, and for several years I have been giving this subject much attention.—DOULTING.

BIRDS.

MANAGEMENT OF CAGE-BIRDS.

THE SONG THRUSH (TARDUS MUSICUS).

THIS hardy songster is indigenous to our island, remaining with us throughout the year. Early in the spring, while the trees are yet leafless, its clear, loud notes may be heard, and, even as early in the year as the month of January, he will, on a mild day, pour forth his varied strain from his perch aloft. It breeds early in the season, the first nest often being commenced in March. This structure is generally built in a tall, thick bush, often an evergreen, as the Holly, Laurel, or upon the fork of a Fir-tree, and being a bold, familiar bird, will frequently rear its young close to the house, in Ivy covering walls in untrimmed luxuriance, or in bowers of Honeysuckle and Roses. The nest consists externally of bents, twigs, Moss, and dry clean Grass, closely interwoven, while within is a layer of cow-dung and particles of decayed wood, cemented and made smooth by a glutinous saliva. The eggs are of a light blue, speckled at the larger end with black, and are generally four or five in number. Both birds assist in the work of incubation, the hen, however, taking the larger share, the male feeding her while she remains on the nest. Young Thrushes are easily reared from the nest on bread and milk, lean meat cut small, and ant's eggs. The adult birds will thrive upon almost anything eatable, but the staple food for them may consist of Barley-meal or Oatmeal made into a crumbling paste, to which may be added lean meat, either raw or cooked, snails, and worms. Where snails are given a stone should be provided within the cage, upon which the bird will break the shell of its victim before swallowing it. Fresh water, both for bathing and drinking, should be supplied liberally, the cage be frequently cleaned out, and plenty of grit sand scattered upon the floor. In its wild state the food of the Song Thrush consists of the various species of snails, of which it consumes large numbers, also slugs, worms, and insects, adding fruits of various kinds, being very partial to ripe Cherries, and in winter feeds upon wild berries, those of the Mountain Ash being much sought after by it.

Bird's feathers (*Hy. Andrews*).—We fear that we are not able to help you much in this matter. The only bird that we know of that grows hair-like feathers is the Paradise Whydah, a native of the kingdom of Whydah, on the West Coast of Africa. The central pair of feathers in the tail of this bird are very long in proportion to the size of its body; the next pair of feathers are much shorter, and have a hair-like termination, or rather a prolongation of the midrib.

Death of Avadavat and Cut-throat (*Irene C. Copleston*).—You do not give any particulars as to the treatment your birds received; but they appear to have suffered from pneumonia or inflammation of the lungs, which is often brought about through exposure to a cold current of air. It is one of the most common complaints to which cage-birds are subject, and easterly winds in the spring are most trying to foreign birds. At this season they require especial care in being protected from sudden changes of temperature. The only chance of pulling a bird through an attack of pneumonia is to keep it night and day, for a time, in a high but moist atmosphere, lowering the temperature as the gravity of the attack subsides. If any of your other birds become prostrate, have difficulty in breathing, and on blowing back the feathers behind the wing you observe a redness through the skin, you may conclude they are suffering from inflammation of the lungs, and should treat accordingly. Although both the Avadavat Waxbill and the Red-throated Sparrow (Cut-throat) are fairly hardy little birds, our changeable climate is very trying to them; still, it is found that they do better in a well-constructed outdoor aviary than in the house.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

627.—**Dandelion wine.**—Four quarts flowers, 3½ lb loaf sugar, two Lemons to each gallon. Pour the boiling water over flowers, and let stand twelve hours and then strain off. Pare the Oranges and Lemons thinly, and put parings in the liquor and then boil twenty minutes, pouring over the sugar, stirring till dissolved. When luke-warm, add the Lemon and Orange-juice, and then work with a cup of barm. Let stand a week, and bottle in six months.—C. G.

—— Two quarts of the flowers with about half the stalks to 1 gallon of water. Boil twenty minutes, strain through a sieve, add 3 lb. lump sugar, the rinds of one Lemon and one Seville Orange. Boil twenty minutes more. When cool work with a little yeast. It ought to be left in the cask for six months before being bottled.—G.

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NOTICE TO ADVERTISERS.

In consequence of the Whitsuntide Holidays we shall be obliged to go to press early with the number of Gardening Illustrated dated June 12th. Orders should reach us as early as possible in the week preceding to insure insertion. No advertisement intended for that issue can be received, altered, or stopped after first post on Friday, the 4th of June.

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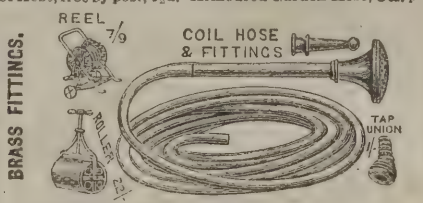
GARDEN HOSE.—Improved Rubber Garden Hose.—Cheaper than ever—2½**d.** per ft. Guaranteed New and Perfect, and to stand high pressure, 60 feet, with brass fittings, **13/6**; larger size, **16/-**. Hose Reels, **7/9**. Samples of Hose, free by post, 1½d. Armoured Garden Hose, **5d.** per ft.



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DIAMOND JUBILEE WAITERS.—Exquisitely engraved with life-like head of Her Majesty, surrounded by scenes illustrating progress from 1837 to 1897, made in "VERLIS," a white metal equal to silver, untarnishable, size, 12 inches diameter, 1s. 3d., post free; a pair for 2s. 3d. Marvellous value; an ornament for any sideboard.—THE MANUFACTURERS' AGENCY, 9, Augusta-st., Birmingham.

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DAHLIAS.—Cactus, 12 grand vars., including Lady Penzance, Mrs. Peart, B. Mawley, Delicata, Countess Pembroke, Countess Radnor, St. Catherine, Kynereth, Beauty of Arundel, and 3 others for 2s. 6d. 12 Pompones: G. Brinckman, Bacchus, Lelia, Crimson Beauty, Phœbe, Vivid, Pure Love, Ariel, and 4 others for 2s. 6d. 12 Show: Mrs. Gladstone, Duke of Fife, Mrs. Langtry, Mrs. W. Slack, J. Walker, Harrison Weir, Reliance, Jas. Vick, Pandora, and 3 others for 2s. 6d.—W. T. HADFIELD, Queen-street, Royton, Oldham.

GERANIUMS.—Jacoby, Raspail, Flower of Spring, 1s. 6d. doz. Ivy-leaved, Jeanne d'Arc, Amos, Mon Ami, Variegated, 1s. 6d. doz. Luck, new mauve-pink, and Her Majesty, new deep crimson-pink, very fine, 3s. dozen. Myrtles, strong, two years old, 6d. each; 5s. dozen. Carriage paid for cash with order. Address—SEATSTONE, Malvern Wells.

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A. & W. MUMMERY, Seedsmen, &c., East Hill, Ashford, Kent, beg to announce their annual clearance sale of Choice Flower Seeds. 30 packets, all sizes, usual price 5s., post free, 1s. 2d. Giant Winter Stock, pure white, 200 seeds, 6d., free.

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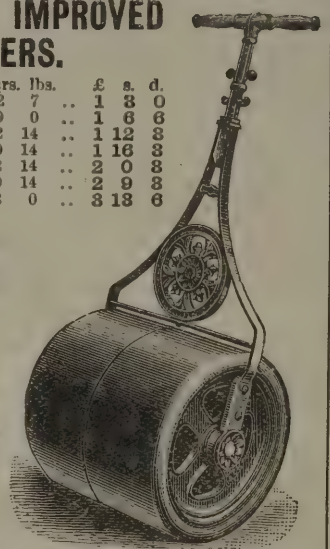
24 „ 24 ..	4	0	14	2	9	3
26 „ 26 ..	5	2	0	3	13	6



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GARDENING ILLUSTRATED.

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ROSES.

SEASONABLE WORK AMONG ROSES.

By the time these lines are in print the Rose season will be far advanced, and if we desire these charming flowers to develop into splendid specimens, as they undoubtedly will with proper attention, we must assist them in every way possible. Numbers of readers of Gardening Illustrated care little for exhibiting their Roses, but some who, if not already exhibitors, will doubtless have a desire to try their strength against their neighbours at some of the numerous exhibitions to come. Although my remarks will apply to a great extent to exhibitors and would-be exhibitors, nevertheless the main facts are equally important if the object be only to grow Roses for cutting or for the garden.

Thinning the growths.—Assuming that the plants have been carefully pruned and are growing freely, constant attention must be given so that the growths are not unduly crowded. The buds left at pruning-time have now burst into growth, and in many cases it will be found that not only has the eye thrown out its centre shoot, but side eyes have also started. These side shoots must be promptly and carefully removed so that the main shoot may have all the nourishment available. Also eyes will sometimes burst into growth at the base of the plant, and go crosswise in the centre instead of outwards, and by so doing cause a crowded centre, which is extremely harmful in limiting the free access of air and sunshine to the foliage of the main shoots. Therefore, if such shoots are found remove them at once. Tea Roses quickly start into growth—long before the bud shows colour. If fine exhibition flowers are desired, all these young shoots springing from the main ones must be pinched out so that the strength is concentrated into the blooms at the end of these main shoots. For garden decoration only this thinning of the Teas should not be done. These lovely Roses flower over a long season, and these young side shoots maintain the display.

Caterpillars.—These will now be very troublesome, and a sharp look out must be made for the rolled-up leaves. Pinch them between the thumb and finger two or three times a day, and promptly dispatch the unwelcome visitors, or they speedily ruin a promising bud.

Green-fly.—On warm walls these pests are already numerous. As it is not practicable to fumigate outdoors, the next best remedy is to syringe or dip the shoots in a solution of Quassia-chips and soft-soap. This is very easily made. Boil 4 oz. of Quassia-chips in 1 gallon of soft water for 10 minutes, then strain this liquor, and while cooling dissolve into 4 oz. of soft-soap. To this add another gallon or two of soft water. Syringe plants morning and evening, or dip the shoots into this liquor. Do not on any account syringe the plants in bright sunshine. Pure water should follow next day to cleanse the leaves. If this is faithfully adhered to little trouble will be caused from these pests.

Hoeing.—This is a most necessary operation, and I cannot too much emphasise its importance. Do not wait for weeds to grow before hoeing. The greatest benefit derived from hoeing is in keeping a good tilth to the land. Where such a tilth is maintained we can endure a dry season with equanimity. Again the hoe is most useful, and should always be used after watering or rain to prevent the ground "caking," as it surely will. A Dutch hoe is the best implement after the first general hoeing has been accomplished.

Watering and stimulants.—Hot days and cold, drying winds have caused the earth to appear very dry; but it cannot be so underneath, considering the amount of rain that has fallen this season. Unless the soil is of a very light sandy nature water will not be needed just yet, except it be for plants against walls. These wall plants, similar to fruit-trees on walls, must be liberally supplied with moisture. When we consider the drying up they receive when the sun beats down fiercely upon the wall, and also the little rain that reaches their roots, we cannot be surprised if they require abundance of moisture. A good mulching of dry soil applied after a good soaking is a good plan to adopt, as this prevents rapid evaporation. The plants will be much benefited by a syringing night and morning. After the great quantity of rain fallen this year in most districts stimulants must be applied to replace the large quantity of food that has been washed away by these copious rains. A dressing of good artificial manure, such as guano, will be much appreciated by the plants, and will quickly show it in increased vigour in growth and bud. Do not apply the manure until the buds can be felt at the end of the shoots. About 2 oz. of manure to a square yard will be sufficient. This should be well hoed into the soil. Then when the buds are about the size of marbles a good watering with liquid-manure will considerably strengthen them. Drainings from the cow-shed or stable will make a fine manure if well diluted. One of the very best fertilisers for Roses is night-soil, and it enters largely into the composition of some of the artificial manures sold. If this manure can be obtained the best way to apply it is to draw a drill between the rows of plants, then pour in the manure, having previously diluted it to about one-half its strength. Then cover in the drills, and the rains will take down the nourishment to the roots in a gradual manner; or, failing rain, clear water may be applied at intervals. Late-planted Roses will need watering, and care must be taken that they do not suffer for the want of it until well established. In watering Roses it should always be borne in mind that it is better by far to give them a thorough good soaking than driblets at frequent intervals.

Mulching.—If, as I said, the soil is kept loose little or no mulching is required, but if applied use some well-decayed short manure, but not so thick as to exclude air.

Briers for budding.—Standard Briers will require a thinning of the superfluous shoots. I generally leave four of the strongest, not too far apart, and as near the top as possible. It will sometimes happen that the strongest shoots are those quite low down. If so, cut the Brier down to these, for it is better to have a short, strong Brier than a weakly, tall one. Dwarf Stocks must be kept growing freely by constant hoeing. Beyond this nothing further is needed.

Maiden Rose plants.—Constant attention must be given to these so that high winds do not blow them out. A stave must be tied on to the Standard Brier and a stick placed against the dwarf ones. Keep the shoots frequently tied to these supports. W. E.

Rose-leaves turning brown.—All my Rose-leaves are turning brown, as enclosed. The trees are exposed to high, cold winds. The buds, too, show signs of decay. I enclose specimen. What ought I to do?—Nemo.

*** We have received no box of leaves. Please send again and give the same *nom de plume*, when we will reply at once. It may be your plant, if in pot, has been very dry; but we are inclined to think the recent severe frosts early in the mornings are the cause should your plants be growing in the open. You do not say which, and unless we have full details it is a difficult matter to decide.

Tea-scented Rose The Bride.—This Rose is most lovely as a pot plant. It is a white sport from that superbly-formed Rose, Catherine Mermet. Compared to Niphetos, for instance, which has for a number of years been a popular white flower, the Bride is so much better in shape as well as size and substance. It is also an easy grower. The foliage is handsome and plentiful. I have noted several nice specimens of this Rose lately. One, a tall plant that is growing in a large pot, and has not been pruned back at all for some years. This was bearing about two dozen charming flowers. Another, in an amateur's conservatory in a small pot, had four splendid blooms open at one time. The delicate texture of the petals of Tea Roses is brought out more perfectly under glass. The least damp or rough wind damages them. As pot flowers they are indeed worth any amount of pains being bestowed upon their culture.—H. S.

Pot-Roses after flowering.—Roses that have flowered should receive at once a top-dressing of loam and some good artificial manure previous to plunging them outdoors for the summer. Those plants that have flowered twice should be repotted at the end of June or July. If no room can be found for them indoors they may be plunged in a cold-pit, or outdoors in full sunlight, so that their wood may be well ripened. In the case of Tea Roses I prefer to keep them under glass until July. If we desire good Roses in winter and early spring the plants must be looked after in summer. A watering once a week with weak liquid-manure must be given. The food should be changed by giving liquid made from cow-manure one week, the second week some well-diluted liquid made from sheep-droppings, and the third week some liquid made from fowl-dung. By thus varying the food supply the best possible results are effected. —W. E.

THE KITCHEN GARDEN.

SUMMER LETTUCE.

I think, no matter what the weather may be, it is well to rely upon Lettuces allowed to stand where sown in preference to transplanted ones, as in transplanting there is a great check, and the plants take fully fourteen to eighteen days longer than when sown and grown in the same spot. I admit by transplanting one may get a succession crop. It is not always convenient to sow in the place where the plants can remain, but it is necessary to do so in seasons of drought. By this mode of culture the cultivator need not fear a break in the supply if sowings are made every three weeks from April to August. At no season are Lettuces more appreciated than in hot weather; hence the necessity of frequent sowings, timely thinning, and rapid growth. Only a small quantity need be sown, the thinner the better, as now there is no fear of bad germination and there is less thinning. I find it an excellent plan at this season to sow between the recently-made rows of Celery. I make my Celery-beds on land cleared of the autumn-planted Cabbage, as I do not like the Cabbage-plants long on the ground after cutting. Many leave them for a crop of shoots, but I prefer quickly-grown spring plants, which produce small, compact heads. If double rows of Celery are planted, there is room between for two rows of Lettuce, and this is sown thinly in the recently-dug, thrown-up land, and though light and porous, it is surprising how well the plants thrive if thinned early and kept watered. Lettuces delight in a cool, rich root-run, and very fine produce may be secured by growing on old rubbish heaps or decayed manure. A north border will be a good place for a late lot. Watering should always be done in the evening, and a mulch of spent manure over the surface close up to the plants will be of great service In selecting summer varieties of Lettuce it is well to choose robust growers, as these stand drought better. W.

Chou de Burghley in winter.—The value of the above is not so much in its novel appearance or growth as in the delicate flavour of the heads during the first three months of the year. Those who sow late for that purpose will find this vegetable a valuable addition to the none too long list at the season named. Of late years I have usually sown it with the late Broccoli and find it more valuable. I admit it is not so large as from earlier sowings, but very large heads are not required in many places, and the medium-sized, compact ones are very good, as the flavour is so delicate. Planted in rows 2 feet apart, the growth is rapid all through the autumn, and the plant is very hardy.—T.

Setting Tomato blooms.—A simple means in aiding a good crop of fruit is tapping the trusses of flower to scatter the pollen. This is done every day about noon. Some growers do not think any artificial assistance needful in bright weather, but by giving abundance of air enough is done. I have, however, observed differently. Even in the hottest weather the crops have been less if such a small matter, as it appears, becomes neglected. A stick about 2 feet long is used, and at the end I tie a bit of cotton wool. This prevents damage to the skin of the plants. A smart tap is then given to each near where the bunches of bloom are, and the pollen may be seen falling from the blooms in dust-like form. I am certain the item is one of those small details which make all the difference between success and failure.—H.

Late Savoys.—In many gardens a quarter of late Savoys is valuable. Many plant this vegetable too early, and with the ground in such a warm state growth will be so rapid when the earth gets suitable moisture, that the early sown plants will be in when there is a wealth of vegetables. If a sowing is made on a cool north border and the seeds sown very thinly, these will make nice material for Christmas and January cutting; indeed, they will keep much later. I am aware many grow the useful Colewort Cabbage for the season named, but I find the Savoy hardier. For sowing at this date such kinds as Dwarf Vienna, De Vertus (a very late variety), or Dwarf Green Curled, and Drumhead, a large variety, are valuable.—G.

CELERY AND ITS CULTURE.

The variety illustrated shows a good type of Celery, and there are many like it; but let me advise those who require late kinds to grow a medium variety, and a red Celery is hardier than a white one. On the other hand, one can get size with earlier produce, and a white is superior as regards earliness. I am inclined to think that white varieties of Celery run sooner than red, and some have less flavour; but this is purely a personal matter, and need not be enlarged upon. To get early Celery one must sow in heat, and to do this avoid thick sowing. I have frequently seen as many plants in a 12-inch pan as would plant an acre of land. Here is the first evil. It is not that so much harm is inflicted whilst the plants are very small, but as soon as they form the leaf overcrowding occurs. It may be thought that this is a matter which will soon right itself when

Celery Solid White. From a photograph sent by Mr. F. Parren, Northgate-street, Canterbury.

the seedlings are planted. Such, however, is not the case. The plants may in a measure recover, but are much less satisfactory, and are liable to disease. Another important detail is starving of plants, a term used in a broad sense, as the cause is often unknown to the cultivator, and earlier plants are more subject to it than later ones. If planting out is delayed there is starving, and these plants being gross feeders soon feel loss of moisture. Many evils follow, the greatest being hollow stalks, thick or woody growth at the base, and what is termed running or bolting to seed. Running is frequently caused by lack of moisture, and in a young state plants should never be dry at the roots; indeed, from the time the seed germinates there should be ample moisture, continuous growth, and manure. I grant the latter is not much needed at the start, but as growth increases it may with advantage be given in a liquid state. It mostly happens that one sees fewer failures with plants not raised in strong heat, but grown as naturally as possible. This shows that when forced plants need more attention. Another point in culture often overlooked is decay of the plant just when ready to lift or fit for table. This in most cases is the cultivator's own fault, and caused by too early moulding up that stops the growth of the plant, and fresh air being out of the question, decay follows. I do not say amateurs in this respect are more to blame than others, as it is a common failing, and a plant the growth of which is checked, must perish.

Earthing up should be gradual, and plants required to keep should be left as late as possible. Frost does not injure a well-developed leaf, but plants blanched in a young state. Celery does not need the mass of rank manure often placed at the root. It is far better to give it in smaller quantities and rely upon food in a liquid state as growth increases. I have seen plants so surfeited by rank manures that they fail when half grown on account of the plants having to take their chance. It is not culture to overload them at the start leaving them to chance afterwards. Moisture and food in liberal proportion are necessary as growth is made. W.

A FEW GOOD HARDY CLIMBERS.

Following on with our lists of plants, we now give a few climbers for various aspects. For a north aspect, Cratægus Pyracantha gives us a good evergreen with bright scarlet berries during late autumn and winter. Cotoneaster Simmondsi is another evergreen with red berries. Hedera Rægneriana and H. canariensis are two good Ivies, while H. maculata major is about the best of the variegated section. The pretty Ampelopsis hederacea is not evergreen, but one of the most useful. Among Clematises, flammula and montana are about the two hardiest, and are very pretty while in growth and flower. For an east aspect we may use such hardy Roses as the White Ayrshire, Gloire de Dijon, and Cheshunt Hybrid, Cydonia japonica, with its bright rose and crimson flowers through February and March, the Evergreen Rose (Félicité-Perpétuée), Jasminum nudiflorum, with its deep yellow, star-like blossoms, produced while winter is still with us, and also the whole of those mentioned for a northorn aspect. Ampelopsis Veitchi and the Virginian Creeper, as well as the whole of the Ivies, may be grown in this position.

In a western aspect we can use a few of the more tender Ivies, such as the beautiful golden variety named Hedera chrysophylla and Hedera madeiriensis variegata. Clematises Jackmani (deep-blue), J. alba (pure-white), and the lanuginosa section, of various colours. Jasminum revolutum, a yellow, summer-blooming Jasmine, is very pretty, also the old sweet-scented white variety, J. officinale. Both the blue and white Wistaria sinensis may be used, also the more hardy of our climbing Roses; but the last are apt to suffer from strong winds unless partially sheltered.

In a southern aspect the pretty Hedera digitata is a grand evergreen, also a beautiful crimson-foliaged plant is Berberidopsis coralina, and a grand variegated evergreen Honeysuckle is Lonicera brachypoda aureo-reticulata. Akebia quinata gives us a bright red and purple; Smilax aspera, variegated foliage and scarlet berries; Kerria japonica, a grand show of deep orange blossoms; while all climbing Roses may be used, as well as the whole of the Clematises.

Of course, it will be understood that the whole of those named can be used in a southern aspect, if we except the beautiful Flame-flower Tropæolum, which prefers a north-eastern aspect. Convolvulus, Nasturtiums, Cobæa scandens, Eccremocarpus scaber, and others generally raised from seed scarcely come under the heading of plants in these notes, where we are anxious to give some slight guide to suitable permanent subjects.

Corbularia tenuifolia.—This is a neat little member of the Hoop-petticoat section of Daffodils. Its chief claim to notice is the comparatively small size of its blossoms, the leaves being also smaller. For growing in pots or pans in the alpine-house or for edgings in the winter garden it would produce a pretty effect in a mass.

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GARDEN PESTS.

Insects (*J. W. Chapman*).—It is always rash to try and name insects from descriptions in letters, but I imagine from what you say that the worms are wireworms. They are frequently very common in land which has recently been broken up from Grass. They may be attracted from the plants they are attacking by burying small slices of Mangolds, Turnips, Carrots, or Potatoes near them. Each bait should have a small skewer stuck into it to show where it is buried, and should be examined every day, and the wireworms destroyed. Small pieces of Rape cake buried just below the surface will also attract these pests. If you will send up some of the worms I will tell you whether they are wireworms or not.—G. S. S.

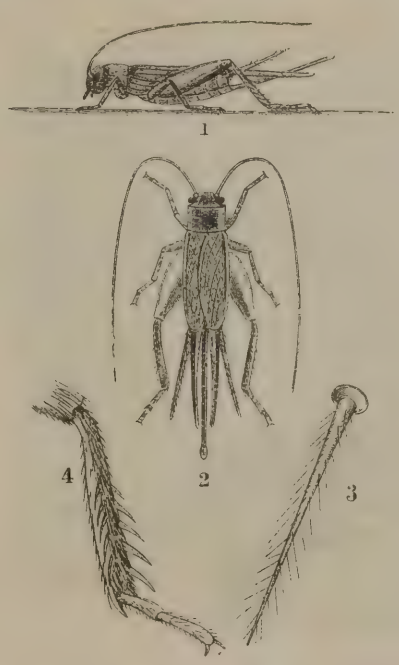
Willow-leaves eaten (*A Subscriber*).—If you would send me some of the caterpillars I should be better able to advise you, but you might try syringing with the extract from 5 oz. of Quassia-chips, and 6 oz. of soft-soap, well mixed, and added to 5 gallons of water; or 1 lb. of soft-soap very well mixed with nearly ¼ pint of paraffin-oil. This mixture must be kept well stirred, or all the oil will float on the top.—G. S. S.

Names of flies (*J. Coulsero*).—The flies you sent belong to the genus Bibio, and are, I believe, the St. Mark's-fly (B Marci). Their grubs feed on the roots of various plants, but the flies themselves are harmless.—G. S. S.

Begonia-leaf (*I. Balmain*). — The insect you enclosed is the caterpillar of a moth, one of the Geometridæ, but apparently it is not full grown, and I cannot say to what species it belongs. The caterpillars of this family of moths are very injurious to the foliage of plants.—G. S. S.

THE COMMON CRICKET (CRYLLUS DOMESTICUS).

This insect is among those which are best known in this country as far as reputation goes, but I fancy that few persons comparatively know it by sight, though its chirp is well-known to everyone. This is perhaps not much to be wondered at, when one remembers how seldom it makes its appearance during the daytime. It would probably not be so common as it is were it not for the superstitious ideas that many persons have about them. They would have one believe that it is very unlucky to kill one, and that to hear one chirping is a favourable omen. However this may be in kitchens, etc., where if the food is properly protected, they cannot do much harm, it is very certain that few, if any, gardeners can tolerate their presence in greenhouses and similar places, as they are sure to bring bad luck to any plant they may take a fancy to. I am not aware that they in any way confine their attentions to any plants in particular; they usually, however, attack soft-wooded ones, or young seedlings. Happily for the gardeners, in this country they do not appear in the enormous swarms that their near relatives the locusts do in less favoured countries. Locusts, fortunately, are not natives of this country, but specimens are occasionally found here. These have probably been introduced in some chance manner. A swarm is said to have visited this country in 1746, but fortunately they did not breed here. With the modern system of hot-water pipes instead of flues, crickets ought not to be so common as they are in greenhouses, for they dearly love warmth and dryness, both of which they obtained more easily in the cracks of the brick-work of the old-fashioned flues. Among the most useful of the many devices for destroying this insect are the following: Keating's insect-powder is most efficacious if it is scattered about in their haunts and blown into any cracks or crevices in which they hide, with the appliances sold for that purpose. I have twice entirely freed kitchens from them by using the powder every evening for a fortnight. Though they are so fond of dryness, they are very thirsty insects, and gallipots or other vessels partly filled with water, and with pieces of lath so placed that the crickets can crawl up to their edges, are very useful traps. Beer and sugar may be used for those not of the teetotal persuasion. Quarter-pint of treacle, 1 oz. of arsenic, and 2 oz. of bran, placed within their reach on pieces of slate or glass, will prove a deadly bait; arsenic may also be mixed with pieces of roasted Apples. The use of these traps and baits must be persevered with for a week or more if the extermination of these insects is intended. Gas-tar or carbolic acid poured into the places in which they hide will drive them out. All cracks, etc., should be filled up with cement. Crickets belong to the same natural order as the grasshoppers, locusts, mole-crickets, and cock-roaches, and, like them, do not undergo such well marked transformations as many insects do, for the young, when first hatched, are miniature likenesses of their parents, except that they have no wings; as they increase in size they moult several times, and then the wings appear in a very rudimentary form; when they next change their skins they come forth as mature crickets. They take advantage of any crack or hole in walls or woodwork in warm situations, and by enlarging them form burrows or galleries, in which they live, as warmth is so essential to them. Where the mortar is soft enough (and I am afraid most mortar is nowadays) they will work up to within a few inches of a boiler or oven. In dwelling-houses they are nearly always found near fire-places. In warm summer weather they sometimes take up their position in garden walls. The chirping noise made by these insects is produced by the insect rubbing its wing-covers together. These, as their inner edges, are finely notched, and the rubbing together of these roughened edges cause the



Figs. 1 and 2, Female cricket (slightly magnified); 3, one of the posterior appendages (magnified); 4, third tibia or shank (magnified).

sound. Crickets chirp on a very high note, though, perhaps, not on such a high one as grasshoppers, which is so high that many persons, though not otherwise in any way deaf, are quite unable to hear it. It is a curious fact that only the male is able to make this chirping, the wing-covers of the female not being provided with the necessary roughness; this does not, however, prove that the females are obliged to practise the unfeminine habit of silence, but that if they do make any sounds we are unable to hear them. The house-cricket is about ⅝ inch long, but it looks much larger, as its wings project about ½ inch beyond its body, and the two long hairy appendages at the end of the body are about ½ inch long. The entire insect, except the eyes, is of a pale, dull yellowish-brown colour. The head is furnished with a pair of very long feelers, which are composed of a great number of joints; the eyes are black and rather prominent; the jaws are strong and toothed. The upper wings are not longer than the body. They are strongly veined and somewhat horny. When not in use they are folded up like a fan. At the end of their bodies there are two long tapering hairy organs which are supposed to act as feelers, and are doubtless useful as such when the insect moves backwards in its burrow (Fig. 3). The legs are strong and hairy; the hindmost pair are formed for leaping, and are long, with remarkably robust thighs. The shanks (Fig. 4) are armed with two rows of spines; the feet are composed of two joints.

G. S. S.

*** *Boxes containing insects of any kind for name or advice upon should be labelled "Insects."*

HOUSE AND WINDOW GARDENING.

FLOWERS FOR THE DINNER-TABLE.

There are no flowers more useful for cutting for the dinner-table than Sweet Peas; and many of the newer varieties are very beautiful and suitable for this purpose. Many people know them and grow them, but for those people who do not I should like to write a few lines. Dorothy Tennant is a very rich shade of rose-mauve, and one of the loveliest of all. Countess of Radnor is a pale heliotrope; and these two arranged in some light foliage, such as Asparagus, make a very pretty table decoration in glass vases, with a soft silk table centre beneath them, either in some shade of heliotrope or pink. If a deeper shade is wished for amongst them, Captain of the Blues harmonises very well with them. The grey shade of Southernwood is not amiss as foliage, and, in my opinion, looks well with them. But one kind of Sweet Pea must be put in a vase, and another in another, and the vases arranged so as to form a contrast here and there. If the Peas are all mixed together the effect is spoilt.

A study in shades of pink can be made beautiful in the same way by using Lady Penzance, a very pretty shade of full pale rose, Venus, a lovely very pale pink, and Firefly, a very good shade of red. Firefly and Orange Prince, an orange shade of pink, and one of the prettiest, go very well together; and Splendour, one of the freest-growing and flowering of all, with large flowers of a bright pink, is very pretty by itself. It is not so new a shade as the others, but it looks very well indeed if the table is arranged with vases of it and there are plenty of them.

White Sweet Peas, it need not be said, are lovely amongst green foliage, and of these Blanche Burpee and Mrs. Sankey are both excellent, having large flowers and producing them freely. White Sweet Peas look very well in plain glass vases, with green silk under them, and they look equally well also with white; but if white is under them it is best to arrange a fringe of light Ferns, Moss, or leaves round the edge of it, dividing the centre-piece from the table-cloth. Primrose is a shade of pale, creamy-yellow, and if a fuller shade of yellow is put under them they look well and effective for a change.

It need hardly be said that in arranging Sweet Peas the great thing is to do it lightly, and although sufficient must be put in each vase to give it a good "colour" effect, too many destroy the beauty of the arrangement altogether.

The flowers off Horse Chestnut-trees, boldly arranged with their own leaves in glass vases of different heights, are wonderfully effective on a dinner-table, and I think they look best with a green silk centre underneath them, and the centre vases high, working down to lower ones at the edge.

If old Spiræa-plants which have become worn out for greenhouse use are planted out in any spare bit of ground, they will be found very useful in the spring for their foliage, and the white poeticus ornatus Narcissus, which flowers earlier than the other poeticus Narcissus (and, so far as my experience goes, more freely) are very pretty arranged with these young shoots of Spiræa, which are then a pale greeny-brown, in brass vases. Of course, it need not be said that brass candlesticks look better than silver ones with this arrangement. The candle-shades which look best with it, I find, are white lace or muslin ones, with green ribbon ties and bows.

People who wish their Daffodils to flower year after year ought not to cut their leaves, and the lovely pale green leaves of some of the Hemerocallis (Day Lilies) are very beautiful used with Daffodils instead of their own. Indeed, they are a much prettier green in their young stage, which they are in at the time the Narcissi are in flower, and they so nearly

resemble the broad-leaved Daffodils that they are very valuable for this purpose. They are plants which increase rapidly, and I have a good-sized patch of Hemerocallis fulva, which I keep entirely for foliage for my Daffodils. I also have good-sized patches of the following Daffodils for cutting purposes (and very useful I find them in April and May); albus plenus aurantius, commonly known as Eggs and Bacon; aurantius plenus, commonly known as Butter and Eggs; princeps, Horsfieldi, Emperor, Empress, Barri conspicuus, Sir Watkin, Figaro, ornatus poeticus, Poeticus of gardens, and the double white poeticus (Gardenia-flowered, as it is called in catalogues). Of these, princeps, Sir Watkin, Horsfieldi, and Empress flower the first, then Emperor, ornatus poeticus, and Figaro, and then albus plenus aurantius and aurantius plenus, Barri conspicuus, poeticus, and the double poeticus are the latest of them, the double poeticus being often in flower at the end of May, and the last of all the Narcissi to bloom.

Most people find that Roses are stiff flowers to arrange in water, and for dinner-table decoration they certainly err on this side. Yet how seldom one sees Roses done justice to, and what pretty effects can be obtained by making use of one or two kinds only and using them in profusion. For instance, what can be prettier, sweeter, and more simple than low white china baskets or vases filled with Coquette des Blanche, with their own leaves; or with the Rugosa Rose Mme. Georges Bruant, which flowers so freely, soon forms a large bush, and is so pure a white? Then a mixture of La France and Duke of Edinboro' Roses, if only those two kinds are used, is lovely, especially with a very pale pink silk centre under them. The favourite old Gloire de Dijon Roses look wonderfully pretty too, if they are used with some sweet-scented "Geranium" leaves and Maiden-hair Fern, and for anyone who is fond of a yellow effect a piece of bright deep yellow silk laid under them shows off their pale cream shade well and harmonises with it.

It is almost foolish to remark that Lilies of the Valley, used in profusion with their own leaves, make a lovely dinner-table arrangement; but, considering how much everyone likes these flowers, it is curious how few make really big beds of them to pick from. Yet they spread quickly, and when once planted, if well top-dressed, they last for years undisturbed. The blossoms of the double-flowered white Cherry-trees are very pretty used with their own little leaves, and laid in sprigs on a pale green satin centre; but this is one of those arrangements where the flowers are out of water, and, personally, I am so fond of flowers I cannot feel quite happy when I see them used thus, and know that they will be thrown away before they have begun to fade.

A good patch of ground given up to the branching Ten-week Stocks is very useful for cutting purposes, and these are one of the few flowers I care for in the middle, as I call it, or, otherwise speaking, mixed together in all their numerous shades. Shirley Poppies are very graceful and pretty used in the same way, and so are hundreds of other flowers, which I will perhaps say something about some other day.

Mrs. Robert Jocelyn.

FERNS.

TROPICAL HARD FERNS (BLECHNUMS).

I shall not deal in the present article with the hardy Ferns, such as the well-known Blechnum Spicant, but with the more tropical kinds, to which the one shown in the illustration belongs. Of the many species and varieties in cultivation, many of which would thrive under Wardian case treatment, some are suitable for cool-house culture, but I do not remember ever seeing in good condition a Blechnum treated as a window plant, and certainly B. brasiliense would not, as it likes strong heat and moisture, although it lives and grows fairly well in the greenhouse during the summer months, but then it presents rather a starved appearance compared with the growth made in a higher and moister atmosphere.

Blechnum occidentale. From a photograph by Mr. C. Metcalf, Mill House, Halifax.

B. occidentale will thrive well in a Wardian case, and if the plant is in unusually good health one cannot but admire the intense vivid green of the fronds and the continuous broad lines of rich brown sori, which are both conspicuous and pleasing. When grown in heat and the plant is strong, the fronds will grow from 18 inches to 2 feet in length, but with many they will in all probability scarcely ever exceed a foot in length; this, however, will not detract in any way from the beauty of the plant. The fronds are rich deep green in colour. It is widely distributed throughout South America and the West Indies.

B. occidentale trifurcatum, a form from Dominica, is similar in growth to occidentale, but the ends of the pinnæ have a flat, three-pointed crest. It is exceedingly handsome, but I believe somewhat rare in cultivation.

B. campylotis.—This is said to be the same as occidentale, but as a growing plant it is very distinct. The fronds are much narrower, more slender and graceful. When strong the fronds vary from 18 inches to 2 feet in length by about 2 inches in breadth. Whether a species or a variety, it is extremely handsome and cannot fail to please.

B. hastatum is a pretty small kind from Chili. When grown cool it forms pretty tufts, and would be a most desirable plant for a Wardian case. The fronds are of two forms, from 5 inches to 7 inches or 8 inches high, the barren ones being the shorter. I shall, however, close these short notes on Blechnums suitable for a Wardian case with two very pretty kinds, totally distinct from the others and slightly more delicate in constitution.

B. Lanceola is a slender creeping plant with an erect stem; the fronds are usually simple and from 3 inches to 4 inches broad, tapering towards both ends; the colour is deep green. For a long time this simple state of the plant only was known, but when grown in stove-heat it does sometimes develop a pair of small obtuse pinnæ just below the large medial one. It is a native of Brazil and Peru.

B. longifolium.—This is a somewhat similar plant to the previously named one, but is more robust. The fronds, usually 6 inches to 1 foot high, with two or three pairs of side pinnæ, are rich deep green in colour, and bear a line of sori on either side of the mid-rib. It comes from Brazil and the West Indies.

Blechnums are usually of robust constitution, and do not require much care in their cultivation, provided they have the drainage in good working order, as they like an abundant supply of water; nevertheless, drenching with water overhead does not conduce to their beauty or their health.

Potting Maiden-hair Ferns in baskets.—Can you or any of your readers tell me how I should pot Maiden-hairs for hanging up? I want to make round plants of them. And will the more delicate varieties grow well in this way? I believe they are trained in this way at Kew Gardens.—Missy Baba.

*** This is by far the most pleasing and showy way of growing many Ferns, those with drooping fronds never showing to better advantage than when in suspended baskets or pots. The Maiden-hair (Adiantum cuneatum), also such Adiantums as Moorei, caudatum, and gracillimum may be used; but so many other Ferns are equally, if not more, suitable that we name a few in connection with our correspondent's query. Among Aspleniums A. vipiparum and longissimum should not be missed, Davallia pallida, D. dissecta, Nephrolepis exaltata and N. davallioides, and especially Gymnogramma schizophylla gloriosa, despite its formidable name, is most useful in this form. You can use baskets of galvanised wire or wood, shallow pots, or deep pots with ample perforation; the wire baskets are lightest. Place a little Sphagnum Moss around the inside, then the coarsest portions of the compost, and pot up in the ordinary way. The same compost as generally used for Ferns will be equally suitable in the suspended baskets or pots. They must have plenty of water, never losing sight of the fact that they are in the driest position and the whole of the plant and roots exposed. If some of the trailing Selaginellas be placed around the sides a much prettier effect is gained with varieties which do not droop very low. Size of pot or basket is almost immaterial. We have seen them grow from 4 inches to 36 inches or more over. The method of potting and culture is the same in either case.

579. — **Peppermint.** — The culture of Peppermint is very simple. Young shoots should be taken in April or May when about 3 inches or 4 inches in height by inserting a sharp knife in the ground about 2 inches deep, when a small portion of root will be attached. These should be planted in rows about 2 feet apart and about 18 inches between the plants. The plant should not be cut the first or second year, but the third and succeeding years a good crop may be had. The time for harvesting varies, but usually about the end of July or August. After it has been cut the beds should be cleared of weeds and manure spread over them and, where it is possible, slightly forked in. There are acres of it grown in the neighbourhood of Mitcham and Beddington, near London, with distilleries on the farms for distilling it into oil.—A. E. C.

CHRYSANTHEMUMS

SEASONABLE WORK.

The principal work now besides watering is shifting the plants into larger pots as they require it. The most forward will be ready for the size in which they are to bloom; and by doing them gradually we may finish the whole by the middle of June. This is a very good time for potting to be over; we shall then have about a good four months for a gradual and perfect growth. A useful size pot for Chrysanthemums to flower in is that known as the 16—or 9 inches in diameter. Some of the chief growers of exhibition blooms use larger; but the amateur cultivator generally hardly expects plants or blooms quite up to so high a standard as is obtained by just a few cultivators. The pots should be clean. They should also be well drained. This does not mean that a large quantity of potsherds may be put into the bottom of the pot, but that it may be placed carefully. One large piece over the hole, then just a covering with smaller bits; on this may be placed a covering of the rougher portion of the compost, and drainage will be perfect.

Soil is an important item. But a mistake may easily be made by making this too rich, especially in compounds known as fertilisers. We require nice, sweet, turfy loam for the greater portion. This is sometimes costly and difficult to obtain. The top of meadow land where the earth is rather heavy, or from hillside where the Grass is kept down by cattle, provides an excellent material, usually full of fibre and of a yellow colour. From the sides of roads, again, one may often get very good loam, and, in this case, with abundance of grit in it. It is well to have it cut a few weeks before required for use, so that the Grass may not be green. Chop or break it up, but not too fine, nor should it be sifted. We want the fibre intact. Loam, then, should form two-thirds of the whole of the compost. The other portion may be thoroughly decomposed manure, dry, so that it may be passed through a sieve, or leaf-mould, or, better still, the two mixed. To each bushel of the soil add 2 lb. of bone-meal, and if the loam be of a very retentive nature use a little old brick-rubble or charcoal to keep it open. This compost must be turned about several times, and be used in an even condition—neither wet nor dry.

This preparation of the plants that are to be shifted should always be done. A good soaking of water is necessary an hour or so before; then when the ball is turned out of the old pot there is a chance of removing the same without any roots clinging to the sides. Thus a serious check is avoided. Have a stout stick, wedge-shaped at one end, for the purpose of ramming the earth into the pot firmly. This is essential to a short-jointed, well-ripened growth. In potting it is easy to gauge how much of the compost may be put into the bottom of the pot so that the surface shall be nearly 2 inches below the rim. This is to provide space for water, and room, too, for a top-dressing later on. As I have stated, the soil cannot be easily made too firm, and it is worth while to take plenty of time, so that potting may be properly done.

For a couple of weeks after this operation I would stand the plants close together in a not over sunny position, and for several days no water should be given at the roots, unless the leaves flag unduly. Instead of this, we would sprinkle the leaves morning and evening. By the rapid development of new leaves it will be easy to know that the roots are moving into fresh earth. The plants may then be removed to their summer quarters.

In this connection errors are often made. A hundred plants are made to grow in a space where much better results would come if but half the number were managed. Chrysanthemums must have plenty of room. I would stand each pot from 18 inches to 2 feet apart, and in rows not less than 5 feet asunder. Then, all other conditions being favourable, the growth cannot help becoming matured. The most open position of the garden may be selected.

To obtain bushy plants each shoot should be topped when 4 inches or so in length, but for large blooms the shoots ought to be restricted; three is the orthodox number. I place a central stout stick to each plant, and then loosely tie the three side growths to this. Fastening the growths should be prompt; being tender at the points they readily snap off through wind and other causes. Keep the leaves free from insect pests. The most troublesome is green-fly; Tobacco-powder destroys it, but in this matter, again, it is wise to be prompt. The leaf-mining-fly does mischief in most seasons, although I have not seen it on my own plants yet this year. This may be picked off, and its road be easily noted by the white mark it leaves behind. Syringing the plants every day with weak soot-water has been found an easy means of keeping the leaves free from insect pests. This dressing, however, must be clear. Soot-water is made by putting a quantity in a bag. This is then kept in a tub of water, and the liquid is then always ready for use. In giving a healthy dark green tone to the foliage the liquid is also most valuable. H. S.

OUTDOOR PLANTS.

A BORDER OF HARDY PLANTS.

The illustration shows a mixed border of hardy plants. One can see at a glance how richly the border is stocked with hardy flowers, which keep up a succession of bloom from spring until autumn. Many gardens are uninteresting owing to their bare appearance, except during the summer months, when annuals and the usual run of bedding plants contribute colour to the borders. We do not want a one-season display, but a continuance of hardy flowers from Snowdrop-time till the opening of the Christmas Rose in December. Sufficient use is not made of hardy plants in our gardens, but nothing is more suitable, as they grow freely and give little trouble.

A mixed border.

Mixed beds.—These are seen far more frequently with each succeeding year, and are either very pretty and satisfactory or objectionable, according to the different arrangements that have been made. If the mixture means the association of one bed of, say, at most half-a-dozen species or varieties planted together in sufficient quantity to show their true character, there is nothing to be said against it, always provided judgment is displayed in the association alike of species and colours, but the indiscriminate huddling together of the odds and ends of the frame-ground is certainly not a happy style. Not only are plants totally unlike in habit and appearance, and with nothing in common brought into immediate contact, but with the idea of filling up the bed quickly they are planted very close together, with the result that the bed contains a lot of weedy rubbish and is very disappointing. A satisfactory mixture may sometimes be effected, as in the case of scented Pelargoniums in variety with Heliotropes, Aloysias, Eucalypti, etc., and with annuals, occasional groups of the taller things, as annual Chrysanthemums, Stocks, and Zinnias, and dwarfer things, as Mignonette, the shortest of the Linarias, and Portulacas.—R.

EARLY JUNE FLOWERS.

It is a pleasure to turn from the flower garden, in which, by-the-way, Tufted Pansies are just now very fine, to herbaceous borders, and contemplate the inmates that are already well in flower, and that are thus early in June very beautiful in themselves and exceedingly useful for the flower-basket. Quite in the front rank must be placed the Spanish Irises. In firmness of texture and in staying power in a cut state they are considerably before the larger and more brilliant-hued German section. I tried an experiment with a handsome gathering the other week to see how long the flowers could be kept, and found them, with an occasional change of water, quite fresh at the expiration of a fortnight. Pyrethrums are also among the most enduring of the early June flowers, and if any new sorts were acquired last winter, a note should be made of special favourites with the view to the increase of the same by autumnal division. One sometimes sees spring division and replanting advocated, and I have wondered lately how the Pyrethrum has fared this season under such treatment if allowed to shift for itself without mulch or water. Stocks have revelled in the dry time, and have been and are exceptionally good; the varieties most in favour are the purple and white East Lothians and Carter's Giant Winter, a vigorous type with very large pure white flowers. Bearing in mind the value of Stocks and how they may be secured thus early in the year, it may be well to give the reminder that for another season's early display seed may be sown towards the end of July. A capital early white flower is obtained from a good strain of Antirrhinum nearly pure white, and although not over tall very vigorous in habit and large alike in spike and individual flowers. Old plants cut over at the end of last season and allowed to remain, started early and were flowering well by the third week in May. A practically drought-resisting plant, it will be one of the best things in the garden should we have a dry season. The earlier Pinks are making a brave show. Ernest Ladhams and Mrs. Welsh are not out yet; as a rule, they just anticipate the Carnations, but as some of the latter are on the point of bursting, the flowering season this year will be at about the same time. Selected blooms of Her Majesty, together with Aphrodite Pyrethrum and Niphetos Rose, are in June among the choicest of outdoor white flowers. E.

HERBACEOUS PLANTS MASSED.

There was an article in Gardening, April 24th, by "M., Northumberland," in which he warned amateurs that there was an immense labour connected with a properly kept "mixed border." By a mixed border he meant an herbaceous and bulb border in which a great many kinds of herbaceous plants and bulbs were planted, and in which was also planted annuals and biennials, such as Wallflowers, Canterbury Bells, Snapdragons, Pentstemons, and Tufted Pansies (these latter, by-the-way, are many of them perennials on suitable soils). No doubt such a bed demands much labour, and too often no result worth that labour in the end.

I am quite sure that any novice starting such a bed would have years of disappointments and useless expenditure of money and trouble before sufficient knowledge to make such a border a success was gained.

But there are many people who would like to

have a bright garden without much trouble, and to make it a success from the first; and I think enough help is not given to those beginners who want details as to distances, etc.

If they will treat biennials and annuals as bedding-out plants and keep them out of their herbaceous borders, they will save themselves a great amount of labour, and avoid trying an experiment which will be fairly certain to fail for lack of knowledge. If they will also avoid trying to grow all kinds of plants, but begin by growing only really hardy ones, they can do more year by year, if they choose, but will obtain a start in the right direction.

"M., Northumberland," says that a mixed border gives as much trouble as a bedded out one. Such beds as I have just described, and gave a description of upon March 27th and April 17th, certainly do not. Nearly all my big beds and many of my smaller ones are treated in this way, and I am quite sure that once planted they do not give half the amount of trouble that is caused by raising from seed, pricking off, frame or greenhouse treatment, potting and repotting, planting and replanting, cutting-making, etc., caused by the much smaller portion of my garden, which is devoted to bedding out. As to using the three-pronged fork in my borders which "M., Northumberland," advises for his mixed border, that, of course, is out of the question, and on this point I disagree with him. Like shrubs, I believe that herbaceous plants do not like their valuable surface roots wounded or destroyed, and that until at the end of a great many years one is obliged to remake a bed, it is much better to top-dress than to attempt to interfere with the soil beneath the surface. This can only be done in a very half and half kind of way, and in this, as in most things, I mistrust half measures.

I seem to get more out of the soil in which I plant my things so thickly (I crowd them, of course, but never crowd in such a way that one plant spoils another; I only crowd the soil) than one would suppose it would bear for long at a time; but I have done it for at least seven years, and I have proved that in both a rich and rather poor soil all goes well; so I think I may safely venture to say that unless you have that most tiresome of all soil, a very dry and very poor one, you will find beds satisfactory. A good mulching every autumn of leaf-mould and short manure mixed, and a thorough preparation of the soil beforehand by digging and manuring and addition of leaf-mould, will carry them through for a great many years without any other trouble.

I have proved that Phloxes will bear this treatment (of leaving bulbs, taking the food out of the soil at their roots), and Phloxes, of all flowers, love a rich soil and rich treatment. And if they will stand it on my rather poor soil here, and stand it magnificently on a rich soil I had before I came here, any gardener can see that the other plants I have named will do so also. I do not say the Phloxes on my soil here are quite as good as they would be with richer treatment and more space, but I know that they give a good and bright effect, and that is what I am writing about.

Amongst such plants as I have named deaths rarely occur; but I will not say that they never do so. Every year in my massed beds I have a few plants to replace—perhaps two or three Phloxes or Delphiniums—but then I have many scores of each of these plants, and I grow some less strong kinds than those I have recommended in GARDENING. And it is not very difficult for anyone to go over their beds when they are first showing green life in the spring, and get one or two new plants (should it be necessary), and carefully put them in where the dead ones are. The probability is that there will be no dead plants at all to replace.

MRS. ROBERT JOCELYN.

Pæonia tenuifolia.—Very striking just now are some of the single Pæonias, and none more so, perhaps, than this species. It is very pretty, too, in its delicate foliage, and in combination makes a very desirable plant. But to see it good it must be planted and left alone for a year or two to become fully established, giving it a deep as well as a very rich soil.

THE EREMURI.

EREMURUS ROBUSTUS is a native of Turkestan, and is now fairly common in gardens. It is an ally of the yellow Asphodel, to which, however, it bears little resemblance, being like a gigantic Hyacinth, with bright peach-coloured flowers, now just opening. It can be obtained from most nurserymen, and should be planted about the end of August. I do not think it is very particular about soil, but it delights in a damp, well-drained spot in full sun, and when once planted should never be disturbed. The plant of which I send a photograph has been growing in my garden, in heavy loam, for five years, and flowered the first spring after planting. The second year it had a magnificent single stem, quite 9 feet high. In subsequent years the spikes increased in number, but decreased in height, and some, as may be seen from the photograph, were imperfect. This arises, I think, from the soil having become somewhat impoverished. It seeds freely, and the seeds should be sown in the open ground as soon as ripe in August, when they come up the following February, at the same time as the great boll of the parent plant pushes through the ground. The seedlings, however, take many years to flower. I have some now four years old, which are still quite small plants, and show no intention of flowering.

The Giant Asphodel (Eremurus robustus). From a photograph by Mr. Henry A. Hare, Much Hadham, Herts.

I have always given the plant the protection of a handlight in spring, but I doubt if it is necessary, as when established it seems perfectly hardy. Eremurus Bungei shows signs of blooming with me for the first time this year. This species has yellow blossoms, and very handsome it is, but much more tender than E. robustus; in fact, I find it must be absolutely protected against frost. I have another species, E Olgæ, which flowers in July, but I have yet to prove what this is like. It comes up much later, and so escapes the early frosts, but the late frosts this spring have browned the tips of the leaves.

HENRY A. HARE.

The Orchard, Much Hadham, Herts.

PARROT TULIPS.

FEW cultivated plants are so apt to vary under cultivation and to startle their cultivator by the most unexpected of changes as Tulips. Not only will a self-coloured Tulip suddenly break into a striped and feathered flower, but it is also not uncommon to see a striped Tulip suddenly assume a self colour. Every grower of late breeder Tulips knows that these bulbs occasionally sport into striped flowers, which are commonly called byblœmens and bizarres. Early Tulips behave in the same manner; they also occasionally sport from a striped and variegated flower into a self-coloured one. Thus, the beautiful pure white single early Tulip Joost van den Vondel has sported from the typical Joost van den Vondel, which is striped violet-red and white. The beautiful striped Roi Pepin occasionally breaks into a pure white flower, and many more examples might be quoted. The double early Tulips do the same, and thus, for instance, the double red and yellow variety Tournesol has sported into a very beautiful golden self yellow Tulip, which is now known as Golden King. These sports, however, are not confined to Tulips alone, but what to my mind is a most unexplainable and uncommon freak of Nature is that Tulips will sometimes assume a monstrous habit, become different in bulb, foliage, and flower, and from an ordinary everyday Tulip, regular in every respect, will quite suddenly turn into the queer, horned, angled, and irregular flowers which are known as Parrot Tulips. This statement, I know, is quite at variance with what authors generally tell us in botanical and gardening works about the origin of this class of Tulips. It is usually stated that Parrot Tulips resulted from crossing Tulipa acuminata (cornuta stenopetala) with the ordinary varieties, but careful study of this group of Tulips has convinced me that this is not true. Crosses with T. acuminata will produce Tulips such as elegans, fulgens, and retroflexa; but the origin of Parrot Tulips, to my mind, can only be attributed to the same freak of Nature which will produce the grotesque-looking Cereus peruvianus monstrosus and the numerous crested, fringed, and tasselled Ferns. In almost any large collection of Tulips few or more Parrots will crop up annually, in some years more than another, and of course some varieties are more liable to do it than others. What is also most curious is that nowadays naturally quite different single and double Tulips are grown from those which were cultivated by our ancestors centuries ago, and yet this Tulip of nowadays, cultivated and refined by the hand of man during so considerable a lapse of time, will sport into exactly the same monstrosities as the celebrated Dutch painter Van Huysum loved to portray so vividly and faithfully two centuries ago. Occasionally, though very rarely, a new variety will turn up. A few years ago one plant among a lot of the byblœmen Tulip Reine des Amazons, which is a violet-striped variety, suddenly sported into a unique Parrot Tulip, to which the name of violacea lutea was given, and which is one of the most distinct varieties.

Great confusion has existed among the names of Parrot Tulips, but the following are the now recognised varieties: Admiral van Constantinopel, a bright scarlet flame-coloured variety. Café brun, a deep yellow, finely feathered and striped brown. Café pourpre, a deep-coloured selection from the last. Cramoisi brillant (carminea), large flower of a deep vermilion-scarlet. Lutea major, large bright yellow, occasionally striped green and red. Markgraaf van Baden, this is one of the most beautiful of all; the inside of the flowers is a bright golden-orange, while the outside is heavily blotched and striped with scarlet. Perfecta, a very brightly coloured flower, ground colour clear yellow, boldly splashed and striped with scarlet. Preciosa, deep scarlet-vermilion, slightly feathered golden-yellow. Rubra major, blood-red, much crested and horned flowers, a very distinct and rare variety. Violacea lutea, the variety above mentioned; this is a very large flower, quaintly flamed yellow and purple.

C. G.

THE JAPANESE IRIS (I. KÆMPFERI).

One of the flowers of the summer season in the hardy garden is Iris Kæmpferi. There are many lakes and ponds in gardens the margins of which might be fringed with the growth of I. Kæmpferi, ornamental even when not in bloom, but trebly so when it sends up the sturdy spikes, each supporting a flower of massive proportion—too much so sometimes, to our mind, as when too large the folds and graceful curves, so beautiful in the bearded Flags, are lost in the breadth, firmness, and strength of the bloom. In its leafage, manner of growth, and inflorescence it shows an affinity to the grassy I. sibirica; also to the common, but beautiful, yellow Water Flag (I. Pseudacorus). There is in the colours of the flowers a wide range, some of the purest white, others self purple and so on; but by far the most beautiful are the self varieties, that show no trace of blotches, spots, and other disfigurements. We cannot admire, and many are with us on this point, a flower dappled and speckled as a piece of bad mosaic. Only those pure and decidedly coloured flowers should have recognition, as peering up through the luxuriant growth they give a display that only self colours are capable of. In some kinds there is a decided tendency to doubling in the flowers, happily a rare occurrence in respect to other Irises, although we once saw a double-flowered I. sibirica—a monstrosity we hope never to see again. If we do not get beyond a double whorl of falls it will not be of great moment, as the second whorl gives a fulness to the bloom by no means undesirable. It is when the whole thing becomes veritably double that a monstrosity is produced. The flowers last well in water if gathered just as they are expanding, and so have a good use besides their beauty on the plant. Those who have not a pond, stream, or lake in the garden cannot give them the same conditions as the Japanese, who cultivate Kæmpfer's Iris with tender care, and in many of their photographs, in the taking and colouring of which they are adepts, this Iris will sometimes be recognised often by the sides of running streams, and fringing them as our own Iris in England. Surprisingly beautiful must be this Iris in Japan, where it lives and increases with a vigour that we have not seen in our own country. The Japanese hold it in peculiarly high repute, and are most successful with it, as seen by the seedling roots that are imported annually in thousands, all of which have, however, bloomed before they were exported. If a large batch is forwarded, a coloured drawing of each flower is also sent, and though roughly done on rice paper, gives an approximate idea of the treasures the nurseryman or gardener may expect. Very true are many of these drawings to the varieties they represent, and they also show the care that is taken with this Iris in the land of flowers. Those who cannot grow them by the side of water will do well with them if they are cultivated in moist loam, and kept well supplied with water during the summer months.

A group of the Japanese Iris (I. Kæmpferi). From a photograph by Miss Willmott, Great Warley, Essex.

Planting Dahlias.—Many persons are over-anxious to get Dahlias planted. This tender plant is not only affected by the slightest frost, but cannot grow properly when cold wind prevails. If some protection under glass, such as an odd light or cool-frame, can be afforded them, I would defer planting till about the second week in June. Meantime it is well to give the roots room by repotting from small into 6-inch pots. It is much better for the plants to be making progress here than practically standing still in the open ground. In planting again, it is wise to make a hole fairly deep, so that when the work is finished a mound may be left around the plant. This gives one the power to get the water down to the roots instead of most of it running away on the surface.—S.

Plagianthus Lyalli.—This is a lovely shrub against a wall with an eastern exposure. It has pure white flowers, reminding one of the White Musk Mallow, produced in clusters on the current season's branches. The flowers, being 1½ inches across, are very attractive mingled with the foliage, which is oblong heart-shaped. Those who like to have uncommon as well as beautiful shrubs against a wall will find such a one in this. It may be associated with its relative, P. betulinus, which is as beautiful, though with somewhat small flowers. Both belong to the Malva family, and are natives of New Zealand, therefore not hardy enough to be risked away from the shelter of a wall in the neighbourhood of London or similar climates, but in the warmer southern counties and in parts of Ireland both are probably hardy as bushes. These are the only two grown in the open at Kew, the others being under glass.—W.

VIOLETS.

Kindly oblige me with advice as to growing Violets, both in frames and outside. We always for years have had them to perfection till this last winter and spring—from November till March they used to be. My present gardener does not seem to understand them. We grow for private use only, some in frames facing south, with a wall rather near behind. Now all these frame ones are dust dry, and no runners yet taken. My gardener says it is too early, and they must be kept dry till then; but this winter has proved him wrong. We have every appliance for liquid-manure. I have Marie Louise, C. de Brazza, De Parma in frames, and Wellsiana, Czar, Victoria, Princess Beatrice, and Californian outside. Shall be very grateful for help, as they are great favourites? B.

*** In frames.—Our correspondent has kept the Violets very dry under the impression such was the proper course until runners were ready for removal; also that it was too early yet for taking runners. Both of these are great mistakes. A dry soil and atmosphere, at this season especially, means poor growth and much red-spider. This insect is the worst pest the Violet has, and cannot be kept away in a dry soil or atmosphere. Nor can one take runners too early. Make up the beds with fresh loam on the surface; few plants are so exhausting to the soil as Violets, Strawberrries, and others that are constantly forming runners. Indeed, in this respect, Nature is again a grand example. Both subjects seed freely; but runners are searching for fresh soil, endeavouring to get away from that their parents have exhausted. If we try to grow Violets upon the same soil time after time they will surely fail; therefore, remove the old and add an entirely new compost. Leaf-soil and rich loam in equal proportions are suitable. It is not necessary to remove the lower part of a raised bed. Plant out the runners as soon as possible, and keep new runners from these picked off closely. A well-grown single crown is the desideratum, and not a mass of growth, however healthy and flourishing it may appear. Shade and sprinkle freely until established, then give full exposure, but take great care that they do not suffer from drought. If red-spider puts in an appearance, fumigate slightly a time or two, and give a more copious supply of water. Weak liquid-manures are a great help while the plants are growing, but are not necessary during winter and the early spring when flowering. Although Violets need so much water in summer, we must see that they do not damp off during the dull winter days. The frame is raised to avoid this, and should otherwise be used for shelter more than for forcing of any kind. An ample supply of air should be given upon all favourable occasions.

In the open it is necessary to increase early, and water freely while very dry weather prevails. Liquid-manures at night or early morning are a great help here also, and if one has a bed upon a warm south border, a west, and also a north border, their season is greatly prolonged. The Violet is quite hardy, but our beautiful doubles will not bloom well without the protection of a frame unless in a warm and sheltered position. If our correspondent will add King of Violets, the collection could not be improved upon.

TREES AND SHRUBS.

THE BEST SHRUBBY SPIRÆAS.

A GOOD assortment will maintain a display of bloom from early spring until the autumn. In making a selection of the finest shrubby Spiræas to give a succession of bloom, I should name the following as the best: Spiræa Thunbergi is the earliest to flower of the whole group. It is a graceful bush, the shoots being long, slender, and arching. This species is succeeded by S. prunifolia fl.-pl., which has double flowers; the single-flowered form does not appear to be in cultivation. The Spiræa in question forms a spreading bush 6 feet high. Unlike most of its immediate allies, the foliage of this dies off deeply tinted in the autumn. Following closely after these two, the blossoms of several others rapidly unfold, S. trilobata amongst the number. This is quite dwarf against S. opulifolia, which is one of the giants of the genus, for when fully developed it forms a large shrub 10 feet or more in height. The leaves are not unlike those of the Guelder Rose (Viburnum Opulus), and the flowers are somewhat in the same way, but not borne in such globular clusters. Beside the blossoms, the reddish inflated seed-capsules of this species corymbs. There is also a form of this which, from its richly-coloured blossoms, is known as paniculata rubra. S. Fortunei is the same as S. callosa and S. japonica, and the two varieties last mentioned—viz., paniculata and paniculata rubra, are generally known under the specific name of Fortunei. The rich tints on the young leaves of this group make a bright picture of colour when the plant is lit up by the sun. The brightest colour is on plants fully exposed. A pretty little Spiræa seldom seen more than 1 foot or 18 inches in height is S. callosa alba, but it differs in many respects besides the colour of the blossoms from the other members of the callosa or japonica group. The flowers are pure white, usually at their best in July, but after that a scattered succession is often kept up; indeed, I have had it nicely in flower up till November. The leaves are entirely without the rich tinge of the other forms during their earlier stages. S. Douglasi, which has rosy-red flowers, is a handsome shrub, forming a large clump of densely packed shoots, clothed with more or less of tomentose leaves, and each shoot terminated by a large spike of flowers. It varies widely, but the richest coloured form is usually of good sturdy growth. The names of S. tomentosa, Menziesi, and Nobleana occur as distinct species, or as varieties of the latter. S. nutans, a Nepaulese Spiræa, by some regarded as a variety of the preceding, and by others looked upon as a distinct species, is alpina, grandiflora, or Pallasi, for by each of these names it is known. It differs from S. sorbifolia in the foliage being lighter, the individual blooms double the size, and of a purer white, while it blooms a fortnight or so earlier than S. sorbifolia. The third to mention of this class is the beautiful S. Lindleyana, a much larger shrub, for in good soil it will reach a height of 10 feet or 12 feet. The usual flowering season is during the latter half of July, or sometimes in August, at which time the number of flowering shrubs in bloom is small. While all the Spiræas delight in cool, fairly moist soil, this is more necessary for Lindley's Spiræa than the others, as the foliage must be fresh and green at the time of flowering. Some of the species which bloom early in the season will at that time be fresh, even in moderately dry spots, though they will probably suffer during the hot weather of July or August, at which time S. Lindleyana is in full bloom.

R. T.

The Pyracantha in flower.—Of the later flowering Thorns the Pyracantha certainly merits more attention than is usually bestowed upon it as a flowering shrub, for, allowed to form later on a prominent feature. The golden-leaved variety of this differs from the type, besides the colours of its leaves, in being altogether a smaller growing shrub. The yellow-tinted leaves are attractive in the spring, but later on they lose much of their bright colouring, and in time become green. Of S. hypericifolia there are several forms, one of the best being flagelliformis. In this the flowers are borne in small corymbs, disposed thickly on short laterals throughout the greater part of the long, slender, gracefully-arching shoots. The blossoms are pure white. One of the brightest of its class is S. splendens, usually flowering towards the end of June and in July. It is a dense-growing shrub, about a yard high, while the flowers are borne in closely-packed terminal corymbs. The colour is rich carmine-pink, and when seen in a mass it is bright and telling. S. ariæfolia is a big kind, which flowers about the latter part of June or in July. The specimen is a mass of cream-coloured plumes when in full bloom.

There are several Spiræas belonging to the callosa group, the best of which have bright-coloured blossoms. S. callosa, also known as S. japonica, is an upright bush, reaching a height of 5 feet or 6 feet, and bearing flat corymbs of bright rosy-red blossoms. The best varieties are rubra, very deeply coloured; pallida, one of the palest; and paniculata, in which the flowers are borne more in panicles than in flattened

Spiræa Lindleyana and the Silvery Reed Grass (Arundo conspicua).

species, flowering about the early part of July, is well worthy of a place. This makes a bush 6 feet or 8 feet high, the principal shoots being upright at first, but drooping towards the points, whilst the minor branchlets are still more pendulous. The leaves are small, while the pure white flowers are borne in great profusion. They are arranged in dense flattened clusters, and extend for a considerable distance along the shoots, thus making a goodly show. A pretty Spiræa, which should, perhaps, have been included under the head of S. japonica, is S. Bumalda, which rarely exceeds 2 feet in height, and bears its bright pink blossoms very freely. It is a July flowering species. Another is the curious miniature S. crispifolia or bullata, a dwarf shrub, better fitted for a nook on the rockwork than for the open border. This forms a dense mass less than 1 foot high, every twig of which is terminated by a cluster of its pretty carmine-pink blossoms, bright crimson in the bud.

There is a small class of shrubby Spiræas remarkable for their pinnate foliage, and consisting of the Himalayan S. Lindleyana (see cut) and the Siberian S. sorbifolia. This grows to a height of from 3 feet to 6 feet, and succeeds best in a cool, moist soil. It soon pushes up a considerable number of shoots and forms a dense mass of large, pinnate bright green leaves, overtopped by loose terminal panicles of small white flowers. A grow as an open bush, it is now quite a mass of clusters of pretty white blossoms. In such a position, however, its berries are as a rule not nearly so numerous as when it is trained to a wall. Of the larger growing kinds that are late in flowering one of the best is the Tansy-leaved (Cratægus tanacetifolia), which is remarkable not only for its show of blossoms after nearly all the others are past, but also for the peculiar ashen-green foliage.—T.

Cytisus Ardoini.—Among the many delightful plants comprised among the dwarf Cytisuses there is none more interesting and pretty than this. It is a plant of prostrate habit, growing only a few inches high, and has small trifoliolate leaves, the leaflets being ovate and hairy, especially when young. The flowers are rich bright yellow, and their abundance may be judged by the fact that from one to six of them are produced in the axil of a single leaf. A plant in the rock garden at Kew is just now at its best. Moggridge states that it is known to grow only on the summits of three mountains near Mentone, and is made the more rare by being continually cropped by animals, which rarely allow it to seed. It strikes freely enough from cuttings taken in August and placed in a cold-frame in fine, well drained sandy soil. Its dwarf, close habit and richly coloured, abundant flowers adapt it admirably for the rock garden.

INDOOR PLANTS.

THE WAX-FLOWER (HOYA BELLA).

Although an old-fashioned and almost neglected plant, there are few stove creepers more beautiful than this little Hoya when well grown and flowered. A plant growing here in a wide basket about 6 inches across has sent shoots in all directions, making a specimen about 3 feet across, the young growth closely studded with the charming little umbels of flower, consisting of from six to ten on each. The outer segments are pure ivory-white, the little jewel-like centres being a glistening amethyst-purple—a combination that calls forth many encomiums from those seeing it for the first time. Its culture is remarkably easy, and it may be freely propagated from cuttings after the flowering season has past. The cuttings should be taken from half-ripened shoots, and may be about 4 inches in length. When cut from the plant a thick white liquid escapes, and in order to prevent them bleeding too much, the cuttings should have the ends dipped in dry sand before being inserted in a light sandy compost round the edge of a 4 inch pot. They strike readily if given a little bottom-heat, and should be potted up singly into small pots as soon as rooted. The Hoya adapts itself readily to any form of training, looking very pretty trained in a loose manner up a trellis or under the roof-glass, but as a basket-plant it shows to the greatest advantage. The plants flower most freely if kept rather pinched for room at the roots, so baskets of a small size are necessary at first. The roots dislike a heavy or close soil, and do well in a mixture such as many terrestrial Orchids like, first lining the baskets with Moss for the sake of appearance and to prevent the finer parts of the soil finding their way through the interstices. The Moss is not necessary in pot culture, but lumpy peat and loam, together with some sharp sand and siftings of charcoal, may be used with advantage, any manurial deficiency being made up by watering with a little guano highly diluted after the plants become pot-bound. A shady, moist stove is the best place to grow it, the shoots being longer, and therefore producing more flowers. If such a house is not available, it will thrive in a vinery or warm greenhouse, though in such positions care is necessary in winter, and the roots should be kept on the dry side. Amateur.

NOTES ON BOUVARDIAS.

By the end of May Bouvardias which were struck in early spring will be ready for the final potting. When they are required to flower early, pot them not later than the third or last week in May. Keep the extremities of long shoots pinched to form a well-shaped plant. A close pit or warm frame where they may be placed close to the glass is suitable. A temperature from 65 degs. to 70 degs. should be maintained by night, with a rise of 10 degs. by day. A thin shade is necessary on bright hot days, otherwise they become weak, and syringe freely twice a day. When the pots are full of roots, a little soot-water may be given twice a week, which gives good colour to the foliage. In July the principal shoots will need a little support, when they should be tied out to small sticks. Any plants showing bloom for the next five or six weeks (unless required to flower early), should be pinched; otherwise, they will flower too soon. Allow an abundance of air through August and September, and if the plants have made sufficient growth, they may occupy a frame, the lights being removed during the daytime, as this helps to strengthen and ripen the wood. They will now set flowers which will begin to open in October, but give no more heat than suffices to prevent them from being cold at night or by day. To get full-sized flowers and good colour a little increase of heat should be allowed as the temperature gets lower.

Planting out should be done the same time as the final potting. Pits should be selected with some good fibrous soil, and plant them 18 inches or 2 feet apart, allowing the plants to be 1 foot away from the glass. If treated the same as already described in pots they flower in abundance. They should be taken up in September and potted according to the size of the plants, keeping close for a few weeks until they have recovered from the check. When grown in this way they flower freely, and continue to bloom much longer than the pot-grown plants. When lifting care must be taken to preserve the roots and get a fair ball to each. W. J.

ORCHIDS.

THE SWAN ORCHID (CYCNOCHES CHLOROCHILON).

This is probably the most popular of the Swan's-neck Orchids, as the species of this genus are termed, on account of the peculiar curving column. It is a fine plant when in good condition and bears long, thick pseudo-bulbs of a fleshy texture, quite different from those seen in Cattleyas and other genera. The leaves are each about 9 inches or 10 inches long, with a distinct mid-rib, and the flowers are produced from near the tops of the pseudo-bulbs on long curved spikes. The flowers vary considerably in size, a good form frequently producing blossoms 5 inches to 6 inches across. The sepals and petals are greenish-white, broad, and incurving; the lip is white in ground colour, with a thick fleshy centre varying in colour from yellowish-green to nearly black. The column is very long and slender, arching, the pollen masses forming a peculiar knob on the end, supposed to resemble the head of a swan. The number of flowers produced on a spike varies considerably, some bearing about two or three large flowers, others having several usually smaller, but all are worthy of extended culture as really handsome garden Orchids of very interesting structure.

The Swan Orchid (Cycnoches chlorochilon).

The culture of Cycnoches chlorochilon is not difficult, but requires care if the best results are to be attained. The roots are large and rather gross feeding for an Orchid; consequently in preparing the compost care must be taken to make it substantial, at the same time avoiding closeness. A nice mellow, yet fibrous loam, with most of the soil shaken out, peat similarly treated, and fresh green Sphagnum Moss may be mixed in about equal proportions, plenty of rough nodules of charcoal being added. The plants may be grown either in pots or baskets, good drainage being the first consideration in either case. This having been carefully attended to and covered with a little Moss, fix the plants in position so that the bases of the old pseudo-bulbs come a little below the compost line. Plants not fully established should be raised on a cone-shaped mound, but with older, well-established plants this is unnecessary. The bulbs being rather heavy, considerable care is necessary in order to prevent them rocking about, and this must be attended to, or the plants will never be happy. Some good stout stakes should be driven in around the edge of the pots and the tops of the pseudo-bulbs secured to these until the roots are running freely, when the plants become self-supporting. The best time to repot is after the young growths are starting, but before they commence rooting on their own account. Then when the roots are emitted they enter the compost at once, to the considerable benefit of the plants. After repotting, place at once in a shady corner of the East India-house, and damp about them freely, not syringing overhead, as this is apt to cause the decay of the young shoots owing to the water collecting in them. Until the roots are gently moving it is unwise to water much, but as soon as they start the supply will need to be quickly increased, the plants, as aforementioned, being strong feeders. When they have obtained a good hold on their pots, it will be found necessary to water almost daily, the plants having in the meantime been given more light and air. The pseudo-bulbs finish up in due course, and here it may not be out of place to warn amateurs not to expose the foliage too much at first with a view to ripening it and the bulbs. The leaves have an important part to play in the economy of the plant, and must be kept on as long as possible. The water supply, too, must be continued right up to the time when the leaves show signs of ripening off, though the temperature may fall a little and a still greater quantity of air be afforded them. As the leaves fall—for the plants are deciduous—lessen the water supply by degrees, until by midwinter they get at times actually dry. They must not remain in this condition long enough to cause injury to the stems by shrivelling. When starting the plants in spring—the time for doing so being indicated by signs of new growth appearing—let them be immersed for an hour or two in a pail or tank of tepid water to ensure a thorough softening of the compost, and to drive out any insects that may have been attracted by the dry, comfortable quarters during the winter. The most frequent insect enemy is brown scale. If

this is all removed there will be less chance of the pest attacking the foliage later on, but the plants must be often looked over, and as soon as the least signs of the insects are seen well sponge with clean, tepid, soft water. This is better for the leaves than using any insecticide, and is well repaid, even if no insects are present, by their improved appearance. The plant flowers at different times in the year, the most usual season being the early summer months. It is a native of Demerara and various other tropical parts of South America, having been introduced into this country in 1838.

SOOT AS MANURE.

Without doubt soot is an excellent fertiliser, and one, moreover, that is often, even now, not fully appreciated. I think, then, all lovers of a garden should secure a supply of soot whenever it is possible to do so. Also it must be borne in mind that it must be kept dry, therefore a bin or large cask or box, placed in a dry, covered shed should be used for its storage until required for use. It may with benefit be applied to all kinds of land, light as well as heavy, and there is hardly a crop cultivated in the garden to which it may not be applied occasionally with advantage. Amongst kitchen garden crops it is especially valuable in the case of the Onion. This crop is frequently attacked by the maggot, which, if not checked, soon commits sad ravages, and the best remedy is a good dressing of soot. As, however, prevention is better than cure, the land intended for this crop should in almost all cases have a good dressing of this material shortly before the seed is sown, in addition to any other manure which may have been given during the preceding winter. Nearly all plants of the Brassica (Cabbage) tribe are liable to be attacked by what is known as the "club," which frequently proves very troublesome, and the best known preventive of this is called puddling the roots of the plants—an operation easily performed by merely making a hole in the soil near to where the plantation is intended to stand. In this hole place a portion of fresh soot, and to this add a little fine soil and water, and mix up until it acquires the consistency of thick paint, and into this mixture dip the roots of the plants before planting them. Seed-beds of the various kinds of Cabbages, Lettuces, Radishes, etc., when the seed is just about to germinate are very apt to be attacked by birds of various kinds, and this may sometimes be prevented by giving the surface of the beds an occasional slight dressing of fresh soot, the odour of which the birds do not by any means relish. A slight dusting of this material round newly-planted Lettuces and other plants will also go far to keep slugs and snails from attacking them, which they are apt to do before the plants have recovered from the effects of transplantation.

Grass lawns and belts in the pleasure grounds, etc., may also frequently be much improved by the application of soot or a mixture of soot, wood-ashes, and fine soil. This appears to have the effect of encouraging the growth of the finer sorts of Grasses, and, as it were, assists them to overcome and to finally extirpate the coarser kinds, together with weeds and Moss. Soot-water is found to be exceedingly beneficial to many plants under glass, either when grown in pots or planted out. It drives worms from the soil, and repeated applications soon show their effect in the increased vigour and healthy appearance of the plants. Its effect upon the Grape-Vine, too, when applied in the form of a dressing to the surface of the border, whether inside or outside, is soon apparent. The soot is gradually conveyed to the feeding roots by the action of rain or the repeated applications of water, and the texture and colour of the foliage soon show the good results derived therefrom. Strawberry-plants in pots may also be greatly benefited by repeated applications of soot-water, which has the effect of driving earthworms, maggots, etc., from the soil as well as acting as a fertiliser. Indeed, there are few, if any, plants grown in pots which may not be more or less benefited by its occasional application, and I have never known plants to be injured by it except when given in too strong a state or when thick, so be sure and use it clear and quite free from sediment, and then it is of the greatest value. There are, no doubt, many other purposes to which soot may be usefully applied, but enough may have been already said to prove its value in the garden. H. B.

GARDEN WORK.*

Conservatory.

Plumbago capensis supplies a tint of lavender that is not found in any other flower. The plant is easily grown either in a pot or planted out and trained on wall or pillar. There is a variety with white flowers, but it is not so popular as the type. The flowers are too fragile for cutting, but it is a very useful plant in the conservatory, and is easily propagated from cuttings of the young wood in heat kept close for a time. Those who wish to strike cuttings of Azaleas may do so now under bell-glasses in a shady part of the greenhouse. Select half-ripened young shoots, 3 inches long, and dibble them into pots of sandy peat, with a layer of sand on the top, the pots to be firmly filled and watered, and left for half-an-hour to drain before putting in the cuttings. Make a mark with the bell-glass on the sand, and dibble the cuttings inside the mark made by the rim of the glass. Heaths and other hard-wooded plants may be rooted in the same way when cuttings in a suitable condition can be obtained. Neither Palms nor Tree-Ferns can be exposed to hot sunshine without loss of colour. The shade need not be dense, but it must be enough to break the rays of the sun, and, of course, plants in bloom must have shade if the flowers are to live out their full time. A little ventilation may be left on all night now with advantage to the health of the plants, if it can be so arranged as to keep out rain. Intelligence must be used in the application of the water to the roots of plants, as errors either of omission or the reverse may be fatal. The safest test is to rap the sides of the pots, and judge from the sound. No hard-wooded specimen should be watered without tapping the pot first, and never water any plant without giving enough to moisten all the soil. If by any chance a plant gets unnaturally dry it is a better and safer plan to dip the pot in a pail or tank until the air bubbles cease to rise, and then let the plant go without for a time, but no hard-wooded plant, Heaths especially, can be left to get dust dry throughout the ball without injury. It is true the plant may appear to revive, but the probabilities are the young rootlets lying against the hot sides of the pots are killed, and before they can make a fresh start the plant dwindles and dies. Sow seeds of Primula obconica for autumn and winter flowering. This would be a very popular plant if it was not for its irritating effect upon the skin of susceptible subjects. Chinese Primulas and Cinerarias sown now will be useful next February and March when flowers are scarce.

The North House.

Every exhibitor knows the value of a plant-house with a north aspect for retarding purposes. Fuchsias, Lilies, Pelargoniums, and many other plants may be held back for any special purpose in the north house, and no establishment is complete without a house of this character. The usual arrangement is to cover in the north side of the wall at the back of the forcing-houses. It may be arranged in connection with the Mushroom-houses, which also require a cool north aspect.

Stove.

Be very careful about the purity of the syringing water now. Hard water, though it may appear when using it bright and clear, frequently leaves a white deposit on the foliage, which cannot be removed. It is better not to syringe when there is any doubt about the water, but damp floors instead. The soft warm air of a calm day may be admitted rather freely, but keen, drying winds had better be kept out. Shift on young Bouvardias, Gardenias, and other winter-flowering plants. Among the useful things in a small way are Pentas carnea, Plumbago rosea, Libonia floribunda. The last named should be pinched during growth, and towards the end of July removed to a cool-frame to ripen; there the lights can be drawn after the first week, as perfect ripening is absolutely necessary to free flowering. Stephanotis floribunda and Hoya carnosa are useful plants for flowering now. Both are rather subject to mealy-bug, and should be dealt with by the use of the vaporiser. A recent experience of its use points to the fact that mealy-bug cannot stand the nicotine vapour. A plant from a neighbour's house badly infested with bug was placed in a house we were vaporising, and the next morning the dead bodies of the bugs lay thickly around, and the plant was clean. Night temperature now 65 degs. to 68 degs.

Late Vineries.

We are busy now thinning Gros Colman and Alicante Grapes, and as soon as the thinning is finished a top-dressing of artificial manure will be given, lightly stirred in, and watered down with the hose. Stirring the border will be a guide to the dry spots. Later on the borders will be mulched down to check evaporation. No syringing will be done after the thinning is finished, but the borders and paths will be damped over whenever it is considered necessary. The ventilation is carefully seen to, so as to avoid cold draughts and prevent deposits of moisture on the berries. This means that ventilation on a fine morning begins about six-thirty, and is finished about ten o'clock if hot and bright all day. About three-thirty air is reduced, and the house finally closed and damped down at four.

Mushroom House.

It is hardly worth while to make up more beds in the Mushroom-house till the autumn, as unless the house is in a very cool, shady position, and is besides partly below the ground level, it will be too hot for Mushrooms to do well; but beds now in bearing may be thoroughly moistened with liquid-manure, in which one ounce of salt to the gallon has been dissolved, to induce the spawn to make a last effort. Make up beds now under a wall in a cool north aspect, and cover with litter or Grass to check evaporation, and keep the warmth steady. Such beds generally do well, and are less troubled with maggots than in a close, warm house or shed.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results*

Window Gardening.

Cactuses will in many cases now be in flower or bud, and must be well supplied with water, weak liquid-manure being given to those producing many flowers. Repot after flowering if necessary. Gloxinias must not be exposed to the full sunshine. Dry off Cyclamens which have flowered, and let them rest for a couple of months.

Outdoor Garden.

This has been a very dry bedding-out time. I like to plant when the surface is dry. The plants can be fastened better in the ground, and a good soaking of water will settle them in position, and this watering must be repeated unless rain falls liberally. When planting in wet weather, two or three boards which can easily be moved will save treading the beds into a quagmire. Very few plants take kindly to beds which have been trodden when wet. A great show can be made with annuals, but a formal arrangement of beds seems to require something more permanent. In a geometrical pattern if one part is a failure the figure loses its balance. There is a scarcity of yellow flowers suitable for massing. Calceolarias so often fail that many people have given them up. Marigolds are nice, though often used, but I like a dwarf selection of yellow Antirrhinums better. The new yellow Tropæolum Coolgardie will make a good bed, and yellow Violas or Tufted Pansies, if the soil has been properly prepared, will make a charming mass. Coreopsis grandiflora is perpetual enough to last in flower the whole season, though it may exhaust itself so much with production of flowers as to die during the winter. This necessitates annual increase of plants either from seeds or cuttings. Where the beds and borders have been deepened and well prepared so that the roots can run down, the hoe, if used often enough, may supersede the water-pot. It is better to conserve the moisture now in the land than to wash out the nutriment by watering the ground.

Fruit Garden.

Keep the growths of Melons thin and pegged out so that the foliage may not be unduly crowded. It is important to keep the main leaves healthy to the last. Rather strong loam is the best for Melons, and, if naturally rich, very little manure is needed, but a little bonemeal and soot will be beneficial. Melons do best in a firm root run, as this produces a firm short-jointed growth which sets plenty of fruit, and the plants are not so liable to disease or red-spider. Figs forced in pots will be ripening the first crop, and if the shoots have been sufficiently thinned and stopped the young fruits will be showing in the axils of the leaves to produce the second crop, which is usually more numerous than the first, though possibly if the second crop the fruit will not be quite so large, though if fine Figs are wanted the crop may be thinned, and high feeding will do something. Figs will take a good deal of nourishment in the way of rich top-dressings and liquid-manure when the roots are under control, as they necessarily are when grown in pots. Keep the atmosphere rather drier during the time the fruits are ripening, but as soon as the ripe fruits are gathered use the syringe again to keep down red-spider. Spray fruit-trees with a suitable insecticide, especially Apples, for the larvæ of the Codlin moth. In our district Plums and Cherries are pretty free from fly up to the present, but the cold nights have thinned the crops.

Vegetable Garden.

Keep the surface of the earth loose among growing crops by frequent hoeing or forking. When the ground is hard the fork is the best tool. Thin young vegetables after rain if possible. Mulch Cauliflowers, Lettuces, and Peas. Sow Marrow Peas, and it is not much use sowing Marrow Peas after this date unless the locality is an early one, but second early and early Peas may be sown up to the end of the month. Plant out Celery and Leeks in trenches. Mulch, water, and shade, especially the Celery, Turnips, Lettuces, and Cabbages, to encourage growth. Plant out Winter Greens as fast as land can be found. Tomatoes, Ridge Cucumbers, and Vegetable Marrows will be quite safe now. Tomatoes should be properly supported, either by wall, fence, or stake, and the side shoots regularly removed. In dry, hot situations a mulch of manure over the roots will save watering. Keep Asparagus-beds free from weeds, and all Grass should be cut till cutting ceases for the season, then let all come on together. Any spare liquid-manure may be given to the beds now. Young beds recently planted must be mulched and the roots kept moist. It will be an advantage if the plants can be staked, especially in windy districts. Top-dress Cucumbers under glass.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from June 5th to June 12th.

We have pretty well finished bedding out tender plants. We have a few surplus plants that will finally be planted in their reserve beds in the kitchen garden to produce cuttings, and save cutting the plants in the beds. And it is unwise to get rid of all the plants till they are established in the beds, as it will never do to have blanks. One of the worst features of the bedding system is the necessity for cutting the plants long before their beauty is over for the purpose of working up stock. It is true, of course, we can take up and store the old plants. They take up a lot of room, but this to some extent has to be done in the case of "Geraniums" especially. I find cultured people are going in more and more for hardy plants, which can be massed on the lawn or round its margin wherever a patch of colour may be necessary or desirable. But the average man—and we have to cater for the average man—still believes in Scarlet "Geraniums." I was talking to one of these average men a few days ago, and he said, "Give me warm colours—our climate needs them." Well, there is room for us all, and a mass of "Geranium" West Brighton Gem or Vesuvius are the brightest things I know, and may here be useful, especially where there is much greenery of tree, shrub, and lawn. During recent years Hollyhocks have done better with us, and we have planted them more freely, relying upon seedlings, and the plants are raised in a more natural way without artificial heat For autumn display a large mass of the Red-hot-poker plants (Tritomas) have a striking effect on the Grass, but

in a cold winter we find it necessary to protect with litter, but not till after frost sets in. Forget-me-Nots, in broad, irregular masses, have been very effective under tall trees, with the branches high up, and the Giant Cow Parsnip is a striking plant in large groups in such a position. It will look rough and ragged later on, but even this roughness is not inappropriate in the position. Bluebells, again, will be charming soon in semi-cold positions. Sowed more Ne Plus Ultra Peas, and made a last planting of Runner Beans, the white-seeded variety being a favourite with us for June planting. Mulched round Vegetable Marrows and Ridge Cucumbers with littery manure. The plants are starting away freely now and the mulch will keep the moisture in the ground. Cucumbers under glass are bearing freely. Light top-dressings and abundant moisture in the atmosphere are necessary. Leaves will not scorch where the atmosphere is saturated, though to save labour we usually, in the hottest weather, use a light shade. Red-spider are not seen where the conditions are suitable as regards humidity. Planted more Celery in trenches. Shaded the plants with branches laid across the trenches. The trenches were made a fortnight ago, and Lettuce seeds sown along the ridges. Mulched Cauliflowers and Peas in blossom. Planted Brussels Sprouts and early Broccoli.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observation permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

733—**Carnations unsatisfactory** *(Pole Axe).*—The plants have simply been ill-treated by the weather. They will grow out of it. There is no disease whatever.

734—**Lapageria leaves curling** *(J.).*—There are traces of green-fly on the leaves sent; that alone would account for the young leaves at the points of the shoots curling.

735—**Diseased Cauliflower** *(W. A. S.).*—Well dress land with gas-lime in October, let it remain as rough as possible all winter, and never grow a second Brassica crop twice running in same place.

736—**Barren Jargonelle Pear-trees** *(W.).*—The absence of fruit is probably due to improper pruning. This Pear should not be pruned in the same way as the others. A note on the subject will appear shortly.

737—**Peach and Nectarine trees not growing** *(Beginner).*—Looks like canker at base, but without further particulars we are unable to help. You give us no help. Please tell us something about culture or age.

738—**Various queries** *(E. Hole).*—Dress the land with nitrate of soda, 3 cwt. to acre. Your land is too heavy for Cherries, and not drained well enough. The other trees you name would do better. Cutting did good, not harm.

739—**Erica** *(M.).*—The family of Heaths is a very large one, and the same treatment is not suited to all the species. It is impossible to answer your question, unless you tell us the name of the Heath, or the section to which it belongs.

740—**Rose suckers** *(H.).*—If the suckers came from the stock, and not from the scion, you were right in cutting them off; but the probable effect upon the Rose that appeared to be dead can only be judged by one who sees the plant.

741—**Repotting Tacsonia Van Volxemi** *(M.).*—It will never do to put the young plant into a big pot at once. You do not mention the size of the plant. Gradually shift it on until it is put into the pot that you intend it to ultimately occupy.

742—**Ants on plants** *(J.).*—If the ants have formed their nest at the root of the plant, pour upon them a quart of warm water, in which a piece of camphor of the size of a Hazel-nut has been steeped. This will destroy them without injuring the plant.

743.—**Oil-stove for greenhouse** *(A Beginner).*—No doubt, if sufficient care be exercised, you can heat your small structure well enough with an oil-stove to enable you to keep in it through the winter many plants that require protection. As to the best kind of oil-stove, we can only recommend you to read the advertisements in GARDENING, and judge for yourself. Give us some further particulars as to your building, and we will answer the second part of your question.

744—**Arum Lilies not flowering** *(M.).*—It is impossible to say, having only your note to guide us, why your Callas do not flower. Perhaps you have given them too much heat. As a rule, excessive heat favours the development of leaves at the expense of flowers.

745—**Botanical names of plants** *(C.).*—The Latin names of the plants you mention are as follows: Mother of Thousands (also called Wandering Jew), Saxifraga sarmentosa; London Pride, Saxifraga umbrosa; and Hard Fern, Blechnum Spicant; "Gold Balls" is another name for Buttercups (Ranunculus).

746—**Exterminating Gout-weed** *(R.).*—Yes, you may exterminate Gout-weed in the way recommended for Nettles—*i.e.*, cutting them down until they die from exhaustion. If you want to get rid of the weeds quickly it would be a good plan to cut them down, and put a foot or more of soil over the plants.

747—**Peach blister** *(S.).*—The Peach-trees are probably growing in a draughty place. Break up the cold currents which rush along the side of the wall by some shelter in spring, and the blister will disappear. We have seen temporary screens of Reeds placed across the border for this purpose with effect.

748—**Cape Gooseberry** *(D. B.).*—Physalis peruviana is the Cape Gooseberry, but a variety of this, named P. peruviana edulis, is the one used for dessert, the fruit being yellow instead of purplish-red as in the species. It will grow in any cold greenhouse provided you can keep frost from its roots during a severe winter.

749—**Mr. Martin Smith's Carnations** *(W. B.).*—The characteristics of these Carnations are in the improved form of the flowers and great variety of colour. Also in the vigorous habit of the border varieties. Mr. Martin Smith has also been successful in raising many fine varieties of Malmaison Carnations from seed.—J. D. E.

750—**Heliotropes fading** *(R.).*—The fading of Heliotropes soon after they were purchased may be attributed to insufficient light, or excess in watering, or to a sudden change of temperature. They are grown for market under the most favourable conditions, and a change in those conditions cannot fail to affect the health of the plants.

751—**Cucumber leaves destroyed** *(Winter).*—There is no trace of insects or parasites of any kind on the leaves, which certainly appear to be destroyed by sulphur on the pipes, or to be sun-burnt. The nasty smell is caused by the decaying leaves. Why they have so suddenly been destroyed would be best known to the person in charge of them.

752—**Transplanting evergreens** *(P.).*—September is the best month. You should get the opinion of some experienced person in your neighbourhood as to whether the trees can be safely transplanted, as, before this can be determined, they must be seen, and the nature of the soil and other matters taken into consideration.

753—**Pinks and Musks eaten** *(B.).*—If it is not slugs or rabbits, and there is no sign of the depredator, it is most likely the leather-coated grub, a very tiresome pest, which feeds at night, and buries itself underground by day; it is of a brown colour, with a very tough skin. It may be observed feeding at night after dark if a lamp is used to discover it.

754—**Culture of Cucumbers** *(Amateur).*—You can let the bottom fruits grow; but do not allow them to ripen. Ninety degrees of heat in the middle of the day will not be excessive. Of course, there is danger in giving an excess of water; but the condition of the leaves, which become yellow, may be due to some other cause, such as an attack of red-spider.

755—**Pegging down Dahlias** *(S.).*—Plant the Dahlias 3 feet apart, and peg down at once, and keep them pegged down till they come into flower. It is a matter of but little importance whether you begin in the centre in planting them or not, as, when pegged down, the ground is all covered. If you begin in the centre you do not tread on the plant already set out.

756.—**Watering Mushroom-beds** *(W.).*—Beyond a mere sprinkling to keep the surface moist, Mushroom-beds do not require watering till they have been in bearing some time, and are showing signs of exhaustion. If the bed has a covering of hay to keep the heat steady and the moisture free from evaporating, very little water will be required till it is necessary to give a filip to the spawn.

757—**Ventilation of greenhouse with mixed collection** *(Inquirer).*—You should have ventilators at the top of the house—say, about 9 inches wide and 15 inches long. These should be so fixed that the aperture may be regulated as desired. Endeavour to keep the temperature of the house at about 70 degs. or 75 degs.; it should at no time be 85 degs., or the growth will be weakly.

758—**Cutting back standard double Thorn** *(W. B.).*—I have a great many standard double Thorns, but I do not touch them with a knife. Many persons have an idea that trees must be cut back, or cut somehow. I never touch ornamental trees, and they grow into the shape that nature intended them. If pruning has been done, and if people will do it, as soon as the leaves fall in autumn is the best time.—J. D. E.

759—**Basil** *(F.).*—The seeds should be sown about the middle of April in a genial temperature, and the seedlings, when large enough, may be potted off singly or pricked into boxes or seed-pans, or into a frame on a slight bottom-heat, from which they should be transferred to their positions in the open-air about the beginning of June. It succeeds in a light, rich soil. The plants should be 6 inches apart, and well-watered until established. Sow at once.

760—**Pink spring flowers** *(W.).*—The late-blooming qualities of Silene pendula is an unfortunate feature in one of our most pleasing and effective of hardy spring flowers, and, unhappily, we have no other plant which, obtained so cheaply and readily, will give to us in the spring such a delightful hue of colour. Double red and pink Daisies seem to be the cheapest substitutes; but these cannot be raised from seed, and do not always bloom as early as desirable. Aubrietias bloom early; but have only mauve or purplish hues. Border Polyanthuses, from seed sown now, or, better still, Primroses, bloom quite early, say from middle of March to middle of May, and, though it is difficult to [fix distinct colours, are very effective.

761—**Apple and Pear-trees not breaking** *(C.).*—The treatment has been right, and they may yet break. The Quince and Paradise-stocks are not adapted for all soils, and possibly the soil of your garden may not suit them. At any rate, you cannot do better now than leave them as they are till the autumn, and then prune into shape, cutting to good sound wood. Recently-moved trees do occasionally remain dormant for a year.

762—**Plant for exhibition** *(Ignoramus).*—We are in a difficulty here. You do not say the size desired, nor how much heat you could keep up. Nor do you give us even a guide as to whether a soft or hard-wooded subject is wanted. As there is so much time yet, please give some more particulars of your requirements. You cannot lift Calceolarias from the open while in full growth. Why not grow in pots from the first, treating them the same as in the open, but plunging them in the pots?

763—**Old Asparagus-beds** *(A. J.).*—Your best plan will be to make new beds in the proper way, and leave the old beds until you have the young plants in bearing—which will not be for two years after the time of planting. Always plant good strong yearlings in spring—it is not yet too late if you get good plants. When the new beds are in proper bearing throw the other plants away altogether. Old plants of Asparagus may be worth forcing, but they are never worth moving to new plantations.

764—**Variegated Malmaison Carnation** *(Tree Carnation).*—This is not a Tree Carnation, and it is unusual for them to have variegated foliage. I have had plants take the variegated form, but they generally grow out of it again. A plant with prettily variegated foliage would be admired by some; there are none such in existence known to me. Show it at some of the meetings of the Royal Horticultural Society, and members of the trade present would soon apprise its true value.—J. D. E.

765—**Propagating the White Jasmine** *(J. R.).* The White Jasmine will strike from cuttings put firmly in the open ground during the autumn months. The cuttings should be formed of the current year's shoots, rejecting the tender upper portion. If a close frame is at hand they may be put in at any season, but root quickest during the summer. For insertion in the open ground, the cuttings may be from 6 inches to 12 inches long—three parts of this must be buried in the soil; under glass they may be smaller.

766—**Climbing plants for plaster wall** *(T. M.).*—Ampelopsis Veitchi would cling well, and is most handsome, but it is not evergreen. You can select from such Ivies as Hedera angularis aurea, yellow foliage; H. madeiriensis variegata, a beautiful clear silvery and pink variegation; and H. maculata argentea, a variegation of green, white, and red. These are very showy and not rank growers. We do not know of any bronzy self-climber that would suit your purpose except the Ivy called atropurpurea.

767—**Exhausted Vines** *(W. C.).*—There are two courses open to you—either to cut the old Vines down to the bottom, and chance their breaking, or take them out, make a new border, and plant young Vines. Strong, young Vines, planted now, might bear two or three bunches each next year if well fed. The old Vines, if they broke strongly, would bear pretty well a full crop. This question you should be able to decide in consultation with your employer. Our verdict would be in favour of young Vines and a new border.

768—**Difficulty with boiler** *(L.).*—Undoubtedly the excessive length of the smoke-pipe in question has a great deal to do with the fault complained of, though condensation, producing both water and tar, often occurs with this class of boiler. We do not know of any coating that would be likely to remedy the evil, and can only suggest that, if the iron smoke-pipe were replaced by an earthenware one, such as a number of ordinary glazed drain-pipes, neatly cemented together, the fault would certainly disappear.

769—**Neglected Vine** *(Vine).*—Your ideas as to winter treatment are correct. Three shoots will be sufficient, also you may prune to spurs 18 inches, which will be quite close enough. If you give roots new soil you must take care to preserve them, and mix some bone-meal, wood-ashes, or old mortar rubble with the turf—fresh cut turf is not best. Can you lay it in heap, stacked, Grass side downwards for a few months; say cut it in October? Make new border in March. Pipes would help you if you force, but are not a necessity.

770—**Planting Mulberry, etc.** *(D.).*—The house standing high on gravel, the border should be at least 3 feet deep. The rotten turves will do admirably. Add to each cartload 1 cwt. of crushed bones, with no other manure at present. Nourishment can be given, when required, by rich top-dressings, and by a free use of liquid-manure. Plant the Vines along the front of the house, 4 feet apart. The best Vines for the early house are three Black Hamburghs, one Buckland Sweetwater, and one Foster's Seedling. For the late house, plant two Black Alicantes, one Lady Downes, one Gros Maroc, and one Golden Queen.

771—**Selaginella** *(B.).*—The Selaginella sent apparently suffers from excessive moisture, compared with the temperature of the house in which it is grown, for, although fond of moisture, and, indeed, requiring to be constantly damp at the roots, Selaginellas, as a rule, do not keep their foliage long if frequently wetted overhead, and especially if the water used for the purpose be very cold and the house in which the plants are grown be much warmer. Most Selaginellas also require to be struck afresh now and then, or they get very bare at the base, principally those belonging to the sections of denticulatæ, apodæ, Mertensi, and stolonifera.

772—**Weakly Vine** *(A. P.).*—The Vine is all right at present, if it is making any growth at all. Keep the roots supplied with water, and as soon as the shoots extend more rapidly mulch with manure, and water with liquid-manure. A tablespoonful or so of artificial manure, sprinkled on the surface, and watered in, will be beneficial. Train up the shoots from 12 inches to 16 inches from the glass, as they progress. A greenhouse that is without artificial heat, and that only gets the afternoon's sun is not the best position for Grapes; still good Grapes have been grown in such aspects. If the Vine shoots are syringed freely every afternoon when the weather is bright it will not only encourage growth, but keep off the flies. In bad cases fumigation with Tobacco must be resorted to.

773—**Failure of Peaches** (*Y. G.*).—The Peaches are affected by mildew, which has injured the skin of the fruit, and caused them to crack. This is not an uncommon disease, and is usually found on badly-nourished trees. Sometimes both the fruit and foliage are attacked; in other cases the fruit, or, perhaps, the leaves only suffer. It is found most frequently on trees with roots in a sour, wet, and unwholesome soil; though, on the other hand, it may arise from extreme dryness. When it appears on healthy, well-nourished trees, it has been caused by cold currents of air blowing through the trees; at any rate, a check of some kind must have been given. The spores of various forms of mildew, or fungus, are always present in the atmosphere, ready to attack any plant or tree predisposed to the disease.

774—**Azaleas, etc.** (*E. M. H.*).—Your outdoor Azaleas we presume either the Ghent or the mollis, are best raised by seeds and layers. Layer as soon as bloom is past, and lift the second autumn afterwards. Take soft cuttings of the Indian or greenhouse Azalea now. Small pieces should be inserted in very sandy peat under a bell-glass, keeping them in a uniform temperature of 60 degs. to 65 degs. Deutzia gracilis may be rooted either as soft pieces taken now, or as ripened cuttings at the end of the year. The former need much the same treatment as Azalea indica, but ripened shoots will root outside if inserted in sandy loam upon a sheltered border during September or October. They are also readily increased by division of plants lifted in the autumn or early spring. You are not likely to succeed with Camellias under Vines.

775—**Crinum Moorei** (*A. N.*).—This is the most handsome of all the species of Crinum, and when grown as a greenhouse plant it requires a large flower-pot with ample drainage. Flower-pots 15 inches to 18 inches in diameter are not too large for flowering bulbs. The plants should be fully exposed to the sun in autumn to mature their growth. It will flower freely when fully grown. The first person to flower it in Europe, I believe, was the late Dr. Moore, of Glasnevin Gardens, Dublin. His bulbs were planted in a border in front of the conservatory without the slightest protection, and flowered sometimes in autumn and sometimes in spring. It is thus flowered in many gardens in England, but the bulbs are protected with rough litter in winter. The bulb grown by "A. N." ought to flower, but it probably requires more pot room.—J. D. E.

776—**Cucumbers failing** (*G.*).—The symptoms described by our correspondent are those of exhaustion; but this can hardly be from over-cropping in his case. Some growers succeed well with Cucumbers with no ventilation; but it does not appear to have answered in the present case. Without seeing the plants, and knowing more about their management than is supplied in our correspondent's letter, it is difficult to say what has been wrong; but we should recommend a top-dressing of turfy loam, mixed with some good artificial manure, at the rate of a pound and a half to the bushel; we should advise also that some ventilation be given, accompanied by a thin shade in bright weather, to get the plants into a proper tone to bear good fruit. It matters little how high up the plants bear fruit. A strong, healthy plant will bear fruit anywhere; but it is never advisable to allow more than one or, at the most, two fruits to hang from one joint—there is nothing gained by it. It is impossible to say how many fruits a plant will carry without seeding.

777—**Plants for decorations.**—Kindly inform me what are the best plants to grow in pots, in succession, for decorations indoors? I have a cold-frame, but no heat.—SUBURBAN, *Streatham.*

*** *This is a large order for a single cold-frame, but you might have alpine Auriculas from April until June, Freesias and Ixias in pots during May and June, Begonias from end of June until autumn, Hyacinths, Tulips, and Crocuses in various small batches from January until April, and Mignonette to fill in the blank between autumn and the arrival of bulbs. Mignonette might be raised so as to be available for nine months of the year.*

778—**Asparagus plumosus seeds.**—I purchased seeds of Asparagus plumosus and sowed in cool greenhouse on March 1st, and also later on in hot-bed and frame. Neither sowing came up. Will some person (through GARDENING) give me instructions? Will it do to sow in the open in a cold-frame?—T. M.

*** *You are not likely to succeed with the African Asparagus in a cold-frame; but a heated one, and also a greenhouse, should raise them. Your seed was probably too old.*

779—**Strawberries.**—How many pounds of Strawberries should be gathered from 500 plants brought on in 32-sized pots to ripen fruit in May under glass, to form an average crop in an average season?—L. H.

*** *From ½ lb. to ¾ lb. of fruit per plant is a good average.*

780—**Wood growth instead of fruit.**—I have a Hamburgh Vine, eight years old, in a cool greenhouse. It only had twenty bunches last season, which was the most it ever had. I mulched it early last autumn with dry cow and decayed stable-manure, thinking it would increase my fruit crop; but I now find instead of fruit I have plenty of wood growth—in fact, it is running wild with side and leading growths running 3 feet. Kindly instruct me?—WILLIE.

*** *You give us no details of culture. You must not let the Grape run wild, as you will destroy your crop next year. We fear you have not rested or have not pruned it enough. See "Garden Work" weekly in this journal for details.*

781—**Liquid-manure.**—Is soap-sud-water a good manure for Plum, Pear, and Apple-trees, and how often should it be applied?—NOVICE.

*** *Yes, this is excellent for fruit-trees, and you may apply liberally once a fortnight. Of course, if your soil is naturally wet and stiff you will not apply so freely.*

782—**Packing Tomatoes for market.**—I should be much obliged if you would tell me in GARDENING how to pack Tomatoes for sending long distances by train to market in small quantities (a few pounds), and in large (several pounds)?—NEMO.

*** *Pack in layers in shallow boxes at this season; later in small baskets with a cross handle, 6 lb. to 12 lb. in a basket.*

783—**Planting Rhubarb.**—When ought new plantations of Rhubarb to be made?—C. J. C.

*** *Early in spring. Give a light and very rich soil, move deeply, and plant 3 feet apart each way. Other queries next week.*

784—**Plants for bare ground.**—I have grubbed up a quantity of Laurels, intending to cover the ground with creeping plants. Is it too late to do anything now to prevent the bare appearance of the ground all the summer? What creeping plants are there which require little attention after they are once started.—MOWGLI.

*** *You can fill the ground with cheap bedding plants, or plant Nasturtiums, prick out Phlox Drummondi, Zinnias, Asters, Marigolds, and many more. If beneath trees we would choose the common Periwinkle, Ivies, and St. John's Wort. If in the open the same would also do, but you can add many Saxifrages, Sedums, &c.*

785—**Dividing Primula cashmeriana.**—Can you or any reader tell me proper time to divide Primula cashmeriana which has just finished blooming?—C. G.

*** *Give some little covering from excessive moisture during winter, and divide as soon as new growth appears early in the spring.*

786—**Lime for slugs.**—I do not quite understand the instructions you gave in GARDENING for May 22nd, as to the way of applying lime for destroying slugs. You say, "Get a large lump of fresh lime, place in a close tong-basket or box, and add just enough water to make it powder down quickly, without being moist." I have tried placing the lime in an old basket, but the very first drop of water turns it into a paste, and it does not at all "powder down." I get the lime from a lime-kiln near, and it is quite in a powder when I receive it. Would it not do to dust on the plants in this state? I shall be much obliged for your explanation, and am sorry to have to trouble you.—ABBEY.

*** *The fact of the lime being in a powder when received from the kiln explains your difficulty. It should be a "lump" of unslaked lime. Surely the fact of our writing "a large lump" plainly indicated that dusty, air-slaked lime was not meant? Get a lump and you will soon see the difference.*

787—**Vegetables for show.**—What eight kinds of vegetables would gain the highest number of points when being judged in competition?—QUERIST.

*** *It depends upon the material staged, how grown, and the season shown. Roots are not thought so much of as other things, Peas are better than Beans also. You give us no particulars of show, the date, or if dishes are single or collections. A collection should always include Potatoes (one dish). Tomatoes are a strong dish. Cauliflowers must be pure in colour, not coarse, and quite clean.*

788—**Trapping sparrows.**—My garden is so infested by birds (mostly sparrows), which are very destructive, that I should be grateful if you could inform me how to construct a trap, that I may reduce their numbers?—R. BALLARD.

*** *You will see this question answered in* GARDENING, *May 29, p. 183. We know of no trap that will prove efficacious.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Mrs. Dickson.*—1, Berberis aristata; 2, Bird Cherry (Prunus Padus); 3, If bearing red berries in autumn, Guelder Rose (Viburnum Opulus), too faded to distinguish otherwise.——*F. M. S.*—Cheiranthus alpinus. —— *Lesmahagon.*—Cydonia japonica; we have not heard that it was in any way poisonous.——*R. Plymton.* — One of the Blood-flowers (Hæmanthus carneus).——*Over.*—1, Kerria japonica fl.-pl. (Double Jew's Mallow); 2, Calycanthus floridus; 3, Selaginella cæsia; 4, Aloe gasterioides; 6, Alkanet (Anchusa italica); the Rose is Souvenir de la Malmaison; cannot tell name of shrub without flowers.——*Lady Grove.*—Judas-tree (Cercis Siliquastrum).——*J. R.*—1, Celsia arcturus; 2, Phlebodium aureum, but much shrivelled; 3, Hemerocallis flava (Day Lily); 4, Centaurea montana; 5, Spiræa callosa; 6, Spiderwort (Tradescantia virginica).

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

A. Beach.—We do not know of a more practical book upon these subjects than a bound volume of this journal. Many other subjects are included, and by the help of the index it is simple to turn to any. Grafting and budding we are illustrating in the present volume. We know of no good distinct book on the subject.

Catalogues received.—*Garden Watering Apparatus, Garden Hose and Fittings, etc.*—Messrs. Merryweather and Sons, Hydraulic Engineers, London.

BEES.

SEASONABLE WORK IN THE APIARY.

ALL hives and appliances should be kept in readiness that no time may be lost when swarms issue from the old stocks, as delay in hiving often results in the loss of a swarm. If the Bees happen to cluster in a position where the sun strikes upon them strongly, they will soon take their departure for a cooler retreat, and may locate themselves in some roof or hollow tree, quite inaccessible to the Bee-keeper. It is well, also, to decide beforehand as to the position the hives containing the swarms are to occupy. They should never be placed close under a wall or fence, but if possible, should have a pathway behind them, and face south. Much valuable time is saved, perfect and straight combs ensured, and profits increased if swarms are started on full sheets of comb-foundation, as in the

MANUFACTURE OF WAX large quantities of honey are consumed by the Bees, which they transfer from the honey-bag to the stomach. After they have remained some time in a state of repose, and the chemical process has taken place, the wax is exuded from the wax pockets on the abdomen in the form of small flakes, which are removed by the legs of the Bee, masticated by the jaws, and then deposited in little rough heaps for the use of the comb-makers. As comb foundation contains sufficient wax for the formation of the honey cells, the Bees need only to draw it out, and the honey which they would otherwise have to consume in the manufacture of wax is, of course, stored in the combs, to the advantage of the Bee-keeper. In the manufacture of artificial comb-foundation, the wax is melted by steam in a large cauldron, and clarified, after which it is strained into a deep, oblong vessel, when the sheets of foundation are prepared by dipping boards of the right size into the melted wax, and quickly withdrawing them, when the sheet of wax can be readily stripped off. The sheets of wax are then passed through embossed rollers and impressed with the facsimile of the base of the cells.

SURPLUS HONEY.—If it be wished to prevent swarming in order to obtain as much honey as possible, giving room below the brood chamber will usually check the swarming fever. In extracting honey from the combs some care is necessary to avoid that which is unsealed, as this, being unripe honey, will not keep well, being liable to ferment. In bringing stores into the hive the Bees do not fill the cells at once, as the excess of water has to be evaporated from the honey, and it is sometimes removed from the cells in which it was first deposited to others. When the cells are full, and the honey in fit condition for sealing up, the Bees deposit a drop or two of poison from their venom bags into each cell. This has an antiseptic influence due to the presence of formic acid. If extracted honey is required bodies of shallow frames can be tiered up upon the hive as long as the honey-flower lasts, and the honey taken from the combs by means of the extractor. Speaking generally we get about double the quantity of extracted honey over that of comb honey from a hive.

FRAME-HIVES.—In selecting hives care should be taken to see that they are constructed of the best dry, well-seasoned wood, free from flaws and cracks. Each hive should contain ten bar frames running at right angles with the entrance, two division boards, and three thicknesses of quilting for covering the tops of frames. The floor-board should rest upon deep joints, so that the hive is well raised above the ground; if legs are fitted to the joists, so much the better. The body should not be fixed to the floor-board, but be easily lifted from it, that it may be easily cleaned when necessary without disturbing the Bees. A wide alighting board should be provided, so sloped as to allow all moisture to run off, and a porch over the entrance, having a groove to prevent rain dripping on to the alighting-board. Sliding strips of wood forming a zig-zag entrance are very useful in checking robbery and fighting. The bars should be of standard size, and have saw-slits to receive comb foundation, and the ends be fitted with metal dividers, while the roof should be ridge-shaped, and high enough to receive a crate of sections.

S. S. G., *Uxbridge.*

Fugitive Bees (*Constant Reader*).—We fear you cannot claim compensation for the loss of your swarm of Bees. So long as you kept them in sight you could prove your right to them, but having left them in your neighbour's hive, in which they had taken refuge, your title to them ceased. We do not understand from your letter whether it was the swarm or your neighbours who were "not at home." When you went to the garden the second time, still having left the Bees unattended, you cannot, of course, prove that they did not leave the hive

while you were away. Swarms are very erratic, especially in hot weather, and it is quite possible yours may have again taken wing, and if there are still Bees in the hive in question you have nothing whereby to prove they are the same that you saw enter it. It is very unfair to a brother Bee-keeper to leave empty hives in one's apiary, as runaway swarms are very much given to making a home in the nearest unoccupied hive they come across. Cannot you get some third party (a Bee-man, if possible) to intercede? We should advise you not to keep a swarm waiting in future while you are "dressing" the hive. In our many years' experience in Bee-keeping we have never done so, and consider it to be as useless as is the old custom of "banging" a swarm with door-key and shovel. Many a good swarm is lost through not being promptly hived.—S. S. G.

POULTRY AND RABBITS.

POULTRY-FARMING.

The simplest form in which poultry can be turned to account is as egg-producers. Here the labour involved is of the slightest. Feeding takes place twice daily—morning and evening; the water-vessels may need replenishing at mid-day, when green food (if not always available), grit, and lime refuse may be doled out, and eggs have to be collected daily. This, with the occasional cleansing of the Fowl-houses, means the requirements of the Fowls, so far as labour is concerned, and it cannot be said to be at all a heavy item. Of course, this applies to the laying stock alone, but it practically means all the work to be done in connection with the adult Fowls from October to September inclusive. As some readers may be prepared to assert that the work above described may involve the employment of a strong lad or even a man for several hours daily, I would at once state that if the pens be conveniently arranged and are easy of access I would undertake to do all the work in connection with 500 laying hens in less than two hours daily, on an average, throughout the year—including Sundays, of course. This means a trifle more than a full day's work per week, and cannot, therefore, be looked upon as a very heavy item when totalled up for the year. But it must be kept in mind that this applies only to the laying stock, and that in concerns where egg production is alone considered I would not advise anyone who contemplates taking up the industry to limit his work to the sale of eggs only. In the long run it will be far more profitable and economical to embrace a wider area. In the first place, it is utterly impossible for any poultry-keeper on a large scale to buy his pullets so cheaply as he can rear them, and it is still more difficult for him to obtain birds of such a high class as he can breed himself. Plenty of birds can doubtless be bought every year, but they are not bred with the purpose of making first-class layers, but merely for purposes of sale. The poultry-farmer, on the other hand, should strive each year to raise the standard of his layers, for the addition of even half-a-dozen eggs to the annual average means a substantial increase to the net receipts, particularly if the eggs are abundant at midwinter; but this is not all that can be done in this way. A poultry-farmer should be able to supply the wants of others as well as himself, both as regards pullets and stock birds generally. He should therefore endeavour not only to breed three or five hundred pullets for his own yards, but as many as possible in addition to sell in August and September to poultry-keepers who have no facilities for rearing on their own account. This would pave the way for still another source of income, namely—the sale of surplus cockerels. The cockerels would not be in the front rank as table Fowls, because the sitting eggs would be from hens mated with a view of producing laying stock, but it should be remembered that chickens of any kind which may be hatched in March or April, provided they can be got into plump condition early in the summer, are bound to sell, simply because table Fowls at that time of year are very scarce as a rule. Such cockerels should be marketed as soon as possible, because the room they occupy will be far better utilised by the pullets, and, as most of the cockerels will be cross-bred birds, nothing will be gained by keeping them until they reach adult size. If, however, some pure-bred chicks are secured, by all means retain the most promising cockerels until the autumn or the following spring, as they would then command a ready sale at good prices, especially when the merits of the yard became known. Next, there is a question of broody hens as a source of income to be considered. Wherever there are winter layers there are certain to be plenty of broody hens available in the early spring, and these should be sold for sitting purposes if possible. Many people who hatch only a few chickens each year keep none but Fowls of non-sitting breeds, and prefer hens to incubators. They are, therefore, glad to buy reliable sitters in the regular hatching season, and prices range from 3s. 6d. to 5s. per hen. The sale of such Fowls in February and the two following months is a distinct advantage for two reasons. First, it enables the owner to secure a really handsome figure for surplus adult stock, probably twice as much as would be obtainable at the end of the summer; and, secondly, he gains room for his other Fowls at a time of year when overcrowding cannot be allowed, by the clearance of stock which would give much trouble when the hot weather comes. Lastly, there is the annual draft of surplus hens and adult stock, which would be disposed of immediately the laying season is over. They may be either sold as they are, or be fattened during the moult, or kept in store condition, and be offered as stock birds for the next breeding season. To ordinary poultry-keepers, such Fowls would prove of great value for this purpose. DOULTING.

Scaly legs in Fowls (*H.*).—You should well scrub your Fowls' legs daily with soap and warm water; then apply zinc ointment well rubbed in. You must use your own judgment as to the amount of scrubbing required, as some birds are affected worse than others. I should not expect a bird to die in an early stage of the attack, although, of course, some cases are more severe than others. It would be well to dress all birds which may be suffering in this way, and I should also limewash and thoroughly cleanse the roosting-places and perches occupied by the ailing birds.

BIRDS.

Sparrows and Roses.—Mr. Piper, from whose articles in GARDENING I have gathered much *re* Roses, etc., in the issue of May 22nd speaks of the usefulness of the House Sparrow *re* green-fly on Roses, and no doubt what he says is perfectly true; but few of us grow the queen of flowers only; the majority of us grow something else, such as Carnations. Well, this winter—a mild one—they (House Sparrows), which could not have been hard up—at least, not in my garden, as they eat quite half my Pigeon's corn—pecked down 110 seedling Carnations as if you had put one of Ransome's mowers over them. To regard the House Sparrow as a friend is with me quite impossible; he is my worst enemy—artful and impertinent. Green-fly I can settle without his aid. And I find that nothing keeps him off Peas like thread (I have now seven ranks untouched), and off Carnations like a small rook-rifle. — G. T. PADBURY.

Death of Canary (*F. G.*).—Your bird died from one of the most serious complaints to which Canaries are subject—namely, inflammation of the lungs, brought about most probably from exposure to a cold current of air. The only thing likely to save a bird suffering from an acute inflammatory condition of the substance of the lung is warmth. It should be kept in a high, moist temperature of 80 degs. to 90 degs., day and night, which must be gradually lowered as the gravity of the symptoms subsides. Your bird was quite young, but from the state of its plumage appears to have been kept in a very smoky atmosphere, and not to have been indulged with a bath very frequently. Caged Canaries require good ventilation, and can bear neither a hot, close room nor exposure to cold. Old birds have long, sickle-shaped claws, while the feet and legs are hard, dry, and scaly.—S. S. G.

The Barn Owl (*G. T. Padbury*).—This elegant bird in its wild state is a hunter by night, taking immense numbers of the various species of field mice which frequent hedge-banks and meadows, as well as the common mouse to be found in barns and rick-yards. When there are young to be fed the number of mice destroyed nightly by a pair of these birds is very great; indeed, the havoc made by them among these little depredators of the corn-rick and barn prove the Barn Owl to be a great friend to the farmer and gardener. Snails and worms, although very nourishing food, are hardly suitable diet for a young Barn Owl. If you cannot procure mice for it, feed it upon bits of lean meat; it will soon be able to procure mice for itself, as you are keeping it in a hay-loft. The claws of the Owl being armed with strong, hooked talons, it is enabled to grasp its victims with great firmness, and the usual mode of putting an end to their struggles is by crushing in the skull with its beak.

LAW.

Damage from Rabbits (*J. F.*).—We think that you cannot obtain damages. This question has been asked several times in these columns, although the circumstances of each case might be somewhat varied. "If a man encourages the growth of wild Rabbits upon his farm, and the Rabbits stray from his land to the land of his neighbour, this is no trespass for which the breeder of the Rabbits is responsible; for when the Rabbits leave his land they are no longer his Rabbits." The only remedy, therefore, for the person whose crops are injured is the capture and destruction of the Rabbits. This is the law as regards adjoining occupiers. It is somewhat different in the case where the owner of land lets the land and reserves the sporting rights. Here the landowner (or his sporting tenant) is entitled to breed and keep such quantity of game as might be ordinarily reared and kept upon the land, but if by over-preservation the farmer's crops are injured, the latter has a remedy in an action for damages. What degree of preservation constitutes "over-preservation" is a matter to be decided from the consideration of the circumstances of each case.

Valuation question (*Reader*).—It is impossible to give you a satisfactory reply, as so much depends upon the crop and the locality. In all probability you will be asked to pay more than the crop is really worth, and we think it would be the best plan for you to go above market price in order to secure the hay. It would make it very awkward for you if the outgoer decided to sell the whole of the hay with liberty of removal. Sales of mowing Grass in the neighbourhood would give you some idea as to its value. Could you not arrange the matter by arbitration in the usual way? About £1 per acre should be the outside price to pay for hay-making, including mowing, carting, and thatching. In very fine weather the work might be done for much less. You do not say whether you have an agreement in which the valuation with the outgoing tenant is arranged for. If so, this should be followed.

Vinery resting on neighbour's wall (*B. A.*).—This question presents some elements of difficulty; but provided that the late occupier of the wall in question was also the owner of the same, or that if the owner of it (though not also occupier) was aware for more than twenty years that your vinery was supported by that wall, you have gained an easement of support of which you cannot now be deprived. Neither can you be compelled to pay any acknowledgment. Should the wall be removed or so interfered with as to disturb the support afforded to your vinery, you must at once take steps to defend your easement, and the help of a solicitor will be imperative.

Quitting allotment garden (*J. H.*).—You do not say whether this allotment garden is merely a pleasure garden or is occupied in whole or in part as a market garden; probably it is occupied as a market garden or in a similar manner. The distinction is important, because as there is no written agreement as to notice to quit, if occupied in whole or in part as a market garden, a year's notice to quit is necessary by virtue of the Agricultural Holdings Act 1883;

whereas, if the holding were not within the scope of that Act half a year's notice to quit would be sufficient. Presuming that the holding is within the scope of that Act, then: (1) A year's notice to quit is necessary, and the notice must terminate with a year of tenancy. You do not say when the year of tenancy ends, but presuming that it ends at Christmas, you cannot put an end to the tenancy until Christmas, 1898, and to effect this you must give notice at or before Christmas, 1897. (2) The allotment garden is probably not more than two acres in extent, and if so, C. may, under the Allotments and Cottage Gardens Compensation for Crops Act, 1887, claim compensation on quitting for crops, including fruit growing upon the holding in the ordinary course of cultivation, for labour expended upon, and for manure applied to the holding since the taking of the last crop therefrom in anticipation of a future crop, and for fruit-trees and fruit bushes planted by him with the previous written consent of his landlord. (3) C. may not remove trees, nor yet bushes, unless these have been planted for sale as trees or bushes, and not merely for the growth of fruit.

NOTICE TO ADVERTISERS.

In consequence of the Whitsuntide Holidays we shall be obliged to go to press early with the next number of Gardening Illustrated dated June 12th. Orders should reach us as early as possible in the week preceding to insure insertion. No advertisement intended for that issue can be received, altered, or stopped after first post on Friday, the 4th of June.

SUMMER BEDDING BOX, 250, free, 3s.—6 doz. Asters in 6 varieties, 12 each Petunias, Ageratums, Stocks, Single Dahlias, Marigold, Phlox, Dwarf Nasturtium, Sweet Pea, Scabious, Everlastings, Cornflower, Sunflower, Viola, 24 Summer Chrysanthemums, hardened for immediate planting. Also Sweet Pea Collections, 144, in 12 varieties, free, 2s. Shirley Poppies, Myosotis, and Silene pendula, all at 1s. 6d. 100, free. Iceland Poppies, 25, 1s., free. Tomato-plants, in or outdoor, 2d., 1s., free. Marrow-plants, 6 Cream, 2 Pen-y-byd, free, 1s. A few Clearance Boxes of 144, for immediate blooming, free, 2s. I hold a large lot of Vegetable Plants that are coming on nicely and will be ready shortly. 200 Lettuce, free, 1s. 6d.—J. DUCKER, Florist, Haxey, viâ Doncaster.

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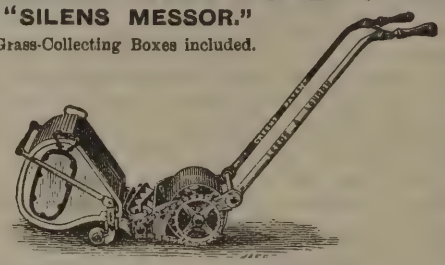

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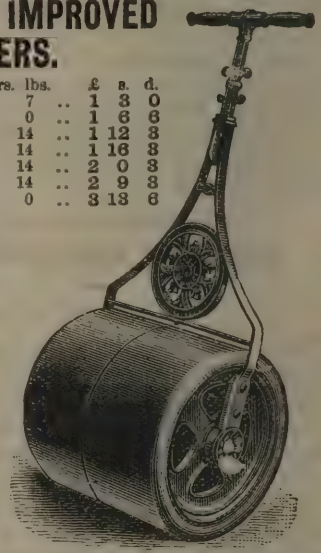

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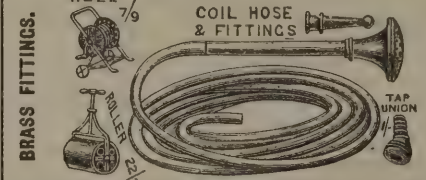

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No. 953.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JUNE 12, 1897.

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FRUIT

RED-SPIDER ON FRUIT-TREES.

The season is at hand when this pest begins to prove troublesome to gardeners, and a few notes may not be out of place as to the best methods of dealing with it. Red-spider is much more prevalent in some places than others, especially where shallow, gravelly soils prevail. Anyone at all acquainted with the life-history of this insect will know that it thrives best in a hot, dry atmosphere, and that shade and moisture are inimical to its well-being. Attacks of red-spider may be traced to various causes, foremost of which in the case of Vines are over-heating of the hot-water pipes and not affording adequate supplies of moisture in the shape of damping and syringing to counteract them. The attack may also be set up by neglecting to thoroughly wash all the woodwork in the houses as well as scrubbing the Vines during the winter months, especially when red-spider has been prevalent the previous season. Another fruitful source is the forcing of Strawberries. When these have to be accommodated on shelves in vineries and Peach-houses through want of space elsewhere, it is very seldom that they can be kept clear of spider, and unless measures are taken when the plants are removed by taking down the shelves or scrubbing them if they are fixtures and well washing the walls, it is not long before red-spider makes its appearance on the Vine and Peach leaves. Once firmly established on the Vine, it is no easy matter to get rid of it, but matters may be simplified if a vigilant watch is kept and the enemy attacked as soon as detected. The spider then has no chance to get ahead, and the labour involved is but slight compared with that required to combat a bad attack. With Peach-trees this insect can be held in check by the daily syringings until the time arrives for lessening the amount of moisture and the withholding of it altogether as the fruits approach maturity, when an opportunity is afforded for it to again increase. But as the Peach crop does not remain on the trees for any great length of time, vigorous measures for the eradication of the red-spider can be adopted as soon as the last fruit is gathered. Fig-trees, especially when grown in pots, are apt to be attacked if kept too dry at the roots. Sparse syringings and too dry an atmosphere in the houses will also lead to an attack. Pines are sometimes attacked when the surroundings are kept too dry, but I have had no actual experience with it myself.

Winter Cucumbers and early Melons are very liable to attacks of red-spider, especially when they are planted near to the hot-water pipes. In the case of Cucumbers, if noticed when only a few leaves are infested, these may be removed and burnt, and measures can then be taken to guard against future attack. With Melons this cannot, or rather should not, be done, as it is essential that all primary leaves should be preserved intact until the crop has ripened. Judicious damping and syringing should keep down the pest, other palliative measures being careful attention to watering and sprinkling the floor with guano or liquid-manure to produce ammoniacal vapours. These remedies may also be applied to Cucumbers, French Beans, Figs, Strawberries, and Pines. Peach-trees should be well washed after the crop is gathered with soapy-water, and if the attack is a bad one, add a handful of sulphur to every 4 gallons of water. This must be made into a paste first before putting it into the water, otherwise it will float instead of being held in solution. There are also various insecticides which could be employed, but the above is the best remedy I am acquainted with, and if the water used is cold, the insects will be quickly subdued. With regard to Vines, if a sharp look-out is kept and the person in charge scans the foliage daily, the presence of spider will be noticed before many leaves are infested. When taken, as it were, in the initiatory stage, skilful sponging with soapy-water or a solution of a well-proved insecticide will generally clear spider off, especially if the affected leaves are syringed for a few days afterwards with clean cold water. Another remedy is to close the house somewhat earlier than usual on a bright day and run the temperature up to 90 degs. or 95 degs. The syringe should then be vigorously plied, thoroughly damping all surfaces, flooding the floors with water also when these are composed of flags or tiles. This will produce a saturated atmosphere which red-spider cannot endure, but it must not be indulged in too often, or the bloom on the Grapes will become affected. I have also known the garden-engine to be requisitioned, and after closing the house thoroughly washing every leaf on the Vines. I would not advise this being done unless perfectly clean water can be obtained. Water that leaves a sediment behind it should never be used for this purpose, or the Grapes will be spotted. Soft water or that from a pond would be the safest to use, and it should be skilfully applied to avoid wetting the bunches too much.

When the attack is a bad one, the best way is to sulphur the pipes, as no half-measures are of any service. The proper way to do this is to heat the pipes towards the close of the afternoon until the hand cannot be borne on them, and then to paint them over with sulphur. This should be applied with a whitewash-brush, painting the top sides of the pipes in all parts of the house. If the pipes are as hot as they should be, plenty of fumes will soon be given off, and this may be allowed to continue until a haze pervades every part of the house, when the valves should be shut down. From half to three-quarters of an hour should be a sufficient time, and in no case should the valves be left open longer than one hour. The sulphur mixes best in soft-soapy-water. Ventilation must be attended to early next morning, opening the sashes sufficiently to allow the fumes to escape before the sun shines on the roof. It is also a good plan to wash the sulphur off the next morning. I once saw a very bad case of rust from nothing else but the neglect of this precaution. The pipes were hot and the sun burst out hot early in the morning, and before the ventilators could be opened the mischief was done.

One application is generally sufficient to kill the red-spider, but if on examination any are still found alive, repeat the dose the following evening. I must not omit cautioning those unacquainted with the use of sulphur as an antidote that under no circumstances should it be used until the Grapes are of good size or until they have stoned, otherwise rusting of the berries will ensue. Between the period of the Grapes setting and stoning, attacks should be dealt with by means of any of the remedies previously described. Much may be done to secure immunity from attacks by giving careful attention to watering, also to the daily dampings and syringings, mulching the surface of inner borders, watering the floors with liquid-manure at closing-time, and putting a little guano in the evaporating-troughs every few days. Ventilation is also another important item, and on bright mornings the heat should be shut off the hot-water pipes and the fires damped down early. Sun-heat and fire-heat together will soon lead to an attack of spider being set up.

In conclusion, it is almost impossible to keep quite clear of the pest, but at the same time a great deal may be done to ward off attacks if attention is given to the foregoing rules. Above all things keep a good look-out and scan the foliage daily. The practised eye will then at once detect the presence of the insect should it put in an appearance, and enable remedial measures to be at once adopted and before much harm is done. A.

Raspberries.—These will now have thrown up a quantity of suckers, and in the case of all—except new varieties which may be required for increasing the stock—their number should be reduced to that needed for furnishing fruiting-canes next season. The quantity left will depend on the system of cultivation adopted and the quality of the ground. If grown in single rows, then one in every foot will be ample, but when grown in clumps four or five should be allowed to remain at each stool. In making the selection choose those that are best placed, that they may have plenty of room to develop. Avoid, if possible, those that are at a distance from the old canes, as such would have to be bent to get them into position when tying in winter. When this is done, if the ground be light and of poor quality, give a mulching of decayed manure to prevent the soil from drying too rapidly; but on heavy land this is not necessary, as the canes are apt to grow too rank if over-fed. Some varieties with me make canes from 12 feet to 14 feet in length, and such, if not allowed plenty of room, do not ripen thoroughly, and consequently suffer in severe winters. Prince of Wales is a very prolific variety, and useful for cooking, though very apt to suffer when over-fed, therefore on such ground it is not advisable to water unless the plants are suffering. Autumn varieties that were cut down to the ground will have made a number of young growths; these should be reduced to five or six at each clump, removing the smallest and weakly ones. Where Superlative was cut back in winter to induce the lower buds to break, strong shoots will be the result, and these give a supply of fruit in the autumn far superior to that of the October varieties. Plants of this class will need feeding

during this dry weather to prevent them flowering prematurely. Young plantations, too, must be kept watered, or they will not make canes sufficiently strong to be of any use next season. —R.

ORCHIDS.

DENDROBIUM THYRSIFLORUM.

Though showing a small plant only, the characteristic growth and graceful racemes of flower are well shown in the annexed illustration of this species. It is one of the most common, yet one of the best and most useful of the evergreen kinds, easily grown, and very free-blooming. The ground colour of the sepals and petals varies considerably, embracing pure white and various tints of flesh and rose colour. The lip is the same in all cases—a deep golden-yellow that enhances the beauty of both the pure white and rosy-tinted segments. It is a free-rooting and vigorous-growing species, and may with advantage be given fairly wide pots, the drainage being ample, never less than half their depth. The compost should also be used in a rough state, the peat being of the best quality, and mixed with half its bulk of clean, fresh Sphagnum. Newly-imported plants of this Orchid often arrive in such a condition that, to anyone unacquainted with the influence of a warm, moist house they would not seem of any value, not a green leaf to be seen on them, and the pseudo-bulbs shrunk and shrivelled out of all shape. It is not to the bulbs or leaves, however, that experienced growers look; they note the plump, round eyes at the base, knowing well that with heat and moisture the former will swell up to something nearly approaching their normal size, and the latter will break freely and soon form new pseudo-bulbs to take the place of any that are dead or far gone in the plant. The process of establishing this Orchid does not differ materially from that of any other Dendrobe, and as this has been often described in detail it is only necessary to say here that, for the first season at least, considerable care is necessary in watering, shading, and selecting the compost. The plants should at first be potted up in clean crocks alone, removing a few of these from the top and substituting a little peat and Moss as this is seen to be necessary—that is, when roots begin to push. In potting established specimens disturb them as little as possible, but allow no sour peat or other material to remain, and when filling up with the new peat and Moss place plenty of rough crocks and charcoal with the relays. The plants should be kept well above the rims, as the new shoots start very low and are apt to damp off in the earlier stages if water lodges about them. They do not require so long a growing season as the deciduous members of the genus, but D thyrsiflorum does not finish up quite so quickly as the smaller-growing evergreen kinds. The plants may be grown either in the Cattleya-house or with other Dendrobes in the East India division, but if in the latter they must be taken out for a month or two during the resting season, or they will not flower satisfactorily. Though less water is required at this time than when growing freely, they must not be dried to any great extent. This is often the cause of their failing to start properly in spring, the fluid forcing up flowers in lieu of growth, to the great detriment of the plant. If frequently dewed over with tepid water while growing, and the atmosphere kept nicely moist, insects are rarely troublesome. As soon as the flower-buds show their colour in spring, the plants should be placed in a cooler and rather drier house, as the blossoms will then come on slowly and attain their full size and colour, they also lasting better than if grown in heat. The usual time they last is from a fortnight to three weeks, and very beautiful do well-flowered plants look when associated with Cattleyas, Odontoglots, and other Orchids in the flowering-house. D. thyrsiflorum is a native of Moulmein, whence so many fine Dendrobes have been introduced, and has been in cultivation since 1864.

Dendrobium thyrsiflorum.

Treatment of certain Orchids (*C. S. B.*).—Odontoglossum Rossi, O. cordatum, O. maculatum, and O. crispum that have been recently imported should on no account be placed, as you suggest, in the Cattleya-house. It should be remembered that these species in their native habitat grow at very high elevations, and under artificial cultivation they cannot be kept too cool during the hot summer months. Newly-imported plants, if subjected to the warm atmosphere of the Cattleya-house would undoubtedly produce weak growths, and fail to give a satisfactory amount of bloom. Your plants of Miltonia Phalænopsis would thrive best in a shady position in the Cattleya-house, and the M. Roëzli in a similar position in the plant-stove. As your plant of Jasminum gracillimum does not appear to thrive satisfactorily we would advise you to turn it out of its pot, pick out as much of the old soil as possible without causing injury to the roots, and repot it into equal parts of turfy yellow loam and sandy peat. While the plant is making new growth the stove is the proper place for it; but after it has done blooming a short rest in a somewhat lower temperature is advisable.

Advice about Orchids (*Ignoramus*).—Odontoglossum crispum (Alexandræ) should be grown in pots and stood down upon the stage in the coolest house available during the hot summer months, and in winter where the average temperature is about 50 degs. O. Rossi should be planted in shallow pans that may be suspended to the roof in the same house. Both species require to be kept fairly moist at the root at all times, and well shaded from bright light or strong sunshine. The Maxillaria should receive the same kind of treatment as Odontoglossum crispum, but will thrive best if placed at the warmest end of the house. Oncidium flexuosum and O. divaricatum may be grown either in pots or shallow pans, choosing a shady position in an intermediate temperature. Cœlogyne cristata should be grown in a warm greenhouse where the summer temperature fluctuates between 60 degs. and 70 degs. by night; a few degrees higher by sun-heat by day will do no harm. A light shading is necessary only when the sun is powerful. At all other times this species should have all the light possible. During the growing season water should be copiously afforded, and an occasional syringing overhead on bright days will assist in keeping the bulbs plump and the foliage clean and healthy. When the new bulbs are fully made up less water will suffice, and only enough should be given to prevent the bulbs from shrivelling. C. cristata may be planted in Teak-wood-baskets, but perforated shallow pans are preferable. Miltonia spectabilis will require identical treatment in every way as for the preceding species. Dendrobium Wardianum, D. nobile, and D. Findleyanum should be cultivated in shallow Teak-wood-baskets or pans; suspend them in a light, sunny position in the ordinary plant-stove, and afford abundance of water at the root throughout the growing season. When at rest these Dendrobiums should be kept in a cool vinery or greenhouse, where they may obtain uninterrupted sunlight, and only very little water is necessary to keep the newly-made bulbs from shrivelling. We do not know a Dendrobium as D. Frazer. All the species of Orchids enumerated above will root freely in a compost consisting of peat and Sphagnum Moss in equal proportions; this should be well mixed together, adding a few pieces of crock or charcoal to assist porosity. The drainage must be ample and free; about one-half of the pots or baskets should be filled with materials for this purpose. The flowering season of Odontoglossum Alexandræ and the Maxillaria is during spring, O. Rossi in December, Cœlogyne cristata in January and February, Oncidium divaricatum and O. flexuosum early summer, Miltonia spectabilis in the autumn; Dendrobium Wardianum, D. nobile, and D. Findleyanum produce their flowers during the earlier months of the year.—W., *B.*

CYCNOCHES CHLOROCHILON.

I was pleased to see an illustration of this interesting Orchid in Gardening, June 5th. Cycnoches, or as the name implies, "Swan's Neck," is one of the most curious and interesting families of Orchids under cultivation, and the large fragrant flowers of C. chlorochilon have secured for it a place in the front rank. This species has been known to produce both male and female flowers on the same plant, the appearance of which is extremely interesting to the botanist, and to the curious also. The flowers, although quite distinct in character, are identical in colour in both sexes. Although Cycnoches chlorochilon has been known in European collections for upwards of fifty years, the above peculiarity had not been recorded or even observed until within the past few years. From time to time a great many plants of this species have been imported into this country, and after producing strong flower-spikes for one or two seasons have become exhausted, and in the majority of cases have dwindled away altogether. The principal causes of this have been, in the first place, allowing the plants to overflower themselves before becoming thoroughly established; secondly, through insufficient sun-heat during the autumn months to properly ripen and mature the newly-made pseudo-bulbs. At the present time young growths are pushing from the base of the old bulbs; the plants should now be shaken out of the worn-out compost, cut away all dead roots, then place the plants in shallow Teak-wood baskets, with a compost of peat and Sphagnum Moss to root in. Tie the strongest of the bulbs to the wires of the basket to hold the plants firmly in their places. Suspend them well up to the roof-glass on the lightest side of the stove or Cucumber-house, water them sparingly at first, then when the roots and growths are well advanced, gradually increase the supply. As the young growths form their new bulbs, the plants should be exposed to full sunshine until the bulbs are fully completed. When the leaves commence to change colour the amount of water at the root must be gradually lessened.

W., *B.*

Pyrethrum Mont Blanc is a pleasing double white variety, and very useful for cutting. It is one of the best of its class.

ABUTILON IGNEUM.

This dwarf Abutilon is far more suitable for pots than the taller-growing varieties. It produces large flowers of a deep rich red in great profusion almost throughout the year. Like all the Abutilons, it needs a great deal of nourishment in the form of rich soil, mulches of manure, and water, but if well-supported, makes a good decorative plant for the conservatory or the drawing-room, even in winter. Abutilons are all the better for being planted out in summer, gaining fresh vigour, and being free from insect pests in the open air if given good soil, and not neglected in the matter of watering in dry weather. Carefully lifted in October, before severe frosts occur, and sheltered in the greenhouse, the mass of buds formed during the autumn will open well, and make the plants highly decorative. If kept in pots throughout the summer they should receive two good shifts in the year, with rich soil and plenty of liquid-manure when in bloom. Cuttings of this Abutilon do not root readily unless given the help of a bell-glass; they may be put in (using sandy, spent soil) during May, or any part of the summer, shading them from the sunshine, and keeping them moderately moist till rooted, when they should be potted separately and pinched back several times. I. L. R.

A Dwarf Abutilon (Abutilon igneum). From a photograph by Miss Mitchell, Lustleigh, South Devon.

Caltha parnassifolia.—This is a form of C. palustris, but so distinct as to amply warrant the name. Moreover, it is a North American plant and comparatively scarce in our gardens. It seems to have been confused with Ranunculus parnassifolius, a totally different thing. The present plant is a true Caltha. When the plant is strong and flowering it is as distinct as it well can be from its type palustris. Its almost round and toothed foliage forms a central, almost rosetted tuft, and from the tuft the procumbent flower-stems radiate wheel-spoke fashion for nearly a foot, so that a strong plant in flower presents a sort of golden ray nearly 2 feet across, with a central tuft of deep green and succulent herbage.

Fruit in Cornwall.—It is a very bad year for fruit in Cornwall, owing to the cold winds and cold nights. Strawberries seem to be almost the only exception, and are full of fruit, which will soon be ripe.—Helston.

TREES AND SHRUBS.

NATIVE SHRUBS *VERSUS* PONTIC RHODODENDRONS.

We have lately been much exercised by the dismal effect of masses of Pontic Rhododendrons fringing drives, thinking of the immense gain in utilising native shrubs in similar places. Let those who love the Pontic Rhododendron have an acre or two where they want it; but using its dismal fringe as a foreground of every opening by drives is a great mistake. The same dull green remains long in the spring, when we might have bright and beautiful masses of Broom, Furze, fragrant Sweet Brier and Wild Rose, and the pearly buds of the Sloe. Even if we had no good native shrubs, at the worst, we would not have this wall of dark, dull green in front of us, shutting out, as it often does, all chances of light and shade, and hiding the stems of beautiful trees. Nothing is more wanted in country seats, within and without the garden, than some just appreciation of the beauties of our native plants and shrubs. We have not even to plant some of them; seed of Furze or Broom at this time of the year scattered about bare places and newly-made fences and banks, cart-tracks, and recently planted woods, would soon come up, and in a year make a handsome show. Sloe, Wild Roses, Dog-wood, Wild Guelder Rose, Heather and its fine varieties may easily be bought by the hundred, and be put in as young plants in autumn. Another reason, if any were wanted, for the plentiful growth of handsome native plants, is their freedom from disaster in our often severe springs. This year in certain places Lilacs and other early exotic shrubs are cut to pieces, whereas the frost did not make any difference to our native bushes. Unhappily, these late frosts occur so often and so frequently spoil our favourites, that it is worth considering the things that do not suffer from their attacks.—*Field.*

Prunus pseudo-Cerasus (the Japanese Cherry).—For the past two or three weeks this Cherry has provided a lovely picture among spring-flowering trees. One can well believe that its coming into bloom has been made one of the epochs and festivals of the year. Even among Cherries it is remarkable for the abundance of its blossoms, especially when their size and substance are considered. A variety known as Cerasus Watereri has flowers often 2 inches across and of a beautiful blush tint. Whilst none of the forms are absolutely pure white, some are much paler than others, and different names have been given them. A plant somewhat similar to this, and not infrequently confounded with it, is Prunus serrulata. This, too, has large double flowers, and is almost as beautiful as the other, but, as a rule, it comes into bloom a fortnight later. Trees of medium size may always be distinguished by their curious branching habit. The main stem is erect for a few feet, then suddenly divides into several branches, which stand away from it in an almost horizontal direction; the tree then possesses nothing in the shape of a leader. For giving us four or five weeks of floral beauty in spring these two species are unsurpassed, and neither ought to be absent from any garden. —B.

Ribes aureum.—Although not so striking a shrub as the red-flowering Currant, this species, being now fully in bloom, makes a very pretty display. It is one of the unarmed Currants, growing to a height of 6 feet to 8 feet, and is of free, graceful growth, its smooth leaves being of a rather pale shade of green. The flowers produced in short, semi-pendulous racemes, are sweetly fragrant; they are of a golden-yellow colour, and each one is about ⅜ inch in diameter. There are several varieties in cultivation, some of which differ in the colour of the fruit, the most distinct being one named tenuiflorum, which has by some botanists been set apart as a distinct species. It is not so fine a plant as the ordinary aureum, its flowers being smaller and destitute of perfume. The true Ribes aureum is a native of Missouri, etc., whereas the variety tenuiflorum is a native of California and never occurs east of the Rocky Mountains.

Jew's Mallow (Kerria japonica).—There are three varieties of this shrub in cultivation—viz., the type, a double-flowered form, and a variegated one; of these the typical green-leaved single-flowered plant is the rarest in gardens. In some respects, however, it is the most beautiful of the three, being of freer growth than the variegated plant, and yet not having the somewhat coarse stems and flowers of the double variety. There are now bushes at Kew about 2½ feet high and half as much more in diameter, which are really charming in their wealth of blossom and neat, rounded habit. The flowers are each from 1 inch to 1½ inches in diameter, and bright yellow. The double-flowered variety was introduced as far back as the year 1700, and its identity was unknown for over a century, until, in fact, the year 1835, when the typical plant was sent from Japan. It was thought to be a Corchorus (a genus allied to Tilia), and in some gardens and nurseries the name of Corchorus japonicus still remains in use for the Double Kerria. All the forms like a rich, moist loam, and can easily be propagated from cuttings made of half-ripened wood.

Pyrus floribunda.—Amongst all the Pyruses now in bloom—and their name is legion—there is none that more fully realises one's idea of a perfect flowering shrub than this Japanese species. It could not have a more appropriate name, for its wealth of blossom is remarkable. Its flowers in the bud state are of a lively shade of rose, the fully expanded blossoms being much paler. Its beauty perhaps is greatest when half the flowers have still to open, the bright jewel-like buds mingling with the paler petals of the open flowers giving a charming blend of colour. There are several varieties of this shrub in cultivation, one of the best being var. atrosanguinea, the flowers of which, even when fully expanded, are almost as deep in colour as the buds of the ordinary form. Another good variety is known as Parkmani, or Halleana, and has double flowers. The species has a near affinity to Pyrus Toringo and P. Ringo, both of which are now in bloom. For practical purposes, however, they must be kept distinct, being of a more purely tree-growth than P. floribunda, and having larger flowers and fruit.

THE CENTAUREAS.

AN important family of plants is that comprising the Centaureas, of which the most beautiful of all is the Blue Cornflower. The various species display considerable diversity of form, some, such as C. babylonica, being fitted more for the rougher parts of the garden. We

Mountain Cornflower (Centaurea montana).

arrange the kinds alphabetically, and give many illustrations of the family—

C. ARGENTEA has Fern-like silvery leaves, and its bright colour and compact growth adapt it for bedding, but it must be always used with caution. Silvery-foliaged plants such as these must not be overdone.

C. BABYLONICA.—This is a very distinct plant,

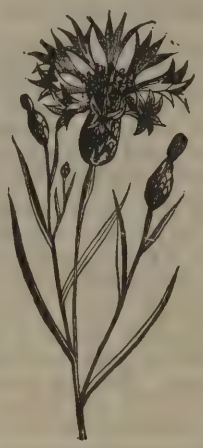
Centaurea gymnocarpa

hardy, and when planted in good ground send up shoots to a height of 10 feet or 12 feet. The flowers are yellow, but the silvery leaves are the more attractive. In groups or in rough or undulating parts of pleasure grounds it has a very fine effect. It is adapted for association with the tallest plants. A free sandy loam suits it best. Levant.

The Yellow Sweet Sultan (C. suaveolens).

C. CLEMENTEI.—This is a charming silvery-grey-leaved plant, useful to associate with such plants as the deep green Acanthus. It is preferable to the Artichoke, which is sometimes recommended as an early, grey-leaved plant, as it is of better habit and retains its foliage throughout the season. Flowers are of little account, and should be picked off.

C. CYANUS (Cornflower).—A lovely native flower, of which too much cannot be written. The ordinary blue variety is far more beautiful



Common Cornflower (Centaurea Cyanus).

than the rose and other shades. It is an annual plant and of very easy culture; in fact, it sows itself, and the young plants, standing our hardest winters, flower better grown in this way than when sown with the annuals in spring. The spring plants are weaker in growth and shorter

Centaurea babylonica.

than the autumn or summer-raised ones, attaining a height of 2 feet. They thrive in ordinary soil, and the flowers are delightful for cutting.

C. GYMNOCARPA.—This has silvery downy leaves, and arching, whilst they are prettily cut. A variety (C. plumosa) has the leaves much more divided and not so white. This plant is somewhat hardier than C. ragusina, but both require greenhouse treatment in winter.

Golden Knapweed (C. macrocephala).

Same soil, positions, and treatment as for C. ragusina. It may be used as an edging or bedding plant, but is very fine, too, as a single specimen.

C. MACROCEPHALA (Great Golden Knapweed).—This grows from 4 feet to 5 feet in height, and

Common Sweet Sultan (C. moschata).

has large rich yellow flowers. For naturalisation in semi-wild nooks and corners, or in positions where herbaceous plants must perforce compete with the roots of trees and shrubs, this robust and vigorous species well deserves a place as the largest and most effective of all the yellow-flowered Centaureas. In deep rich soil it forms an effective mass, and the flower-heads when cut

Centaurea Clementei.

are very effective arranged with other flowers, or even alone in a vessel with their own leaves.

C. MONTANA (Mountain Knapweed).—A well-known border plant, and more grown than formerly. Several varieties may be grown, the rich purple, white, and rose being the most charming. They are grown for their flowers by the market gardeners, being larger than those of the Cornflower (C. Cyanus).

C. moschata (Sweet Sultan).—A pleasing annual flower. There are two shades of colour—delicate purple and creamy-white. The first produces the finest flowers; both are valuable annuals during summer and winter. A calcareous soil is necessary to succeed well with them, and any soil deficient in lime should have some lime rubble worked into it to make it acceptable to these Centaureas. The best time to sow them is about the middle of April, and the position should be open and sunny to insure them doing well. Sow the seed where the plants are intended to remain, as they are, like many annuals, very impatient of being transplanted. After the seedlings are up they should be thinned out early, leaving three plants in each patch, giving them a distance of 1 foot each. Water them when necessary. They are now grown for market to a large extent. The plants attain a height of somewhat over 1 foot, and are natives of Persia.

C. ragusina.—A half-hardy silvery-leaved plant, useful for the summer garden, but must be cautiously planted. It thrives in the coldest situation throughout the summer. The propagating of Centaurea ragusina is a matter often attended with very indifferent results. It is, however, as easily, and may be as successfully rooted as Zonal Pelargoniums. When taking cuttings from the old plant they should not be cut away, but pulled off with a heel so that they may have a hard base. The small firm shoots should be chosen in preference to large ones. In making them the knife should be used as little as possible. Each cutting should be put singly into a small 2½-inch pot filled with a mixture of loam, leaf-mould, and sand, and put in a cold-frame. One good watering is sufficient until they are rooted; and if the weather is excessively damp, the lights may be drawn over them, and tilted up back and front, otherwise they may remain fully exposed. Treated in this manner I have rooted a batch of two thousand without losing twenty. Autumn is the best time to propagate them. They will fill their pots with roots in three weeks, and if there be plenty of house room they will make all the better plants by being shifted into 4-inch pots, where they will grow a little in autumn, and be nice and strong for bedding out next year. A cold-frame from which frost can be excluded is a suitable place for their winter quarters. The leaves should be kept dry, as they are rather liable to damp during the short days. Every favourable opportunity should be taken for air-giving; they also winter well in an airy vinery or greenhouse. Old plants are sometimes lifted and kept over the winter. Where large plants are required this is a sure means of obtaining them; but for ordinary bedding purposes autumn-struck cuttings are the best. C. candidissima is the same. The form compacta is, however, not so easily increased from cuttings, but it produces seeds much more freely, and although the seedling plants from them are not all of the same habit, they are easily sorted out and classified as regards size. Cuttings put in in March root freely, and make good plants by May. Those kept for stock should be placed in a greenhouse, the temperature of which is about 55 degs. in February, and as soon as they make a few leaves nip out the points. This will induce them to throw out a number of young shoots, which if put in a sandy soil on a brisk bottom-heat will emit roots in about ten days. Care must be taken not to water over the leaves, and the soil must not be allowed to get dry at the bottom.

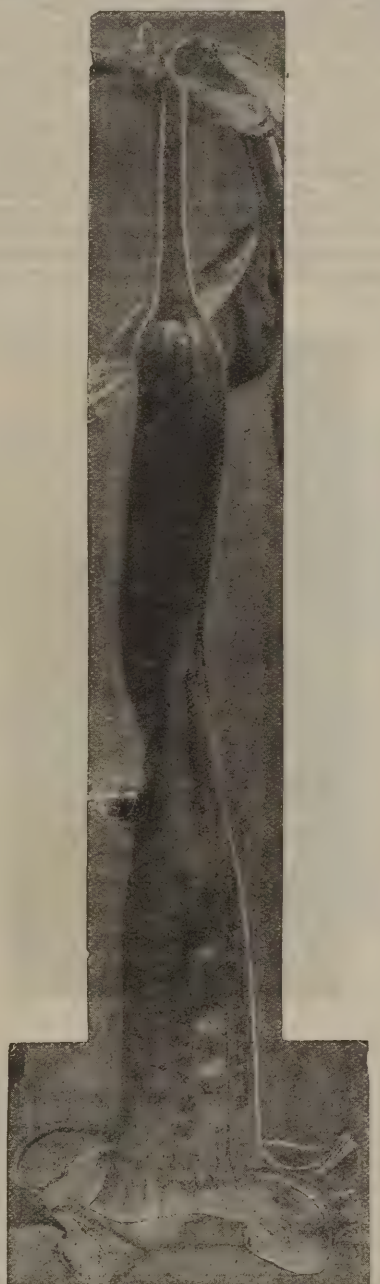
C. rutæfolia.—This grows to a height of 2 feet, the entire plant being covered with a dense white tomentum, as in C. ragusina. It is, however, of freer growth than that species, increasing in size throughout the summer till checked by the cold of autumn. The flower-heads are pure white, about one-half the size of those of C. ragusina, but much more abundant. The plant derives its ornamental value from the persistent whiteness of its foliage, which suffers less from rain than that of the species previously named. It succeeds in any soil, but is more compact in rather dry soils or on rock-work.

C. suaveolens (Yellow Sweet Sultan).—A favourite hardy annual and border flower of a citron-yellow colour, thriving best in light dry soil; should be sown and treated same as C. moschata. Sow in beds with flowers grown for cutting in April, raising a batch in frames, and sowing one batch in light, rich earth in the open air where it is to remain.

INDOOR PLANTS.

BRUGMANSIAS.

The following remarks have reference more particularly to the greenhouse varieties of shrubby growth. They are when well grown exceedingly handsome plants, their magnificent bell-like pendulous flowers emitting a delicious perfume during the afternoon and evening in the summer and autumn when planted out in the flower garden. The flowering season may be considerably prolonged when the plants are grown in the border of a cool conservatory or greenhouse. Brugmansias are of easy cultivation, and when well cared for will soon make large plants. The better way of growing them is as standards, so that when in flower their long, drooping flowers may be the better seen. In growing them in the flower garden a position rather sheltered, but with a good proportion of sunshine, should be chosen. The plants may be safely put out about the end of May in good soil, not of a heavy character. The best I remember to have seen used to be grown in a garden in Sussex, where they had been planted out from year to year for a long time, the same plants continuing to do good service. These plants were not potted in the autumn when lifted, but placed away in a cellar or shed where safe from frost, and there left all the winter to be brought out again and slightly started into growth before being planted out the following season. If I had my own way with Brugmansias I would prefer to pot them into large pots or tubs and turn them out of these; thus they would not die back so far in the winter, and when planting-time again came round they would make a quicker start. When cultivated in a house either in tubs or in the border an annual pruning should be given them early in the spring; thus treated they would be kept fairly within bounds. Under glass the chief enemy is green-fly, but if fumigation is carried out in time this need not give any trouble. For the open border of a large house a few standards with stems 8 feet or so in height would make a grand show. Their propagation is simple, merely taking off the young shoots in the spring and striking them on a gentle heat, one cutting in a small pot. When struck do not let the plants starve, but grow on as fast as possible, keeping them to the one stem until of good height. They will yield a few flowers the first autumn when planted out, but the second season they should make a good show much earlier. As they become older they flower more profusely, the growth then not being, of course, quite so luxuriant. On one occasion I remember taking up some young plants about two years old from the open and potting them up into 12-inch pots. They were then introduced into a gentle heat and gave several flowers during the early part of the winter. When planted out in the open ground Brugmansias are seen to the best advantage as centre plants to fairly large beds, with a carpeting of dwarf plants under them. They should not be smothered up with other things of tall growth, or the result will be a sacrifice of flower. B. Knighti is one of the best varieties in cultivation, with large, handsome, double flowers produced very freely. This sort is also of rather more compact growth, yet very robust; its foliage is also of a darker green, and somewhat longer than that of other kinds. B. suaveolens, another good white variety, is a profuse bloomer, its flowers being perhaps larger than those of B. Knighti, but single. B. sanguinea has flowers of a deep orange-yellow, tinged with green towards the base; this kind does not flower quite so freely as the white ones, but should be grown for its distinct character. B. chlorantha (see illustration) is free-flowering and well worthy of being included. The annual kinds are more botanical curiosities than anything else. H.



Brugmansia chlorantha.

Solanum Wendlandi (*C. S. B.*).—Here is what one of the chief authorities in the Royal Gardens, Kew, says of the plant, and it is grown there in the Water Lily-house with great success: "This plant has been for several years conspicuous amongst the climbers grown in the tropical Water Lily-house at Kew, its large heads, almost a foot in diameter, and crowded with flowers, nearly all expanded together, hanging from the rafters of the roof and remaining in beauty for several weeks. Kew is indebted for this Solanum to Mr. Wendland, Director of the Botanic Gardens at Herrenhausen, who sent a plant of it in 1882, with the information that it came from the colder regions of Costa Rica, where it climbs upon trees. It has thick, succulent stems, covered with prickles, slightly hooked when young, but becoming blunt and corky with age. The leaves vary in size and shape, those near the end of the branches being oblong, and about 4 inches long, while those lower down are 10 inches in length. The flowers are in compact, cymose heads on the ends of the growing branches, which, when allowed to hang downwards, have an elegant effect. Each flower is from 2½ inches to 3 inches across, pale lilac-blue, shaded and lined with purple. The plant requires a moist, tropical temperature, and produces the finest flower-heads when the stems are 10 feet or 15 feet long. The flowers are at their best in the month of August. In winter the leaves fall off, the plant remaining at rest until about March. Grown in a pot the shoots were too weak to flower. It was only after the plant had been luxuriating in a bed of rich soil for some months that its great beauty was revealed. As a climber for large, warm houses, one need not desire anything more suitable than this Solanum." As you give no details of culture perhaps your plant is in a pot, or a too cold house, as either of these shortcomings would result in unsatisfactory growth.

ROSES.

CLIMBING ROSES.

In whatever connection we use the Rose, when well grown it always has a pleasing effect; and as climbers we see them in their fullest beauty. Even our medium and free-growers, such as Marie Van Houtte, Mme. de Tartas, Caroline Kuster, and others, are most beautiful when used as climbers, and if not covering the space so quickly as the more rampant growers from the Noisettes and Dijon race of Teas, they have the great advantage of blooming freely in a much longer succession than is the case with any but Gloire de Dijon, Aimée Vibert, and William Allen Richardson, among the strong growers. It is an excellent plan when planting Roses to cover a high wall or the front of a house, to utilise both the extra vigorous and medium growers, placing the latter alternately between the strong varieties. This allows of our leaving more of the higher growth upon those generally alluded to as climbers, and secure against the objectionable bareness at their base, so difficult to avoid without cutting away much of the upper wood in order to induce a freer break at the bottom. Besides this advantage, we get a longer succession of bloom upon the wall or fence, and instead of quantities of young growth only, our wall is bearing several crops of bloom throughout the season. As a general rule, the extra vigorous varieties used as climbers only afford one really good show of bloom each season, and this early in the summer. After the glut of flower has passed from last year's wood the plant gives its best energies towards producing more long rods for the following season's display. Of course we cannot cut down to the base each season, as is the usual practice with Maréchal Niel and other climbers under glass. Such treatment would secure a good show the next season, but would leave our wall bare for a great part of the summer. It is better, in the case of wall Roses, to prune twice a year—once immediately after bloom is past, and again in early spring when laying in new wood for the coming display. After bloom is past go over the plants carefully and remove as much of the older wood as possible without sacrificing those healthy and vigorous breaks that are almost certain to be pushing out from near the base or shoulders of rods that have flowered. Prune slightly again in spring, this time merely cutting away unripened wood, misplaced growths, and any tips of rods that may be caught by frost. On no account cut away more than can be avoided of last season's wood where ripe and sound. This is the growth that will flower so freely as soon as the days get warmer, and will be thinned out again after the first display of bloom is past.

In pruning the medium growers we do not follow upon the same lines. These will generally allow of new wood being laid in as made. Where, however, several shoots are crowding one another, it is well to cut away the weakest and those most inconveniently placed. A succession of new growths and bloom will be formed from early summer until after the appearance of our first autumnal frosts. In the spring, simply cut back the stronger shoots to within six or seven eyes of the base, and weaker growths to three eyes. Where it happens to be necessary to fill in space allow the stronger growths to remain almost full length.

We must not forget that Roses upon a wall or house often have only a very narrow border, and as their roots are perforce obliged to grow one way, there is by no means the same root-run as when Roses are planted in the open. This necessitates a richer soil; more especially so on account of our clothing the wall as full as possible with vigorous growth, and the naturally hungry nature of such strong growers. The soil should be moved deeply and enriched with well-decayed manure. Pig and cow-manure are about the two best natural foods for Roses, and if well intermixed with the first 2 feet of soil will be a good support. Each autumn it is well to mulch with more dung, and if this be slightly covered with a little soil or Cocoa-nut-fibre refuse, the objectionable part of its presence is not noticed. All through the wet days of winter the feeding properties of this mulching are being washed down into the soil. If I was to choose between mulching and mixing the manure with the soil a foot or more below the surface, I should not hesitate a moment in selecting the mulch; the Rose cannot obtain any benefit until the manurial properties are soluble, and much of the goodness of buried manures are washed away before the Rose roots can possibly absorb them.

There is not enough attention given by the amateur to the fact of walls absorbing so great an amount of moisture. Unless the rain comes from one direction, very little, if any, of it benefits Roses and other plants upon a wall or fence. Even then scarcely any of our spring and summer showers are sufficiently heavy or prolonged to run down the wall to any appreciable extent. We also drain close to the foundations of our houses, and keep off roof drip by shoots. This means a very dry border as regards plant life, and we must not forget to supply a thorough soaking a few times during each summer.

While making new growth after flowering a good soaking of liquid-manure is a great help. The drainings from a stable or cow-stall are excellent when used freely and not too strong. It is upon our wall Roses, too, that we generally find the first of our insect enemies, and I need scarcely repeat the oft-given advice about early measures being less trouble and of far greater

Climbing Roses.

effect, besides avoiding the harm invariably caused by delay in the application of insecticides. The caterpillar, grub, and Rose-maggot are most to be feared; these so soon destroy a large number of buds and the tips of promising shoots. Look over the plants carefully early in the season, and you will have little trouble with these pests later on.

These notes would scarcely be complete without a list of a few suitable Roses for various positions. On a north wall we have few Roses sufficiently hardy to stand well season after season. Gloire de Dijon, Reine Marie Henriette, Aimée Vibert, Ruga, The Garland, Félicité-Perpétue, Climbing Jules Margottin, Rêve d'Or, and Emilie Dupuy are good climbers; while Madame de Tartas, Homère, Madame Lambard, and Souvenir de la Malmaison are hardy varieties suitable to plant for clothing the base. All of these are also good for an eastern aspect, but we can add Cheshunt Hybrid, Bouquet d'Or, and Mrs. Paul to the climbers, while Bardou Job, York and Lancaster, Jean Ducher, Viscountess Folkestone, and Safrano may be added to the medium growers. Upon a warm south-west aspect the Banksians, Lamarque, Maréchal Niel, Mme. Eugène Verdier, Climbing Perle des Jardins, Climbing Niphetos, Mme. Bérard, and Belle Lyonnaise, may be grown, with such tender varieties as Niphetos, Mme. Falcot, La Boule d'Or, Devoniensis, and Comtesse de Nadaillac between. A wall in such a position is the best possible place for our less hardy Roses, and affords them just the protection necessary to carry them through our uncertain winters. The worst enemy in this case is a sharp frost at night, followed by bright sunshine day by day, thus practically forming a succession of frosts and thaws. In this case it is well to protect against both frost and sun, and so avoid many extremes of temperature.

Almost any climbing or other Rose will thrive upon a west or south-west wall, and in addition to the varieties already named, the following dozen climbers are well worth growing: Albert de Blotais, Germain Trochon, Henriette de Beauveau, Kaiserin Friederich, Mme. Chauvry, Le Soliel, Monsieur Desir, Progress, Mme. Joseph Courbet, W. Allen Richardson, Claire Jacquier, and Crimson Rambler.

A. Piper.

TEA ROSES FOR HEAVY SOIL.

Will you kindly give the names of six Tea Roses which would succeed in a very heavy and rich soil, with plenty of sun, but fully exposed to north and east? Will you also kindly give the names of those Roses which are known as Dijon Teas? I have about fifty Roses, which were in the garden when I bought it, and which have no names. Can you name them if I send you flowers and foliage by instalments?—W. D. Stratton.

*** We shall have great pleasure in naming your Roses as far as possible. Please send flowers in two stages, and also a little of the growth. Pack so as to arrive fresh; so many correspondents send specimens in a piece of dry paper, with the consequence that when received it is impossible to recognise such withered fragments with any degree of confidence. Six good Teas will be found in Marie Van Houtte, yellow; Mme. Lambard, red; Safrano, apricot; Dr. Grill, coppery-rose; Mme. Hoste, pale yellow; and Anna Ollivier, rosy-buff. There are a good number of Dijon Teas, so called because they resemble the old favourite Gloire de Dijon in habit of growth. The best twelve are probably Kaiserin Friederich, Mme. Bérard, Belle Lyonnaise, Bouquet d'Or, Emilie Dupuy, Henriette de Beauveau, Mme. Chauvry, Mme. Eugène Verdier, Monsieur Desir, Souv. de Mme. Metral, and the two newer varieties of Germaine Trochon and Veyrat Hermanas.

Old Roses.—In our garden, which is a very old one, we had some favourite Roses, which have disappeared, and which we are anxious to replace. They are Mère de St. Louis, transparent pink blush; Oriflamme, brilliant carmine; Canary, delicate pale yellow, the earlier pinkish-brown; a dark crimson velvety damask Rose; Pink Boursault. Are these Roses still to be had? We have failed to get them.—Saltire.

*** Mère de St. Louis was introduced in 1852, and Canary in 1853. Oriflamme we do not know, nor can we find it in any list. You could probably get these old varieties from such nurserymen as Messrs. Paul and Son, Cheshunt, or from Messrs. Cooling and Sons, Bath.

Insecticide for Roses.—What are the proper quantities of paraffin-oil, soft-soap and water for making wash for syringing fruit-trees and Roses?—Insect.

*** Boil a pound of soft-soap in a gallon of soft-water for ten minutes. Remove from the fire, and add half-a-pint of paraffin-oil at once. Stir thoroughly, when it will resemble thick cream. Bottle this off, and use at any time in the proportions of half-a-pint to two gallons of water. Keep the mixture well stirred during use.

Treatment of Marechal Niel Rose.—I have a Maréchal Niel Rose in a pot in greenhouse, and wish to plant it outside, running it through the wall into the greenhouse. It has one principal shoot with several smaller ones from this. Kindly advise me if I must cut all the shoots away except the main one? Will you also please tell me of a preparation to get rid of worms in a lawn without injuring the Grass?—Northants.

*** Draw the Rose-shoot through intact, and

after it has flowered next year cut back to the base, giving every inducement towards more long growths for the following season. If overdone with worms, roll and sweep more frequently. Your soil is evidently very rich and moist, but you cannot eradicate worms and not injure the lawn.

Pyrethrum Mlle. Benary. — The Pyrethrums are now at their best in the hardy flower garden, and a very fine display they make during the early summer. They benefit by copious waterings during dry weather. There are many fine sorts, both double and single forms being very pretty and useful for all kinds of decorative work in a cut state. The variety under notice is one of the best of the double kind, the blossoms being beautifully chaste and delicate and the colour a pleasing shade of blush-white, deepening to the centre. A clump of this excellent sort about two or three years old is now a perfect specimen. Those on the look-out for a really first-class sort should secure a few plants of this.—D. B. C.

Diplacus glutinosus coccineus.—The ordinary form of Diplacus glutinosus with salmon-buff-coloured flowers has been long grown to a limited extent in many gardens, but the blossoms are not sufficiently attractive in colour to gain much popularity. Of late years, however, some brighter-coloured varieties have made their appearance, and of those I have seen the most showy is coccineus, which forms a highly ornamental plant at this season of the year, or rather one might say throughout the greater part of the year, as it blooms continuously for months together. Diplacus glutinosus is a native of California, and may be best described as a shrubby-growing Mimulus. It is of very easy propagation and culture if treated as a greenhouse shrub, or if planted out-of-doors during the summer it will both grow and flower well. Where a greenhouse has to be kept gay at all seasons a few neat little bushes of this Diplacus in pots 6 inches or 8 inches in diameter will be very useful during the summer.—T.

Zenobia speciosa pulverulenta — When in good condition this Zenobia will form a bush 3 feet or 4 feet high and as much through, while the arching arrangement of the branches is very pleasing and well calculated to show off the pretty waxy blossoms to the best advantage. For its full development this Zenobia needs a cool, fairly moist soil of a peaty nature. The typical Zenobia speciosa, as well as the variety pulverulenta, are very old plants in gardens, but they are not (the variety in particular) half as much grown as they should be.—H.

Bouvardia Humboldticorymbiflora. —This is now flowering freely, and the same plants will keep up a succession of bloom up to the end of October. Some of the plants are only a year old, while others have flowered well for several seasons past. This variety requires different treatment to most of the Bouvardias, for while other sorts cannot be stopped too frequently, this, when grown for cut-bloom, should not be stopped more than once, or cut-back plants, if they break well, should not be stopped at all. Potted in a rough porous soil and grown fully exposed to the sun, this variety flowers freely. It will bloom well when grown in the open ground, but where good pure white bloom is wanted the plants should be kept under glass. I have heard some complain that the bloom does not last well when cut, but if the trusses are cut when the first flower or so is open (and this should be done early in the morning), the flowers will be found to last for a considerable time if put into water before they get withered.—F.

SNAKE'S-HEAD FRITILLARY (FRITILLARIA MELEAGRIS) IN THE GRASS.

Our illustration shows the beauty of the native Snake's-head Fritillary grown in Grass, a charming and natural way to use one of our most precious wildings, which makes an English mead a treasured haunt in late April and early May days. It should be naturalised in Grass not mown early, and will be happy under the same conditions that suit the Star or Poet's Narcissi. There is a pleasing range of colours in the Fritillary, too, the bold flowers being on graceful stems, varying from almost pure white to rich purple shades, sometimes chequered in a distinct way. A distinct bed on the Grass is also attractive from the graceful bearing of the flowers and their beautiful colouring.

Snake's-head Fritillary naturalised in the Grass. From a photograph by Miss Willmott, Great Warley.

Sweet Peas a second year.—I enclose some blooms of Sweet Pea. They are from a plant of last year's sowing in a window-box in an east window. I always understood Sweet Pea to be an annual. How do you account for last year's plants surviving and blooming again? I do not think it is a case of the old plant sowing itself, as I have noticed that it has been green all winter. But I may be mistaken. Possibly seed may have fallen and germinated last autumn and somehow escaped the frost. Yet this is not easy to understand, as we had some severe frosts.—J. T. Bird. [*Evidently self-sown. The Sweet Pea is an annual.*]

Aubrietia purpurea (Purple Rock Cress). —There are many Aubrietias in gardens, but the one under notice is amongst the most pleasing of the family. The plant succeeds almost anywhere, being equally well adapted for the rock garden or open border; in fact, any exposed position in the garden. Its tufted growth, combined with a trailing habit, soon develop plants of large size, which are covered with purple flowers from March until June. Seeds may be sown in mossy chinks in old walls during March, and also in a shady border in April. Propagation by cuttings may be carried out during June and July in a shady quarter, and these pieces transplanted in November. As an edging to a border the plant is very useful.—B.

TEA PLANTS.

The Chinese varieties grew in England outside, until, when twenty years old, an extra inclement winter destroyed them; this occurred in several places. The large-leaved indigenous type requires much heat and moisture. In Assam I have seen this leaf develop at the rate of 1 inch in twenty-four hours, and it continued its rapid growth till it had attained 8 inches. Tea-seed is an oily nut, as difficult to preserve as that of Magnolia. As soon as ripe the seed is collected and buried in pits until it swells. Then the planter carries it to his ready-prepared ground for putting in the soil. I have seen it transported in Wardian cases to foreign lands, and I believe it will travel well, packed in cases of dry earth, if freshly gathered and sent by fast steamship. I grew a few acres of various kinds for my amusement, hence I write from experience. The bush, like a miniature Camellia, with its glossy foliage and abundant white flowers of sweet fragrance, makes a favourite hedge, frequently seen round the tidily-kept enclosures of Europeans, and occasionally clipped. I have seen the China Teas thriving in all kinds of soil—sandy, red loam of a ferruginous character, and forest mould. The indigenous plant likes shade and deep virgin mould, where it is to be found as a small tree, the trunk sufficiently large to furnish household implements to the ignorant villagers; but this was in days of yore, and seed-hunters have now replaced them. Hybrid Teas have been largely raised, and supply a superior leaf for manufacture. The China shrub will grow at a considerable elevation above the sea. In the mountain region of the N.W. Himalayas, the plantations were buried in snow for six weeks at a time, yet the produce was then the finest in the market, and fetched fancy prices. The primitive man of the jungles gathers his leaves of wild Tea, pounds them up on stones with a little salt, and stuffs the mixture into a hollow joint of Bamboo, as hard as he can drive it with a stick. He often carries this receptacle slung over his shoulder, and picks out his supply from the ugly brown mass at tea-time. W. H. L.

Aquilegia cœrulea.—Masses of this Columbine are now very attractive. It is impossible to over estimate the value of this kind, and the ease with which it may be grown or reproduced from seed should make it doubly welcome. The dwarf habit of the species, its characteristic long-spurred flowers, and the charming combination of colour are always pleasing. This is equally true of the many and variable hybrid forms.

GARDEN PESTS.

DISEASED WHITE LILIES.

The following two letters are examples of what we are constantly receiving in respect to the failure of White Madonna Lilies. As no doubt many readers are troubled in the same way, we give a note upon the subject, as remedies must be quickly applied to avert the evil :—

I shall be much obliged if you can let me know the reason why I am losing all my white Lilies this year? They have for many years been the pride of my garden, and now they are all going like the pieces of stem, cut off near the ground, which I enclose. The upper part looks fresh and green, and coming on for blossom; but from experience I know that in two or three days I should come in the morning and find them lying on the ground. I find nothing in the soil but a few ordinary worms, a few ants, and some woodlice.—W. H. Hinton.

Could you kindly tell me the disease that has attacked my candidum Lilies for the last two years?—L. Boyd.

*** The Lilies are attacked by the Lily-disease, a fungus. There seems to be a regular epidemic of this disease among white Lilies this year. If the plants are very badly infested, the best thing to do is to cut them down and at once burn them, so as to prevent the spores blowing about on to the other plants. If they are not very bad, syringe or spray them two or three times, after intervals of a few days, with Bordeaux mixture, which is made in the following manner: Dissolve 1½ lb. of copper sulphate in some warm water; slake 1 lb. of fresh burnt lime and make it about as thick as paint with water; strain and mix it with the copper solution, and add 11 gallons of water. The life-history of this fungus, like that of many others, is very complex, and it is impossible now to describe it. Be careful to burn, and not to throw away, any diseased plants or leaves, and get your neighbours to do the same; the spores may blow a long way.

Grubs infesting gardens (*H. L.*).—The grubs you sent are, as you thought, those of the daddy long-legs. The manure had nothing to do with your land being infested with this insect, but they are often very abundant in land just broken up from pasture. Insecticides will not kill the grubs, but watering with a strong solution of guano or nitrate of soda helps the plants, and is distasteful to the grubs. They may be trapped by burying slices of Mangold, Turnip, or Carrot near the plants; a small skewer stuck into each bait makes them much easier to find. If pieces of slate, board, or turf be laid about on the ground, the grubs will often crawl under them at night and may be found there in the morning.

Infested Pear-leaves (*J. W.*).—Your Pear-leaves are, I believe, infested by the Pear-leaf-mite (Phyptoptus pyri), but the leaves were much shrivelled and dried, so that we cannot be quite sure. Pick off and burn as many of the leaves as you can. As soon as the leaves begin to fall in the autumn syringe the trees with 3 lb. of sulphuret of lime, 1¼ lb. of soft-soap, dissolved in 10 gallons of water; or soft-soap 1 pint, paraffin-oil 2 quarts, boiling water 1 quart, thoroughly churned or beaten up for a quarter-of-an-hour, and then added to 10 gallons of water and kept well stirred, and then again in February.

Worms at root of Celery-plants (*J. Willis*).—The worm you inclosed is one of the hair-worms, belonging to the genus Mermis. Their life-history is a curious one. The eggs are laid by the female during the winter in the earth. They hatch in the spring, and the young, having found the grub or caterpillar of some insect, work their way into them and live there some time. They then make their way out to the earth again and lay their eggs. These worms are by no means uncommon, and after rain they sometimes make their appearance in large numbers.

Cineraria - leaves infested (*Gay Lothian*).—The leaves of your Cinerarias are infested with the grubs of the Marguerite Daisy-fly (Phytomyza affinis). No insecticides are of any practical use in dealing with this insect. The best thing to do is to cut off the leaves which have been rendered of no further use, and burn them. Those which are not so much injured should be carefully looked over, and the grubs killed by pinching the leaf at that part; if the leaf be held up between the operator and the light, the grubs can generally be easily seen. As there are two or more broods of this insect during the year it is very essential to kill as many of the grubs of the first brood as possible.—G. S. S.

Caterpillars on Gooseberry and Currant bushes (*Eager*).—The caterpillar that is attacking your Gooseberry and Currant-bushes is that of the Magpie-moth (Abraxas grossulariata). Try syringing with the extract from ½ lb. of Quassia-chips, 5 oz. of soft-soap dissolved in 10 gallons of water; or ½ pint of paraffin-oil, well mixed with 10 lb. of soap and a little hot water, then add 10 gallons of water and keep well stirred, so that the oil may not float on the top of the water. In the winter pick off any leaves that have not fallen with the others and burn them, and all the dead leaves under the bushes should be burnt, as they often have the chrysalides among them. The moths may be easily caught in a butterfly-net, as they fly slowly, and are often seen in the day-time.

Curious growth on Rose (*W. Rayner*).—The curious growth on your Rose is caused by a fungus (Uromyces ulmariæ), which is sometimes very common on Roses, but never, as far as we know, to do any injury. However, it would always be safe to cut the affected parts off and burn them.

Fir-trees attacked by insects (*H. M.*).—Your Firs are attacked by one of the aphides. Syringe or spray the trees with lime-water; or 1 quart of paraffin-oil thoroughly mixed with 10 lb. of soft-soap, added to 50 gallons of water, and kept well mixed.

Failure of Beans (*J. T. Bird*).—I suppose, by what you say, that your Beans are attacked by the Bean-aphis (Aphis fabæ), also known as the "black-fly" or "black dolphin." If they are, cut off the tops and put them into a basket and burn them; or wash or spray the plants with the extract from ¾ lb. of Quassia-chips, ¾ lb. of soft-soap, mixed in 10 gallons of water.—G. S. S.

THE KITCHEN GARDEN.

CAPSICUMS AND CHILLIES.

Quite in the south of England these may be grown with some success outside, under the same general conditions as are afforded to Tomatoes. This will be sufficient where green fruit only is in request, but I find it better to devote a frame to their use, as they then get an earlier start, and ripen up a good proportion of the fruits, besides giving a plentiful supply of green fruit. Pot culture is a mistake unless the plants are grown for decoration, as they are frequently troubled with insect pests when in pots, while, if planted out, insects are not nearly so troublesome. My practice is to put a few inches of rich, light soil into a frame on a hard bottom, and plant in this at 1 foot apart. Until the young plants have got well hold of the soil and are growing freely, I have them well syringed, closing the frame early each afternoon, and covering with mats at night while there is any fear of a low night temperature. Ventilation is given during the early part of the day in increasing volume, and after a week or two a little air is left on all night, until, by the end of June, the plants may be completely exposed, except when the weather is unpropitious. Under these conditions, a free but sturdy and fruitful growth takes place, and the plants soon bear a heavy crop which needs no thinning except as required for use, as the plants do not appear to feel any ill-effects from free fruiting, and go on producing fresh pods until stopped by autumn frosts. W.

Peas.—Any further sowings of Peas which are made should be of late varieties, and trenches are imperative on light soils. I make a sowing of late varieties now and again ten days or a fortnight later, this being in most seasons the final sowing, though I have had, at times, successful results from sowing early varieties, such as Chelsea Gem and American Wonder, still later in June. I do not, however, recommend the plan for general adoption, and see no necessity for it while we have such grand mildew-resisting varieties as Autocrat, Ne Plus Ultra, Sturdy, and the like, which may be sown at the end of May or early in June with a certainty of their bearing until Michaelmas, if they get good treatment and the season is at all suitable for late Peas. Another good useful late Pea is Walker's Perpetual Bearer, the name of which indicates a most useful characteristic, which it has in common with my favourite variety Autocrat. Besides being sown in trenches, late Peas should have ample room between the rows, and if these are distributed singly here and there among dwarf crops, the latter should not be allowed to come within a yard of the rows, as the Peas will require all the moisture and nourishment they can get to promote good growth.—T. [*This note has been held over through pressure on our space.*—Ed.]

Endive.—As a substitute for Spinach I find nothing else so well liked as Endive, and I strongly recommend its cultivation from now onwards to those who have to deal with a soil that cannot be depended on to grow Spinach well, and such soils are not uncommon. Endive is too seldom used in this way, and is looked on as being purely for salad, but if the Broad-leaved Batavian variety is given plenty of room and good cultivation, a liberal supply of leaves, that will be but little behind Spinach in colour, may be had with very little trouble. To get the best results during the summer months, seed should be sown in a cool and somewhat shaded place. The young plants must be thinned to distances sufficient to allow of the leaves spreading to their fullest extent, for if cramped for room, blanching will result and the colour will be spoiled. One or two successional sowings must be made before the main crop for general purposes is sown, as the early sowings will bolt after a time, though in this respect Endive has the advantage of Spinach, individual sowings lasting over a longer season. Although I only recommend Endive for taking the place of Spinach where the latter is difficult to grow, I find it in great demand even while Spinach is plentiful.—D.

New Zealand Spinach.—Plants of this raised in heat should now be sufficiently hardened for planting out. Plant at a yard apart in a sunny spot. The plants will succeed in a soil and position which would be too dry for many things, and from want of a better place may be put out on top of a heap of decaying rubbish, if they are given a few inches of soil in which the roots may get a start.

Mulching Cauliflowers.—Small quickly-grown Cauliflowers are useful during June and July, but soon get infested with various insect pests if allowed to suffer from want of moisture, and unless the heads are clean, they are not worth growing. I am aware Cauliflowers at the time named are not required by everyone, but in many gardens a large and varied supply is required, and if Cauliflowers are cut about the size of a cricket-ball they are always appreciated. Pearl and Favourite are excellent for summer cutting, but even these require a good mulch, well saturating the mulch with water once a week. No time should be lost in removing the old stems as the plants are cut. Many shifts can be made to keep the roots cool and moist, and doubtless the best is to mould up the plants, filling the trench with strawy litter. This, well watered, keeps the roots moist. In dry, gravelly soils the plants are greatly benefited by a dewing overhead in the evening, and for later supplies it is well to sow in rows, dropping a few seeds 2 feet apart, thinning to the strongest. This saves transplanting in hot weather.—G.

Pea Ne Plus Ultra.—It is said that no other Pea is in such great demand in the seed trade, and there can be no doubt but that for late use it is one of the most popular with gardeners. This tribute is paid not only to its reliable qualities, but also to its fine flavour. The fact also serves to show that gardeners do not regard mere weight of crop or size of pod as everything desirable. Ne Plus Ultra gives pods of but moderate size, and is not an immense cropper, but for table use—and after all that is the chief feature to be looked for in a garden Pea—it never has been excelled; but, to do it justice, deep, retentive soil well manured is desirable. It is also best when thinly sown in the rows and the rows are wide apart. It is when sown thickly, and perhaps not more than 6 feet of space exists between the rows, that so much encouragement is given to the development of mildew. Where the soil will not carry our tall Peas, the best substitute for Ne Plus Ultra, no doubt, is Laxton's Omega, the sweetest

id best flavoured Pea that Mr. Laxton raised. , is, indeed, a veritable dwarf Ne Plus Ultra. his good variety has had to suffer somewhat in ie severe competition with newer ones to which id Peas are now subjected, and there can be no oubt that the dwarf section does contain many onderfully fine Peas and splendid croppers, ough few, if any, seem to possess the delicious le Plus Ultra flavour.—A.

Primula Forbesi.—Ever since last August a cool greenhouse this species has continued to ower. I do not consider it quite hardy, though have no doubt it would have stood out in a ild winter like 1895 6. For degrees of hardiness class it with Poissoni, imperialis, obconica, byssinica, and floribunda. It is a capital thing o set out in a sheltered corner in June, where t may be left on the chance of surviving; but he propagation of succession stock should be een to, and this is a very easy matter, as plenty f both seed and offsets is available. The chief feature of beauty is the long succession of an abundance of mauve flowers, small, it is true, but so multiplied in the form of whorls as to be quite effective. A group of little plants on a shelf presents a cloud of pale blue or mauve.—T.

Dyed flowers.—Will you kindly give me the names of the two flowers enclosed herewith, and say if they are their natural colour, or if artificially coloured, and if so by what process are they coloured? They are flowers that I bought in a shop, and judging from the stain of green which comes from the stem, I should think they were artificially coloured.—F. A. M., *Lancashire.*

*** The flowers sent were those of the beautiful double or Gardenia-flowered Narcissus (N. poeticus fl.-pl.), and dyed a fearful metallic green. We believe such results are brought about by putting the stems of the flowers into a dye, which gradually affects the colouring of the blossom itself. We once saw a green Carnation, but that was scarcely so horrible as this Daffodil.

ASTILBE JAPONICA.

This is one of the popular plants for early forcing, and if the clumps are potted early in the autumn they may be plunged in ashes or Cocoa-nut-fibre refuse outside. They will soon commence to root, after which they should not be allowed to get dry. For early forcing they should be placed in heat as soon as they have commenced to root in the pots; but it is best to force gently, as they flower more freely than by placing in a strong heat at once. When the plants are well furnished with foliage and flower place them in pans of water to prevent them from getting dry, as they are difficult to keep sufficiently moist when in full growth. There is also a variegated variety called A. japonica variegata. The flower-spikes are denser and the foliage prettily variegated. It is a better plant than the type, being useful for grouping and staging with other plants, and lasts a long time in bloom. It is also a good amateur's plant, as it blooms annually when given good culture. After the flowering season the plants should be divided, planted in good soil in an open position, and given copious supplies of moisture through the summer months. They well repay liquid-manure weekly; also in light soil should be given a mulch of decayed manure. Treated thus they force freely and give a lot of bloom. The variety multiflora is a good form. W. J.

Astilbe japonica.

Hieracium villosum.—This is just commencing to flower, and the shaggy tufts of leaves, very dense and woolly in many instances, are quite distinct. It is not unlike some of the Agrostemmas in its tufts of leaves, but when the golden flowers appear the plant has a totally different aspect.

Rhododendron primulinum.—This is of a somewhat straggling habit of growth, and only sparsely furnished with leaves. The flowers, however, are of a distinct shade of buff or pale apricot that should be of service to the hybridist.

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OUTDOOR PLANTS.

NOTES ON TUBEROUS BEGONIAS.

The display of Tuberous-rooted Begonias at the Temple Show was one of exceptional merit for so early in the season. All the leading firms were represented. The single-flowered forms as well as those of the double type were very fine. Great strides have been made during recent years in the improvement of the Begonia, evidence of this being seen in the flowers shown on this occasion. Variety in colour is a characteristic feature, the flowers partaking of colours ranging from the deepest crimson, followed by scarlet, orange, yellow, terra-cotta, salmon, apricot, pink, and the purest white. Besides these there were others with fancy markings and beautiful shades. The display proved conclusively the great wealth of colour in which these flowers may now be obtained.

The following named varieties stood out conspicuously from the others, and call for special mention, either as bedding plants or for greenhouse and conservatory decoration. In the exhibit of Mr. Box one very fine golden-yellow double flower named Diamond Jubilee received an award of merit. This is free flowering and very full. Queen of Wurtemburg is another handsome primrose-yellow, double, of good size and form. Princess of York is another equally good sulphur-coloured flower, and of the right type of flower. Masterpiece is an immense apricot variety on erect stems. Queen of Queens also received the distinction of an award of merit. This is an immense orange flower of beautiful form. Nizam is a rich crimson with corrugated petals. Edham Pasha is another good crimson, but brighter than the last named. Lady Edridge is best described as a charming salmon-pink, and is a double flower of great promise. Lady Westmoreland stood out as a distinct flower of a lovely salmon-rose, very large and handsome.

The Singles were fine indeed. Pallas stood out as an advance in form, and in colour is a lovely rich cerise-pink. Yellow Perfection is a neat yellow flower of great promise. Lady Lennard was the best of the white flowers, being large and of excellent form. Eclipse may be described as a deep rich crimson of large size, good form, and substance. A rich scarlet named Utopia was in lovely condition, and promises to be heard of again. Mr. T. Ware also staged a magnificent exhibit, the double varieties being exceptionally fine. The best of this type were Samuel Pope, a charming Picotee-edged flower with florets slightly corrugated. Jubilee Queen is a true type of a double flower, and is of the purest white; a beautiful Camellia-shaped flower. Regalia is a very large scarlet-crimson, on erect stems, and this also possesses a good habit. M. Baronne de St. Didier is another Camellia-shaped flower, of a soft primrose shade. Miss Lila Lawford is a peculiar yet handsome flower of a salmon-rose shade. Princess of Wales is a lovely flower, of a flesh-pink colour, resembling in form a good Petunia flower. The singles were well represented by Devonia, a large bronzy-buff; Moravia, one of the finest of the real scarlet sorts. Rosea superba is another handsome flower, rose, shaded cerise. Sovereign is a deep rich yellow of circular form, and has a nice habit. Mr. H. J. Jones had a huge bank, prettily arranged with a variety of Ferns and other foliage plants. The best of his double flowers were Chas. Kingsley, a very pretty salmon terra-cotta, of neat form and good size. Alba-plena, a pure white Camellia-shaped flower, was a perfect plant, and the blossoms chaste and neat. H. J. Jones, a very large and handsome orange-scarlet of a most desirable shape was conspicuous, as was also Purity, a very beautiful white sort. Miss Dean, a soft blush pink flower, was very interesting, and Orion, a full flower of a bright scarlet colour, was very free and striking in appearance. His best singles were Ryecroft, buff; Exquisite, a fancy flower; Miss Helmer, a clear rose, and Mrs. G. P. Linford, another unique margined flower. Messrs. H. Cannell and Sons' double kinds were as usual very fine. Lord Salisbury, a bright rosy-cerise of good form; Lady Bigge, a lovely flesh-pink, large and striking; Chas. Winn, bright crimson, with corrugated florets; and Mrs. R. Christian, a pretty yellow, were the sorts deserving of special notice.

Messrs. Laing and Sons staged a fine exhibit, including both double and single types of the flower. Dr. Jim, lovely cerise flower of good form; Lady Pearson, orange-buff; Diamond Jubilee, a rich yellow; Cecil Rhodes, bright crimson, of good size; and Lady Harris, a charming salmon-pink. The singles were very good indeed. British Flag, bronzy-buff; Lady Hamilton, white; Countess Nelson, rose; and Dr. Nansen, an immense salmon flower, were amongst those of a high order of merit.

D. B. Crane.

HELIOTROPES.

"Cherry-pie" is one of the greatest favourites among flowering plants, not because of its colour, which is neither rich nor gaudy, but of the delicate perfume which pervades the air in its immediate vicinity when in bloom. One expanded flower will scent a greenhouse or drawing-room, while the plant is equally useful for covering walls or pillars, and never fails to arrest attention when used as a bedding plant. The Heliotrope is an easy plant to strike from cuttings if these are obtained in a soft, growing state and inserted either in the early spring or in July and August. The latter period is a suitable time to propagate plants for winter and spring flowering in the greenhouse, or to insert for stock for the next summer's display on the flower-beds. Light sandy soil is suitable for propagating, but a good compost for pot plants is formed of fibrous loam two parts, the remaining portions being made up of leaf-mould and coarse sand. In order to make good, bushy plants for greenhouse adornment it is necessary to grow the plants in a cool structure and close to the glass, otherwise they will be weakly and drawn. Everyone likes to obtain flowers in the winter and early spring, and in order to do this with Heliotrope the wood must be firm and well ripened during the previous summer and autumn. Plants grown under the shade of Vines, or anything that keeps off the sunshine, will be weak and sappy, and the result, of course, is little or no flower.

Endeavours should also be made to have the plants of bushy habit and sturdy appearance. To do this it is necessary as soon as they are a few inches high to pinch out the tops. They will then break from below, and when further growth has been made pinch the points out again. Under this treatment, and with the provision of plenty of light, a free short-jointed growth will be the result, and abundance of bloom may be expected. The number of times to repot the plants, of course, depends on the size to which they are wanted to grow. The first potting will be into 3-inch or 4-inch pots, and if when these are well filled with roots they are removed to 5-inch or 6-inch, these will be large enough for ordinary greenhouse use.

Amateurs are often apt to grow plants like Heliotrope for several years without giving them a rest or cutting back in any way. The result is invariably ill-shaped plants and little or no flower. Plants of Heliotrope that have flowered during the summer and autumn are best kept rather dry through the winter, and then, if cut well back and repotted, they will break out fresh and in the early summer be covered with bloom. Others may be then propagated, and thus the supply is kept up during the winter and spring. For furnishing walls or pillows a narrow border for the roots is far superior to growing in pots, and, in the absence of the latter, a narrow box will serve the purpose admirably. Few people, perhaps, are aware what a useful plant the Heliotrope is when grown under these conditions, and it will continue in good condition for years. Water should be given sparingly during the winter, and in the spring the plants will be greatly benefited by a top-dressing of soil containing a little thoroughly decayed manure. I once had the back wall of a greenhouse similarly clothed, and it was only on very rare occasions that I was not able to gather a handful of the delicious flowers.

For bedding the Heliotrope has few superiors, though dark-leaved, purple-flowered varieties are the best for this phase of culture. The present is a good time for placing out small plants, intermixed with other occupants of the flower garden. Then, for the furnishing of window-boxes and garden vases Heliotropes are almost indispensable. In either capacity, they are perfectly at home, and the delicious odour of a Heliotrope in a window-box is fully appreciated on throwing up the sash in the morning. It is, in short, truly an amateur's plant, and though its praises have often been sung in these pages, I would advise readers to give the Heliotrope the attention it fully deserves. There are several varieties in cultivation named on account of their distinct colour or flowering capacity. Swanley Giant and President Garfield are largely grown in pots, while for bedding Miss Nightingale and Marceau are very good.

H. H.

Sweet Pea-flowers from Cornwall.—I am sending you a box of Sweet Peas. During my absence from home last summer my first row was allowed to go to seed, and stopped blooming. In July I sowed a fresh row, but the autumn being cold they only arrived at buds, which did not open. We protected them with sacking, but the wind proved more fatal than the frost last winter. We only had to protect them from the latter for about a week altogether. They lived, and during the last six weeks have grown wonderfully, being 7 feet high, and a mass of bloom.—Helston.

THE GREAT PURPLE IRIS.

No Iris or "Flag," as the plant is popularly called, is more handsome than I. pallida, of which we give an illustration, and a variety of it of great beauty is the Dalmatian Iris (I. p. dalmatica). The flowers of this type are delicate mauve, large, sweetly-scented, and borne on strong stems. A bold group of either of these is always a striking feature.

Colony of the Great Purple Flag.

Soot-water for plants.—I have just noticed in a back number of Gardening a query as to how to dissolve the soot for soot-water, and the kind of bag used, so I give your readers a hint as to how I manage. Every week our kitchen range has to be cleaned out, and sufficient soot is thus obtained from the flues to fill one of the glebe sugar 7 lb. cotton bags. These empty sugar-bags are all saved for this and similar utilitarian purposes; the soot is placed in them and the neck of the bag tied and suspended in a barrel of water. Several bags are thus always in the water, their contents thus being slowly allowed to dissolve. More water or fresh bags are added according as it is used up. I use the same bags for guano, nitrate of soda, and sulphate of ammonia, although the bag is not so essential in these latter instances as in the case of soot. I can, however, thus gauge proportions very well. Amateurs, therefore, who want soot-water without much trouble to themselves can give instructions as I do—namely, to place the soot in the empty sugar-bags.—R. H.

ROSES AT THE TEMPLE SHOW.

At the last Temple Show we saw some of the grandest groups of garden pot Roses it is possible to imagine, and a few notes upon the same, with impressions of the few newer varieties exhibited, may be welcome. The collection of Messrs. W. Paul and Sons, of Waltham Cross, was superb, the plants, with twelve large boxes of cut blooms, in addition to several baskets of the same, forming a grand group. Among the best pot Roses were La France, Duke of Teck, and Duke of Albany, and the newer introductions from Waltham Cross. Spenser is a deeper coloured and far more double form of Baroness Rothschild, while Medea is by far the best of our pale lemon-yellow Roses. The colour is much the same as Cloth of Gold, but instead of being a tender and uncertain variety, Medea is one of our most reliable Roses, whether as pot plants or grown in the open air. Here it was well shown as a standard. Four other new Roses sent out by this firm must be mentioned. These are Queen Mab, Enchantress, Sylph, and Empress Alexandra of Russia. The last named is probably the most uniquely coloured Rose sent out for the last decade; is a very distinct and clear tawny-copper, with a flush of carmine. Size and form are good, while the fact of its being even a better and freer bloomer in the open than as here shown from plants under glass, will certainly make it one of the most popular Roses we have. Queen Mab is a pretty miniature Rose of a clear coppery-salmon, and also quite distinct and novel in colour. Sylph is white, tinted with peach and creamy-pink; a grand Rose for the garden. Enchantress is another creamy-white with buff centre; quite distinct and likely to be one of our best pot-Roses for hard forcing. It is very free-blooming and has handsome foliage.

Empress Alexandra of Russia is a Tea Rose that will have to be included in every collection, and will undoubtedly rank as one of our most popular, distinct, and useful Roses. We can speak with greater confidence than usual upon this new Rose, having seen it in good form last July.

Messrs. C. Turner and Son's group consisted chiefly of pot plants, amongst which, in full beauty, was Crimson Rambler. It is seldom we find a Rose equally suitable for dwarfs, pyramids, standards, and any other forms as this. What a pity it is not a Perpetual, or even a spring and autumnal bloomer! Here, too, we saw the new White Rambler from Germany, named Thalia. It is very inferior to the crimson type, not so full, nor producing such immense trusses; still, it is likely to prove a useful climber. In our estimation the best companion to Crimson Rambler is found in Claire Jacquier, a pale creamy-yellow with nankeen centre, and with much the same habit as Crimson Rambler. There were some extra well-grown and bright plants of La France in this collection.

Messrs. G. Paul and Son, Cheshunt, had a lovely stand of plants and flowers. Captain Hayward was intensely bright. So, too, was their Carmine Pillar; but we thought very little of the much-lauded White Maréchal Niel. It is little improvement, if any, upon a pale form of the normal variety, although it may prove more attractive than shown in this instance. We noted most in this stand a grand plant of William Warden, an old salmon-pink sport from Mme. Clemence Joigneaux that is seldom seen, and yet is among the best Hybrid Perpetuals for pot culture.

A grand new Rose came from Mr. Rumsey, of Waltham Cross. This is named Mrs. Rumsey, and is a clear pink, with deeper centre, sweet-scented, an exceptionally free and constant bloomer, and we have no hesitation in declaring it mildew proof, having seen it in the open and

under glass among many other varieties badly affected with this crippling and disfiguring disease. The best cut blooms came from Mr. Mount, of Canterbury, who also had some well-grown plants of Crimson Rambler. We cannot find space to name the varieties staged, but must be content with saying that many of them, both Teas and Hybrid Perpetuals, were up to summer form. P. U.

TULIPS IN IRELAND.

In response to your note asking for information about my Tulip-growing, I send the following: I plant my bulbs in ridges about 4 feet broad, with 1 foot between. I do not always manure the ridges, but endeavour to do so every other year. I do not plant the bulbs in the very same places year after year, but lift them every year for the reason I need the ground, and ensure, too, a change of soil. I am careful, however, not to lift them too soon. I might be tempted to lift them sooner, only I manage to sow Poppy-seed in the autumn, and so when the reign of Tulips is over the Poppies are well up, and in three weeks or so the bed is covered with young plants. I find I can get the Poppies very early this way—far earlier than if I waited till spring and sowed them. When the Poppies are nearly over I dig them up, lift the bulbs and store them in a cool-frame. In this way they get thoroughly ripened and dried. When October comes round I prepare the ridges, and make a trench about 3 inches or 4 inches deep. In the bottom I scatter some sand; on this I place the bulbs, about 2 inches apart, and when the trench is filled with them I throw in a few small ones to increase in size; then I cover the bulbs with more sand, and the stuff that comes out of the next trench covers the sand. I make the second trench about 10 inches from the first, and fill it in the same way. I do this until the whole bed is filled with bulbs and level the top. I have plenty of turf-mould, and cover the whole bed with a layer of mould, sides and all, and thus preserve all the bulbs from frost. Turf-mould is a very bad conductor of heat, and so the frost is prevented from reaching the bulbs. I never lose one, and in that memorable year of frost when a good many bulbs were frozen mine were untouched. When May comes the bed is one mass of flowers, and the soil cannot be seen owing to the wealth of leaves. I like all one colour in a bed, and never mix colours in a bed. This is all I do—no one could do much less—and still I have grand Tulips, as the Editor can testify. Wm. Douglas.

Killaloo, Derry.

*** *The Tulips sent were very fine.*

White marks on Marie Henriette Rose (*D. G. C.*).—Your Rose-leaves with the white powdery blotches are affected by mildew. Please refer to Gardening, May 22, page 159, for cause and remedy. One of the leaves sent is attacked by a white-fly upon the underside. There is no powdery deposit in this case, and to kill you must apply the remedy recommended upon page 159 for aphis. The white-fly is very active, and you will need to turn over the leaf carefully if it is to be caught.

Rose of Sharon of Scripture (*C. Wil*).—There is nothing in the Hebrew name to which this translation is given in Solomon's Song, Ch. II., v. 1, to indicate a flower like what we call a Rose. Hebrew scholars generally believe that the word refers to some bulbous plant, and the most probable which has been suggested is a Syrian form of the Polyanthus-Narcissus (Narcissus Tazetta of Linnæus). This is common in Palestine, and occurs in the district generally supposed to be the Plain of Sharon mentioned in the Bible.—C. W. D.

Protecting Strawberry bloom.—The horse has for this season been stolen, and locking the stable-door is useless. But the present spring's disastrous experience with Strawberry blooms may well set anyone thinking how to avoid such harm in the future. Not only on small breadths, but on extensive ones early flowers have been killed wholesale. To protect these huge breadths is practically impossible, but that is not so with small plots. Thus, dry litter or Fern laid over the blooms at night when frost seems imminent, and removed in the morning, or double fish-netting laid along over the plants, but slightly elevated above them through the aid of supports, would do great good. Then if the plants were put out into rows 18 inches apart, with alleys 2 feet 6 inches wide between each three rows, and some rough framework made to carry them, the lath-frame referred to above used for shading during the day could be laid over the bloom at night, thus supplying excellent protection from frost.—A. D.

MULCHINGS AND THEIR BENEFITS.

In dry, hot summer weather, after the ground has been previously warmed by means of sun-heat, surface-mulchings or thin coverings of suitable material are highly beneficial, not only in the vegetable quarters, but also in the fruit and flower-gardens. This plan when adopted saves much labour in watering and helps to enrich the soil. If we mulch a Vine-border in autumn with litter, leaves, or half-rotten manure, these materials will, to some extent, retain the heat absorbed during summer, and will help to keep the roots warm in winter; but if the mulching be left on during the warm days of spring and the early part of summer, it will prevent the roots being benefited by the heat derived from the increased sunshine of that period. It is clear, therefore, that both in the case of vegetables and that of flower-beds it is necessary that the soil should be warmed to some extent before the mulching is applied, as after that is done, not only is moisture longer retained in the ground, but the latter kept proportionately cooler than it otherwise would have been. Mulchings are disliked by some in gardens on account of their untidy appearance, especially when scattered about by the scratching of birds in search of food in dry, hot weather, but their benefit (the mulchings) to vegetation at such dry times cannot be overrated. The best material for mulching is partly decayed hotbed manure, but when this cannot be obtained, short Grass from the lawn-mowings may be used as a substitute with advantage. Seaweed is also excellent material for the purpose in view. All fruit and vegetable crops are, as just stated, benefited by being mulched, but some more so than others. The Raspberry, which delights in a moist soil with its roots near the surface, should always be mulched in dry situations. Even on soils that are thin and otherwise unsuitable for Raspberries good crops have been obtained by the aid of mulchings. Pyramidal and bush fruit-trees that are not pruned should also be mulched if possible, especially in the dry seasons, with half rotten manure, but the mulching should not be applied too early, as in that case it prevents the sun from warming the soil left cold after the winter. Its good effect on the growth of young Gooseberries and Currants and on that of stove-fruits is very conspicuous. All newly-planted trees are the better, too, for being mulched both in winter and summer. As regards Strawberries, the crop is often quite doubled in bulk when the plants are properly and carefully mulched when they come into bloom. Celery, too, when mulched in the trenches with short Grass requires but little water—a great consideration where that precious fluid is scarce—the growth of Celery that is mulched is also often more robust and succulent than when otherwise treated. In dry summers, and more especially towards autumn, Peas become affected with mildew unless a good mulching of manure about a foot wide be laid along the sides of the rows, a mode of treatment which greatly benefits the crop. Winter Greens and Autumn Cauliflowers progress slowly when planted in dry, hot weather in June, but if the ground be sprinkled over with short Grass, they will generally be found to grow away freely. Potatoes are an exception; they do better without any mulching, for if employed and the autumn should prove wet, it would certainly aggravate the disease. In flower gardens mulchings are highly beneficial, but they are unsightly unless covered over with fine soil. In the case of Calceolarias it is well nigh indispensable in order to maintain healthy vigour and keep off disease. Iresines, which are moisture-loving plants, when well mulched thrive well in situations in which they would otherwise scarcely exist. Roses, too, should be mulched with horse-manure, the fertilising properties of which get washed down by means of rain and artificial watering to the roots. The best mulching for flower gardens is Cocoa-nut-refuse, but where the beds are large it would be too expensive, and in that case half decayed vegetable mould or half rotten manure, put through an inch-mesh sieve, would probably answer the purpose well and not be unsightly. Plums, Peaches, Figs, or Vines grown in large pots should be mulched two or three times during the growing season, inasmuch as the roots are generally near the surface, and are liable to suffer from want of water. Setting aside the advantages of mulching as regards the saving of labour and retaining moisture in the soil, it keeps the roots in an even temperature, and prevents the escape of warmth from the ground in cold weather. B.

GARDEN WORK.*

Conservatory.

When the coloured-leaved Japanese Maples were exhibited in London on their introduction some years ago, it was thought, though they would only succeed outside in warm sheltered places, they might be utilised for the conservatory, and though they are exhibited occasionally in good condition at the London shows, they do not appear to have caught on generally; but at this season, nice little bushes of the coloured-leaved kinds would be useful to the decorator. Possibly some day they will become more common. A well-grown Myrtle in a pot is a charming plant when in flower, and is easily grown, and used to be commonly found in cottage windows; but it went out of fashion when the Orange ceased to be grown as a decorative object. When the Dutch style of gardening was popular forty years or so ago, Standard Myrtles, Pomegranates, and the small-leaved Oranges found a place there; but they have disappeared now, which is, I think, a pity, so far as regards the Myrtles. Anyway, Roses which have been brought on gently in a cool-house are now in good form, and when the flowering period for the time being is over, and the growth a little hardened, the plants can be plunged outside, where they give but little trouble. Cuttings from the young wood of such plants, especially if taken off with a bit of old wood, will root in a warm propagating bed in a few days, and if potted up when rooted, and when hardened off planted out in a good bed, some flowers may be had in late summer and autumn. Freesias should have a good roasting in the sunshine to complete ripening. Tuberoses will come in useful for late conservatory work if grown quite cool. Pot the bulbs and keep in a cool-frame. Very little water will be required till some growth is made; afterwards keep well moistened. It is very important now, in order that the conservatory may be enjoyable, that dead leaves and faded flowers should have no resting-place in the house. When Pelargoniums and Azaleas begin to drop their petals, a good deal of picking is required, and when the plants get past a certain stage, have them removed to another house if possible. In the conservatory shabby plants should not remain, as they detract from the enjoyment of the good specimens. Olearia Gunni is a charming little white-flowered bush, now very effective as a pot-plant, and Cytisus Andreanus is a good companion to it. Both should be obtained from the unheated conservatory. Well-grown bushes of white Marguerites, Ivy Geraniums, Hydrangeas in variety, are all easily grown, and help to make a good show.

Stove.

Foliage plants, such as Caladiums, etc., will now be in fine condition, and there will also be plenty of flowers. Gloxinias and Streptocarpus Hybrids will make very pretty groups in a moderate temperature, and are easily cultivated. Achimenes, again, make pretty specimens when well grown, and are charming things for baskets, and when well established may be taken to the conservatory. The training of the summer-flowering climbers must have frequent attention to bring the young shoots up to the light. Orchids which are commencing growth should be overhauled and placed in new baskets, or on fresh blocks where necessary. Ixoras are beautiful evergreen stove-plants, but require more heat than most things, and skilful cultivation generally, especially as regards potting and watering. If the condition of the roots ever becomes unsatisfactory it is difficult to restore them to health. They only succeed in careful hands, and are not much grown, except in first-class collections. Temperature now about 65 degs. or 70 degs. for heat-loving subjects.

The Vinery.

Now that the Grapes can in pretty well every garden have the house to themselves, there will be a chance of doing them justice, especially as regards giving nourishment to the roots. Whatever good they get from this nourishment, it is as well to make a change. Many a gardener has found that after using any particular stimulant several times it does not produce the same effect. If one must use only one kind of stimulant, there is nothing better than the drainings from cow-sheds and stables, but there are quicker acting things, and, besides, where there is water power and the hose can be used, a manure-powder is easier to apply. Watch for incipient appearances of mildew-spores, and destroy them at once, either by using one of the mildew washes or dusting with dry sulphur. Sub-laterals must be kept within bounds, and the thinning of the berries of late kinds be done with care and judgment. The ventilation must be as perfect as possible without creating cold draughts. Ripening Grapes must have air during the night, if only in small quantities.

Early Tomatoes

are now ripening, and will need plenty of nourishment, but it is better to partly meet this by rich mulchings, as if strong liquid-manure is used too freely the fruits may crack and will not keep or prove so valuable. Most people like yellow Tomatoes, but from some cause or other they are not so saleable in the market as red ones. And they

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

do not crop quite so heavily as the best cropping reds, and therefore they are not so much grown, except in private gardens where the produce is consumed at home. Free ventilation is important now. We water with the hose to save labour, but do not wet the plants. They are better without it.

Cucumbers in Houses

are now bearing heavily, and must have fr quent top-dressings and abundant supplies of moisture. We use Moss-litter-manure, mixed with good loam, for top-dressing. One has to be careful there are no wireworms in the loam. Houses cleared of bedding and other plants may now be planted with Cucumbers or Tomatoes.

Window Gardening.

Take cuttings of any good Cineraria which has done flowering. They will soon root in good light soil. Shift on Balsams and Tuberous Begonias. Balsams will do better outside, and will make sturdier growth and flower better. I know a working man who always took first prize for Balsams, which were always dwarf, bushy, and well bloomed, and he always grew them outside on a hard bottom till within ten days of the show, after the end of May.

Outdoor Garden.

There will soon be a good deal of staking and tying to do now among herbaceous plants, Carnations, etc. Sweet Peas should be supported with feathery Hazel-sticks, and the rows of Sweet Peas should be mulched on both sides. Last season the Peas, where mulch was used, flowered well, but the unmulched plants did badly during the dry weather. The misfortune is that with such things watering cannot make a good substitute for mulch. Roses, where prompt measures have been taken with insects, are now looking well, but where flies and maggots have been present in large numbers many of the blooms will be spoilt. To grow good Roses, even on a suitable, well-prepared soil, requires constant care and watchfulness. What, then, must it be on a soil not suitable and not properly prepared? The two chief items calling for attention now are freedom from insects and giving abundant nourishment. In windy districts maiden plants must be secured to prevent the heads being blown off. There will be a good deal to do in pricking off seedling hardy plants, such as Wallflowers, Canterbury Bells, etc. If left too long in a crowded seed-bed the plants soon spoil. Those who only grow a few plants on their borders may prick them out in pans in open spots in the borders. Hardy annuals may yet be sown for late bloom.

Fruit Garden.

Those who force Strawberries early should layer runners, either in small pots or in some other way, as soon as they can be obtained Runners from young, fertile plants are best. Follow up the disbudding of young shoots on outside Peaches. Thin the fruit if very numerous, and maintain the fight against insects. The neglect in dealing with insects is one of the causes of the inferior condition of Peaches and Nectarines on walls. In the early stages of growth Tobacco-powder is the best remedy for green and black-fly; later on washes may be used. Tobacco-powder is always ready for use. The disbudder can have it near him when at work, and can use it in the exact spot where he finds the insects. Washes often have to be mixed with hot water and involve time in preparation; and they rarely kill all the insects, and, therefore, have to be repeated, and the procrastinator, and sometimes the hard-worked man, puts things off. See that recently-grafted trees have the grafts secured from the wind. Now is the time to feed late Peaches under glass with artificial or natural stimulants. They will take a good deal of nourishment; the same remark applies to Vines and other fruits under glass. The regulation and stoppage of the growth must have prompt attention. Late Vines in unheated houses should be confined to early-ripening sorts only, such as Hamburghs and Sweetwaters or Muscadines.

Vegetable Garden.

Late Peas may yet be sown, also scarlet or white-flowered Runners. The bulk of seed-sowing is now over, but there are certain things which require to be sown at short intervals, such as Lettuces, Radishes, and small salading. Sow a good breadth of Turnips now, and sow late crops after early Potatoes. Endive may be sown now. If sown before June the plants generally bolt. Plant out Leeks and Celery. Sow Cardoons now in prepared trenches. Mulch Peas, Cauliflowers, and Lettuces with half-decayed manure. Peg out the shoots of Marrows and Ridge Cucumbers after mulching. It is a common plan to plant the seeds of Marrows for late summer use in the ground in patches of three. These plants usually do well and bear freely. Coddling plants under glass, so far as the future is concerned, is not an unmixed good always. "The dripping June puts things in tune," and at the time of writing it looks as if the June clouds would drop fatness. Certainly, May has been dry and cold. Tomatoes, both outside and under glass, must have prompt attention in removing surplus growths and training the main stem. Ventilate freely. Fire-heat is not absolutely necessary now for Tomatoes, but in wet, cold weather it is an advantage to have a little warmth in the pipes.

E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from June 12th to June 19th.

Planted out several interesting little groups of beds of such bright-leaved things as Coleus Verschaffelti, Alternantheras, etc. There is a little spot in the grounds where the little groups of beds seem to fit in, and they have been allowed to remain, though subject to consideration from year to year. Planted out Pinks raised in heat for forcing. We found these very useful; really they are not forced much, but if only brought forward in a greenhouse temperature near the glass they will flower in April; and good blooms of Her Majesty are as useful as Carnations and pretty well as large. Last winter our plants were attacked by the Carnation-maggot after being housed. We ultimately cleared them out by a free use of the knife, but they did not pass through the ordeal unscathed. Mulched Raspberries with manure. If the weather continues dry we shall let the hose work on them for a time. Commenced layering Strawberry-runners for forcing. We still grow a few Keen's Seedling; those for whom we cater like it. Royal Sovereign is a good forcing Strawberry, and the British Queen when well done is still without an equal. Pricked off in prepared beds outside a lot of seedling Tuberous Begonias; they will make larger tubers than if grown in pots, and most of them will bloom if well cared for. When well selected as to height and colour they will make useful groups. We are continually among the blooms regulating growth—thinning buds, removing suckers, killing insects, mulching, watering, etc. There is always something to do if the blooms are to come right. Dahlias have been planted out, and will soon require a good deal of looking after. Tulips, even the latest, are now over; the show, where a good collection has been grown, has been a good one. The bulbs will be lifted when ripe and preserved carefully till the second week in November. Planted out more Celery. We have sown Marrow Peas for the last time. In late districts the sowing would probably have been of no use, but it will do here in the eastern counties. We sow Lettuces every three weeks now, Radishes every ten days, and Mustard and Cress twice a week. We generally sow Endive for the first time about the middle of June; if sown earlier the plants with us always bolt and are useless, but they go on right now. We have just planted a row of Cardoons; they make a change, but they are not in much demand. I do not remember that our cook was ever enthusiastic about them; but Globe Artichokes we have as early and as late as possible, and to this end new plantations are frequently made. Earthed up Potatoes. Planted Winter Greens. Thinned Peaches on walls.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

789—**Pinching off terminal shoots of Apple-trees** (*W.*).—You cannot do better than pinch them back now.

790—**Salvia argentea** (*Over*).—There is nothing unusual in the height of your Salvia argentea. It generally reaches 3 feet when well grown.

791—**Sowing seeds of Ixiolirion Pallasi** (*P.*).—Seeds of this beautiful, hardy, blue-flowering bulb may be sown at once, or as soon as ripe.

792—**Holes in leaves of Peach-trees** (*P.*).—The leaves appear to be scorched, and the cause of the fruit dropping is probably dryness at the roots.

793—**Rose with poor centre** (*M.*).—Your Rose looks as if it has had too much manure; the flower has all the appearance of being from a grossly-fed plant.

794—**Orange-trees raised from pips** (*C.*).—Orange-trees grown from the pips will flower, but they will take a long time to do so, as they are slow of growth.

795—**Pæonies grafted on Rose-trees** (*Woodbury*).—We have never known Pæonies to be grafted upon Roses, and doubt if plants of so opposite a character would unite to any advantage.

796—**Lime-washing fruit-trees** (*E.*).—They may be lime-washed at any time during winter, the most suitable being the early months of the new year. Make the lime into a thin paste.

797—**Planting over Anemone fulgens** (*H.*).—Do not put any other plants in the bed at all, as the Anemones will develop leaves in a very short time, and any other plants would injure them.

798—**Treatment of the Hare's-foot Fern** (*A.*).—As there are so many Hare's-foot Ferns we cannot assist you. If you send us a frond, and repeat your question at the same time, we will advise you.

799—**Mildewed Vines** (*Over*).—Sulphur dusted upon the bunches cannot fail to be more or less objectionable. You would have done better to follow the advice given to query 729, in our issue for May 29th.

800—**Treatment of young Acacias** (*T.*).—Most Acacias grow freely in a cool and airy greenhouse; but, of course, you must attend to them as regards cleanliness, abundant water, good soil, and plenty of light. Indeed, they sometimes grow too freely if attended to in these respects.

801—**Tecoma jasminoides not flowering** (*H.*).—Probably your plant is too young or too small to flower. Have patience, and no doubt you will be rewarded with bloom when the plant is in a flowering state.

802—**Rough skinned Grapes** (*T.*).—The Grapes you send appear to be "shanked;" which arises from different causes, but generally from deficient root action. The berries also appear to be affected by rust.

803—**Handling Grapes** (*A.*).—Provided the berries are not injured in any way the bloom would not be affected by handling previous to colouring. Thinning ought, however, to be done without touching the berries.

804—**Treatment of Lilium auratum** (*E.*).—Place it as near the glass as possible. Remember that Lilies when in a very active state of growth require abundance of water, provided the pots are well drained.

805—**Iris** (*Miss A.*).—We have never heard of Iris changing colour The roots have probably run in together and become mixed. Both the common white and blue Irises are very rapid in growth, and soon become mixed.

806—**Excrescences on leaves of Cherry** (*C.*). The excrescences you mention are perfectly natural; they are called glands, and occur on almost all Cherries and Peaches. There is nothing whatever the matter with the leaves.

807—**Increasing Zonal "Geraniums"** (*R.*).—How are you to know whether your plants are worth propagating unless you let them flower? Do not propagate them until you see whether they are worth the trouble.

808—**German Irises** (*M.*).—The Irises you send us are neither well chosen nor well grown. Among the German Irises there are really fine kinds if you take the trouble to look for them, and growing second-rate ones is a mistake.

809—**Hydrangea foliage dying** (*A.*).—The leaves seem "scalded," but to give you good advice it is necessary that we should know the conditions of culture. Could you not show it to some good gardener in your neighbourhood?

810—**Melons and Cucumbers** (*W.*).—Melon-seeds cannot, of course, produce Cucumbers; the probability is that, the seeds not being unlike each other, you have mixed them. We have never heard of Melons and Cucumbers being hybridised.

811—**Shoots coming out below the graft** (*C.*).—The stock is not quite content with its repression by the scion, and therefore takes the liberty of sending out a strong shoot now and then. To remedy that you have only to remove them.

812—**Perennial Phloxes dying** (*H.*).—We suppose there is something in the soil distasteful to the Phloxes—probably the excess of lime-rubbish. Phloxes above all garden flowers like a good soil. Wireworms may, too, be causing the mischief.

813—**Lilies diseased** (*S. P.*).—The Lilies have been destroyed by a fungus named Polyactis cana, sometimes called Botrytis cana No remedy is known, but the infected leaves should be destroyed as soon as seen. The fungus is very rapid in its work of destruction.

814—**Sempervivums flowering** (*A. T.*).—There is no definite period for Sempervivums to flower. They flower more quickly if the runners or suckers are pulled off so as to throw the strength into the main rosette. Keep them in the ground; never grow them in pots.

815—**Broad Beans unsatisfactory** (*Anxious*).—We do not recognise the disease upon your Beans. It is probably the larvæ of one of the many weevils, but which we cannot say from the dried specimens you sent. Pick off the affected leaves. The evil is not likely to affect your crop much.

816—**Growing Gladioli and Dahlias** (*Amateur*).—Do not associate Dahlias and Gladioli. Although both would do in fair garden soil, gardeners get a better result by giving the Dahlias a good dressing of manure. The Gladioli do admirably with sweet, free loam, without any fresh manure.

817—**American blight** (*J.*).—Scrub the affected parts with paraffin mixed with water in the proportions of a wineglassful to the gallon; afterwards put a composition of clay and cow-manure over the cankered parts. If your neighbour's trees are not cleansed the blight will probably reappear on yours.

818—**Sowing the Great Scarlet Poppy** (*H.*).—Seeds of the Scarlet Poppy (Papaver orientale) may be sown as soon as they are ripe, or at any time in spring or early summer. This plant, however, is not uncommon, and you may easily get plants by division, either from your own stock or from a nursery.

819—**Pyrethrums after blooming** (*S.*).—Cut off the dead flower-spikes, put a little mulching round the plants, and leave it on the surface during winter. Pyrethrums do damp off in cold localities, but in the Channel Islands they ought to succeed well—dryness and heat would there be the principal enemies to be dealt with.

820—**Stove for greenhouse** (*P.*).—The question of the best stove to heat a greenhouse has been discussed over and over again in GARDENING, and many excellent ways have been described. We should say that, as you object to hot-water apparatus, a well-constructed flue would be the best. Some old greenhouses are very comfortably heated by flues.

821—**Vine-leaves unsatisfactory** (*Sussex Reader*).—Even our biggest Vine-growers are at a loss for remedy to the dull, pimply blotches upon the lower side of your leaves. We have seen whole houses of young plants much affected in this way, and can only suggest that a spell of extra heat, with a dry atmosphere, may have promoted it.

822—**Loss of fruit—Pears in particular** (*Jno. Ching*).—You are not alone in your sad loss of fruit, especially among Pears and Plums. It is caused by the sharp frosts of the latter end and middle of May. Upon several mornings we registered from 4 degs. to 10 degs., and although only lasting an hour, or less, the damage is immense. Fancy what it is for other counties, when South Devon gives such results as we are sorry to see from you. It is the same spell of cold weather which affected the Roses.

823—**Beech-trees barked by hares** *(C. Geo. Macartney).*—Cover the trunks as far as the hare can reach with a mixture of soot, lime, and cow-dung. Galvanised wire-netting may also be placed round the trees with advantage.

824—**Planting Yew-hedge** *(Firewze).*—The Yew-hedge may be planted any time between September and April. Allow about 18 inches to 2 feet between the plants. When planting is completed, a good watering at the roots and overhead should be given. The botanical name of the Larch is Larix europæa.

825—**Celosia pyram plumosus** *(L. Verry).*—The plant you saw is Celosia pyramidalis plumosa, a greenhouse annual, but too late for sowing now. It is much used for summer bedding and decoration of cool greenhouses and conservatories during the summer months. You could probably get plants now for planting out from leading nurserymen. Look through our advertisement columns.

826—**Sample of manure** *(C. D.).*—We think the manure will be valuable. Blood-manure is much used, and we find it a quick and safe stimulant. The combination of lime and soot does not recommend itself, one neutralising the effect of the other. Nor do we think salt would be any improvement upon soot and wood-ashes. Your sample has been applied to various subjects, and we will report upon the result later.

827—**Cucumbers failing** *(Samuel Grinton)* —Did it never occur to you that if male and female blossoms are produced separately the removal of the former must necessarily prevent impregnation? That is your sole error; otherwise you are treating the plants admirably. Pick off a male blossom, remove the petals, and gently place the other part in the centre of freshly-expanded blossoms.

828—**What is a good Vegetable Marrow?** *(P.).*—Vegetable Marrows for exhibition should be young and uniform in size. In all cases judges should select those that are most suitable for the table when cooked. It is a great mistake to think that the largest are the best. Vegetable Marrows vary very much in size, so that no criterion as to size can be set. They are at their best for cooking when quite small, and when half or three parts ripe.

829—**Cutting back Weigela** *(G.).*—Cut out only the old shoots, so as to prevent overcrowding of the young growth. Prune in autumn, but we never like to see such beautiful shrubs as these so mutilated as they sometimes are. Remember that Weigelas always flower on the young growths, and therefore it is important to retain as many of these as possible. Doubtless you are aware that this is a perfectly hardy shrub, and will thrive in any part of the garden, even away from a wall.

830—**Raising Myrtle and other half-hardy plants** *(G.).*—If you are sowing so late as the present time the natural heat of the soil in a cool-frame or even out-of-doors would be sufficient for the germination of such plants At any other time less favourable as regards temperature, what gardeners call a gentle bottom-heat would suit well—such heat as might be generated in a mild hot-bed or greenhouse near the glass, or pit, or any of the simple propagating contrivances now obtainable.

831—**Diseased Jargonelle Pear** *(E.).*—Do you refer to shoots pushing below the graft? Because, if so, they are not Jargonelle shoots, but those of the stock on which it is grafted. You give us no particulars of the conditions under which the tree grows, and you do not state your county. Under the circumstances the best advice we can give you is to show the tree to some good gardener. The leaves are probably attacked by some insect, but as you do not send us any we cannot help you.

832—**Cosmos** *(Morris).*—These are not Australian, but Mexican plants of the Composite family. One species, C. bipinnatus, is a handsome annual, growing from 3 feet to 5 feet in height, having finely-divided, feathery foliage, and large, Dahlia-like blossoms of a large red-purple with yellow centres. It requires to be treated as a tender annual. The seeds should be sown in February or March in a heated frame, and the seedlings transplanted in May in good, rich, moist soil, with a warm exposure. Flowers from August to October. Good for grouping with bold and graceful annuals, and better than many more popular ones.

833—**Building a greenhouse** *(H. W. H.).*—There is not the least reason why, or fear of your pig-stye injuring any occupants of the greenhouse. Plant your Vine inside. Make a narrow border inside, and a wider one out. Have it about 3 feet to 4 feet deep, drain well, place some rough sods of turf over the drainage, and then almost fill up with a rich loam and a little thoroughly decayed stable-manure. As the Vine grows, it is better to add to the border by mulchings of fresh soil, this being more beneficial than filling the whole bed at first. From time to time in our articles upon "The Week's Work," you will find advice upon Vines.

834—**Means of training Roses** *(M.).*—We never like Gloire de Dijon so well as when it is allowed to grow rather freely on the wall. The main and stronger branches might be tied with Willow twigs. The effect of Tea Roses when a mode of training that is not stiff is adopted is good; but the main branches must, of course, be attached. We ourselves prefer a rough, strong trellis of horizontal wires and upright sticks ½ inch square, or Willow wands; but this, for the sake of convenience, is best applied over the whole surface, and, in justice to the common plan of nail and shred, we should say that we often see beautiful climbers trained in that way.

835—**Cydonia japonica** *(M.).*—The Japanese Quince grows perfectly as a shrub all over the districts with which we are familiar, and therefore, there is nothing whatever to prevent you from growing it in a bed. It might grow among pretty bulbous and other plants, which would no more injure it than it would them. Of course, the proper way would be to prepare the ground thoroughly at first, and plant and let alone, and keep clean by weeding; or, better still, let small plants surface the ground. We mean such plants as Hepaticas and Forget-me-nots. Do not plant one bush only; it makes a beautiful group, and you know there are various colours—salmon, white, cream, and various shades of red. We have seen the Japanese Quince form a good hedge. A few hardy Tulips would thrive freely, but you must not pull about the bed for bedding-out.

836—**Dwarf plants for border** *(Mowgli).*—Among the many Anemones suitable for planting with other dwarf plants are A. apennina, A. nemorosa, and A. sylvestris. Then there is Woodruff, Periwinkle, Saxifraga umbrosa (London Pride), Campanula pumila, Omphalodes verna, Sedum glaucum, and Cerastium tomentosum. All these are of easy cultivation, and require little attention after planting. We advise you to plant them early in the autumn, or they may be put in now; but it will be necessary to keep the plants, except the Anemones, watered (should the summer be dry) for this year, especially if the soil is of a hard, clay, or chalky nature. Another season they will require but very little attention. All the plants increase quickly, especially the Omphalodes, which is a very fast grower. Plant the Anemones in early autumn.

837—**Southernwood cuttings.**—I have put cuttings of Southernwood in a bottle of water. How shall I manage them when I take them out of the water? They are all making roots. I have failed with so many. The roots seem to shrivel up when I take them out and put them in the earth.—EVA.

*** *You would do better to root the Southernwood in a light and very moist compost. Lifting cuttings from water and transferring to soil is always risky. You cannot get soil among the roots without more or less injury. Add a little soil to the bottle of water, gradually supplying enough to set around the roots. Pour off the water, and when partly dried, break the bottle and remove roots and soil intact.*

838—**Cuttings from fruit-trees.**—I wish to cut some cuttings from fruit-trees. Which is the best time, and the best method of doing this?—SALTIRE.

*** *Take your cuttings late in the autumn. Select young growths about three parts ripened, cut into lengths of a foot or so, and plant firmly in a sandy loam.*

839—**Lily of the Valley.**—Could you kindly tell me what I can do with my Lily of the Valley? It has become so full of all kinds of weeds. Should I take it up, and at what time of year?—MRS. L.

*** *Lift and replant your Lily of the Valley crowns as soon as the leaf dies down. The end of August is usually a good time, but much depends upon the season.*

840—**Neglected fruit-trees.**—The fruit-trees in a much neglected garden I have recently taken are greatly overgrown. Is it advisable to prune at present time by cutting or breaking off the new wood and bases, and cutting off the shoots above the bearing branches? I refer more particularly to Apples and Pears.—LIMES CHAPEL.

*** *You may curtail new growth to advantage, but had better wait until next winter before using the knife freely.*

841—**Seakale cuttings.**—When should cuttings of Seakale be made so as to produce plants fit for use in April?—WEST MEATH.

*** *Cut up the "thongs" or roots into pieces six inches long. Do this early in the spring, plant in rich soil, taking care to keep the cuttings the right way upwards when making, so as to avoid any doubts when planting, and lift for forcing two seasons afterwards.*

842—**Mildew on Vines.**—I am much obliged for your advice in last issue, but you say, "In inexperienced hands sulphur is not the best remedy." Will you kindly say what is?—IGNORANT.

*** *We were unhappy in our use of the word "best." Our intention was to point out the danger of an over-application. You must avoid great fluctuation of temperature, and also the extremes of dry and moist atmospheres.*

843—**Treatment of Raspberries** —Should I cut down all shoots of my Raspberries that come up all over the bed, such a quantity have come up this year?—MRS. LANGLEY.

*** *Only leave sufficient young suckers to make fruiting canes for next year. Those away from the crown, and also surplus growth, may be cut out to advantage, and will strengthen those to be left for future fruiting.*

844—**Maiden-hair Fern-fronds.**—Can you tell me what has eaten the fronds of a Maiden-hair Fern? I enclose a frond. It is kept in a room upstairs, which is unheated. I have had it three years, and it was all right until a month ago. An answer would greatly oblige.—EVA.

*** *It may be a tiny slug, or woodlice; in fact, so many insect enemies may be the cause that we hesitate to suggest further. Why not watch and search carefully, when you could surely discover the insect which is troubling you?*

845—**Strawberries not fruiting**—Last year in my Strawberry-bed I pulled up all plants without blossoms and only left fruitful plants; now this year I have a lot more without blossoms. Should I pull them up, or will they fruit next year? they bore last year. A reply in the columns of your valuable paper will oblige.—H. MILES.

*** *We should certainly pull up all the "blind" plants, and get another stock from good plants.*

846—**Ivy-leaf "Geraniums."**—Do these in pots require about the same amount of water as the ordinary "Geranium" under similar conditions? I am told the latter should be kept on the dry side, and want to know if this rule applies equally to the Ivy-leaf sort?—HORTICULTURE.

*** *The same treatment found successful with the Zonal will be suitable for the Ivy-leaf section of Pelargoniums. While in full summer growth much more water is needed, and a dry soil will cause loss of leaves, a starved appearance, and little bloom.*

847—**Squirrels and Walnuts.**—The squirrels entirely strip my tree of the Nuts. Can anyone recommend a device to keep them off? Would painting the tree-trunk with thick tar prevent their climbing it, or would tar injure the tree?—INEXPERIENCE.

*** *Tar would probably prevent squirrels from ascending by the bole of your tree; but if it is near the branches of others this would not be a sure remedy. The tar, if used in moderation, will not hurt an old fruit-bearing Walnut. Shoot the squirrels, and leave one or two hanging about as a warning. Perhaps other readers can assist our correspondent*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A. E. D.*—The wild flower is the common Butterwort (Pinguicula vulgaris); the Saxifrage is, S Cotyledon.——*A. E. H.*—1, Senecio squalidus; 2, Chieranthus alpinus; 3, Cytisus capitatus; 4, Phlox subulata; 5, Saxifraga muscoides var.; 6, Androsace filiformis.——*Energetic*—1, Choisya ternata; 5, Ivy-leaved Toad-flax (Linaria Cymbalaria).——*S. P. H.*—Veronica rupestris ——*H. W. Lett.*—Spanish Broom (Genista hitpanica); 2, Symphytum tuberosum. —— *Waverley.* — Ornithogalum umbellatum. —— *A. Gane.* — Double Meadow Rockfoil (Saxifraga granulata fl.-pl.).——*F. Bing.* —Anthericum variegatum, also called Chlorophytum elatum variegatum.——*Kerry.*—Libertia formosa.—— *E. H.*—We do not pretend to name Coleus-leaves. It is impossible to be certain as to their identity, as there are so many varieties in cultivation. The only way is to send them to someone who grows a collection, as then the leaves could be compared with others; but very few grow Coleuses extensively now-a-days.——*Bull* — Creeping Jenny (Lysimachia Nummularia), a native plant; 2, Francoa ramosa (Maiden's Wreath).——*Salopian.*—1, Rose Lamarque; 2, Next week; 3, Halesia tetraptera (Snowdrop-tree).——*H. H. T.*—Your Rose is correctly named. It is a paler flower than usual, but is undoubtedly Gloire Lyonnaise. As a rule, it is a good early Rose when pegged down, and flowers again in the autumn upon summer shoots.—— *J. T. W.*—Common Maple (Acer campestre). ——*Walton.*—One of the Cytisus, probably C. sessiliflorus. ——*A. D. Raymond.*—1, Pyrus floribunda; 2, Spiræa hypericifolia; 3, Arabis albida; 4, Cupressus Lawsoniana lutea; 5, Asperula odorata; 6, Allium vernale.—— *M. F.* —Coronilla Emerus.——*C. Buckley.*—1, Lælia tenebrosa; 2, Oncidium crispum; 3, Aërides odoratum.——*Subscriber, Boscastle,*—Muscari comosum monstrosum (the Feather Hyacinth).——*H. Tunnington.*—1, Pyrus aria (White Beantree); 2, Mespilus canadensis.——*M. G.*—Cytisus uralensis; 2, Berberis stenophylla.—— *T. G. Beech.*—1, Seedling Amaryllis (poor variety); 2, Cytisus var. (specimen quite withered); 3, Cytisus purpureus.——*P. W. Mules, Whaley Bridge.*—Erica arborea.——*R. M.*—Feather Grape Hyacinth (Muscari comosum monstrosum).

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. A.—The best book on stove and greenhouse plants, illustrated, is Thomas Baines', price 15s. 9d., post free, from Mr. Murray, Albemarle-street, London.——*West Meath.*—Of course, the same price as we charge should be the rule; the yearly subscription is 6s. 6d. from this office.

BIRDS.

MANAGEMENT OF CAGE BIRDS.

THE BLACKBIRD (TURDUS MERULA).

THIS bird is not only a delightful songster, its strain being rich and mellow, but is also a good mimic, readily learning to whistle a tune, and even to speak a few words under good training. In its wild state it pours forth its song shrouded among thick foliage, saluting the dawn of day with its melody, and towards evening, when all is calm and tranquil, may its song again be heard. Frequenting the borders of woods, gardens, thick hedgerows, and shrubberies, it begins to build its nest in March or April. It is, however, more recluse in its habits than the Thrush, and on being alarmed it utters a sharp, long-continued chattering cry until it has gained a place of refuge. The nest of this bird consists externally of fibres, small twigs, and Moss, lined with mud, but over which is spread a layer of fine dry Grass. The eggs are usually four or five in number, of a fine bluish-green, with blotches of a darker tint. The site selected for the nest is often a bower of Ivy, a thick hedge, or a bush of some luxuriant evergreen. The Blackbird feeds upon worms, snails, and insects, adding to its fare Currants, Cherries, Raspberries, Gooseberries, and Green Peas in their season, and where numerous the ravages of these birds in gardens is sometimes very serious. The young of this species are easily reared by hand, and should receive the same treatment as that recommended for nestling Thrushes, while the adult birds may be fed upon Barleymeal, Oatmeal, lean meat, ripe fruit, worms, snails; indeed, almost any kind of food is readily partaken of by the caged Blackbird, a meal of green Peas, either raw or cooked, being an especial treat. The old-fashioned wicker-cage in which Blackbirds and Thrushes are sometimes kept is not to be recommended, being cold and draughty and difficult to keep clean. A large well-made wooden cage, with close top, is the best, affording the shelter and retirement in which the Blackbird delights. The male and female of this species differ in colour. While the plumage of the male is velvety-

black, the bill and orbits of the eyes being orange-yellow, the female is brownish-black, passing in the chest into umber-brown, each feather having a greyish margin. Until their first moult the young males resemble the adult female in plumage. S. S. G.

Feeding Goldfinches (*E. M. O*).—In its wild state the food of the Goldfinch consists of the seeds of the Thistle, Groundsel, Canary, Dandelion, Rape, etc., and in confinement may be allowed a greater variety of food than most other finches. Hemp-seed must, however, be supplied sparingly, as it will darken the plumage if given in quantity. The best Rape-seed is that which is the smallest and of a reddish hue; the birds will eat this while discarding the large black kind. You may vary the diet of your Goldfinches with Flax, Millet, Maw-seed, Groats, and Thistle-seed. They will not grow any larger than they are at present, but you can improve their plumage by giving them now and then a little cod-liver-oil on a piece of soaked bread—this has also a tendency to prevent asthma.

Canary losing its feathers (*E. M. O.*).—The loss of feathers in cage-birds arises from various causes, such as an overheated atmosphere, sudden changes of temperature, general debility, and from lack of some of the elements needful to elaborate a new covering. You appear to be feeding your Canary judiciously, and it seems to be in good health. Sulphur and lime enter largely into the composition of feathers. It would be advisable, therefore, to supply the bird with sulphate of iron, dissolving it in the drinking water in the proportion 2 grains of the former to 1 ounce of the latter; or give a little bread-and milk now and then in which is mixed a pinch of flowers of sulphur. A rusty nail in the drinking water will add a tonic property to it and benefit the bird.

POULTRY AND RABBITS.

POULTRY IN JUNE.

The sixth month of the year is often a most busy one in the poultry-yard, for hens are still laying freely, chickens and ducklings are being hatched apace, the older birds are getting ready for marketing, while Turkeys and Geese are busy with their maternal duties, the Geese being for the most part those which are bringing out their second broods this year. Eggs are still plentiful, but at this time of year among large flocks scarcely a day passes but one or more hens display a desire to sit. June chickens are perhaps some of the most difficult to rear, the pullets may be looked upon as worthless so far as egg production is concerned until the new year comes in, while the cockerels which come ready for market in September can only be sold at ridiculously low prices. In spite of these drawbacks there is a desire on the part of breeders generally to hatch as many as possible. Here comes mistake number one. Next, in the case of old hens, the owner too often misses a good market, for to a gamekeeper in the height of the rearing season no broody hen, whatever her age, will prove unacceptable. Thirdly, too frequently these inveterate sitters are left upon the nest day after day, either spoiling or breaking a good proportion of the eggs laid by the other hens, and, at the same time, postponing the day when they will once more become productive themselves. Poultry-keepers should keep quick returns steadily in view. When broody hens become plentiful eggs begin to rise in price. The wisest course, then, is to go in for eggs now instead of chickens. To accomplish this end all that is necessary is to take care that the broody hens shall be removed to an open coop with a sparred bottom, and thus be prevented from making a nest to squat upon. In a few days the desire to sit will be abandoned, and shortly afterwards laying will once more be indulged in. Aged cocks, drakes, and Ducks, and worthless hens are all best cleared off before summer begins in earnest, for overcrowding is not desirable in the hot weather. For the same reason cockerels should be sold or killed as soon as they reach the proper size. The spring pullets, on the other hand, must be retained, for they are the most valuable stock upon the ground. They are best separated from the remainder of the poultry, and provided with a summer's run, where they have nothing to do but to grow and prepare themselves for their winter's work. Their removal to other quarters gives their owner an opportunity to hasten the growth of less valuable chickens, so that by the end of the summer in ordinary yards there shall be no Fowls upon the premises beyond the laying and breeding stock.

In those yards where autumn chickens are hatched in large numbers to provide table-birds for the winter and early spring it will be advisable to give the cocks a rest, and thus insure larger broods at the end of July. The hatching of autumn chickens may, I consider, be more extensively followed than is at present the case, especially where there is a demand for sitting hens in March and April.

An August pullet will lay, in most cases, as early as the pullet which may be hatched in May, and will generally be ready to sit in the March following the date of hatching. I would therefore suggest to those readers who may require such birds to make up a breeding pen, say an Indian Game cock and Dorking or Cochin hens, some time about the end of June or early in July, and use all the eggs for sitting purposes. I do not think it likely they will regret the result. I should always advocate the use of Game or Dorking cocks for autumn chickens intended for the table. Goslings should be getting large enough to be able to take care of themselves, while the main crop of ducklings ought also to be nearing a marketable size. Turkey chicks will demand all the attention which can be given them, while those of Guinea Fowl will be gradually increasing in numbers. On wet days opportunities will arise for cleansing and lime-washing the Fowl-houses and coops; an operation which can never be too thoroughly done. D.

Hens suffering with tumours (*J. M B.*).—Tumours and abscesses are often caused through an external injury of some kind Fowls sometimes receive injury from their perches being placed too high, and from being badly arranged in the hen house, for although poultry when at liberty usually roost upon high branches of trees they, in descending, have a considerable distance to fly, and so alight upon the ground gently and without hurt; on the other hand, birds in a confined roosting-place are obliged to flutter down almost perpendicularly, which causes them to come into contact with the floor with great force; indeed, the keel of the breast-bone is sometimes broken in this way. Even where the perches are low hens are at times injured from having to flutter down in a limited space. Yours being heavy birds, it is very probable the tumours were caused in this way, for after an external injury inflammation is liable to set in; the sufferer, in trying to relieve itself by pecking and scratching at the place affected, makes matters worse by encouraging the swelling and the formation of a tumour. A tumour is red in its first stage, afterwards becoming a greenish-yellow in colour, and sometimes assuming a black appearance. The absorption of the matter may be effected by painting the part with spirit of turpentine; or, if the tumour be full of fluid, it should be opened by means of a sharp penknife, and after the matter is discharged a little vaseline or zinc ointment may be applied to heal the wound. Tumours are, however, the outward expression of several different morbid conditions, and it would have been well to have taken professional advice before killing off the hens.

Ailing chick (*M. C*).—The substance you refer to is probably a part of the yolk which has not been absorbed by the chick. This should have happened before the chick left the shell, and when this does not occur the chick is naturally weak, and often fails to live beyond the first week or so. By this time we daresay the substance has dried up. Treatment is of no avail in such cases.

Eggs with dark yolks (*P.*).—There is not the least doubt that an excess of green food is certain to make the yolks of the eggs from the fowl thus fed of a richer or darker colour than when the bulk of the food is corn or meal. We believe, too, that the dark green hue complained of may be brought about by the too free use of one particular plant, such as Trefoil, but we cannot speak as to this from personal experience. The remedy is simple. Make a wired-in run sufficiently large to give the birds plenty of room, but take care to keep the Grass closely cropped. We should also feed less liberally for a time, as the hens just now are in high condition. It may be well to point out that the hens may be able to gain access to some plant of which they are very fond, although we still think the Trefoil is the offender, as Clovers generally are so thick in most pastures this year.

Vermin in hen-house.—A little carbolic acid added to the whitewash will kill vermin in the hen-house.

LAW.

Sub-tenancy of an allotment.—Last Michaelmas a person hired an allotment of 20 rods, and he agreed to let me have half of it by paying one-half the expenses, which I did pay. The land is now under vegetables and fruit-bushes, and he wishes to turn me out. Can I claim any notice from him? Can I claim compensation from him?—Upset, *Norwich.*

*** What are you—tenant to the original allotment hirer, or what? You say you paid half the expenses. To what expenses do you refer? You do not mean rent, do you? If you state exactly what bargain you made, and say if you pay any rent, and also whether your rent is paid to the allotment hirer or to the landlord, your question may be answered in precise terms. But there is little doubt that you are sub-tenant to the person who hired the allotment, and that the allotment is a holding within the scope of the Market Gardeners' Compensation Act, 1895. If it be such, you are entitled to a year's notice to quit, expiring with a year of tenancy; but, as you have no written agreement, you will have to quit whenever your landlord's (the superior tenant) interest is determined by a proper notice. If your allotment is cultivated as a market-garden you may, on quitting, claim compensation for the fruit-trees and bushes and such vegetable crops as are of a permanent nature—Asparagus-beds, for instance; but you should not have any temporary vegetable crops, such as Cabbages, growing when you quit. Unless a proper notice to quit is given, you need not quit at all, unless you choose to do so.

Right of garden tenant to remove garden tiles.—When my late landlord accepted me as tenant I had to take about £5 worth of things, including about £1 worth of garden tiles. My tenancy expires next June. Can I remove the tiles? The property has lately changed hands, and I had a party to take the house who was willing to take the things, but the landlady, when accepting them as tenants, advised them to take nothing, and claimed the tiles as her property.—A. M.

*** Garden tiles are usually not affixed to the freehold, but are merely placed on the soil, or at a very slight depth into the soil, and may be removed without causing any injury. Such tiles are therefore generally removable by a tenant, and unless your landlady can show that she or her predecessors found or paid for the tiles you may remove them. It is fortunate that the case is a pretty clear one, as your question is stated in a manner which leads to various surmises as to the circumstances under which you became tenant, and as to the circumstances under which you are quitting. You say your late landlord accepted you as his tenant about five years ago, and that you had to take £5 worth of things, which leads to the supposition that you entered by arrangement with the then tenant, who was under no notice to quit. In that case the arrangement between you and the then tenant is in no way binding on the landlord, and your rights at the end of your tenancy will be such, and such only, as your predecessor would have possessed had his tenancy continued until now. The circumstances under which your tenancy will expire are equally obscure. When you say that your tenancy will expire in June, it would seem that it will then expire by effluxion of time, or by the expiration of a proper notice to quit; but when you go on to say that you had a party to take the place, and that the party was afterwards accepted as tenant by the landlady, it would seem that you are giving up by arrangement.

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PLANTING TUFTED PANSY SEEDLINGS.

Seedlings which were raised in heat during the first few months of the present year, and which were subsequently pricked off into boxes and cold-frames, are growing fast. Those in boxes, especially boxes of a shallow make, had better be planted out in their permanent quarters as soon as possible. If the ground has not already been prepared for their reception, this should be done without delay. Some nicely rotted manure may be incorporated at the same time, and the soil broken up as the digging proceeds. A few days should elapse between the turning over of the soil and the planting in order to sweeten it and to settle it down. If the choice of position be left to the grower, let the selection be confined to that part of the garden in which partial shade may be afforded the seedlings during the warmest part of the day. But do not let this deter others who are not so fortunately situated, as very good results may be obtained in almost any position, although, of course, that first suggested is certainly the best. The soil should be carefully levelled down and raked over before commencing to plant, and if the bed or border be a large one, a few lengths of boarding of fair width should be in readiness to place on the ground. By these means footmarks and consequent treading down of the garden soil are avoided. Also have in readiness a quantity of light sifted soil, and this should be passed through a sieve with a rather fine mesh—say, ½ inch. This material is invaluable when planting to a large extent. In dry weather this is of considerable importance.

How to plant.

An exceedingly interesting bed may be had by planting it exclusively with these seedlings. Either small or large beds will be equally attractive, but, of course, the larger the bed the greater the mass of colour when once the seedlings come into flower. One cannot, of course, obtain a mass of one colour by these means, but this is more than compensated for by the pleasing uncertainty of perhaps something altogether novel in colour and in form being found amongst those planted out in this way. If a bed has to be planted, therefore, no matter what the size or form of it may be, observe the rule to plant at an equal distance apart of 6 inches regularly all over the bed with the aid of the garden line. The planting is then very much simplified, and the work may be carried out quite expeditiously. There may be readers of Gardening who prefer to devote a piece of spare ground in the kitchen garden, or some such space in other parts of the garden to flower their seedlings. This is often done by those who raise a large number of plants and others, too, who look at the matter from a more profitable point of view. A good rule to observe is to plant in rows about 9 inches apart, and 6 inches to 8 inches between the plants, basing the calculations upon the vigour of the growth as seen at the time of planting. This may seem a curious rule to follow, but as appearances are not considered so much, and as the constitution and habit of many of the newer sorts vary so very much, some such rule becomes a necessity, and it pays in the end to recognise the fact. Take out with a garden trowel sufficient soil to comfortably embed the seedling, and so that the collar of the plant may be on a level with the surface of the garden soil. A handful of the material before referred to should be used to each seedling, and the soil neatly and evenly finished off before proceeding with the next one. Five rows in each block will be quite as many as will be found convenient to overlook in each block. Between the blocks of five rows each there should be a pathway of about 2½ feet, this distance being quite necessary if the well-being of the plants be considered. If more than five rows be planted in one block, it will be found inconvenient when watering, weeding, and giving the necessary attention throughout the summer months.

Watering.

In the late afternoon or evening the seedlings should be watered in with a fine-rosed can, and on each occasion when watering is carried out let it be done thoroughly. If copious waterings be given during periods of drought, and this be done in the evenings, the plants will make great progress, and reward the grower for this extra attention with a marvellous display of blossoms for some months. It may be wise to give them an occasional dose of liquid-manure, and if the weather be moist, a dusting of some artificial manure will be very beneficial.

Making selections.

The most interesting feature in raising seedlings is the unfolding of the florets of each new plant. There is always a pleasing uncertainty as to the result, and, therefore, they are often overlooked. Each new and promising sort—it may be it has advantages over existing ones, perhaps in colour, form, habit of growth, or extra productiveness — should have a label placed against it, with some sort of description applied in each case. These will each in turn have to be propagated.

Seedlings may be purchased at this time from many of the Pansy specialists, so that those who feel sufficiently interested, and who may have failed to sow a packet of seed in the early spring, may avoid disappointment by ordering a hundred, or a larger number of plants, and getting them in without delay.

D. B. Crane.

Sparrows and Roses.—Under the above heading in your issue of the 5th inst. I quite agree with "Mr. Piper" as to the usefulness of the sparrow at this time of the year, not only for the grub on Rose-trees, but Gooseberries, etc. When the sparrow has young it feeds them on insects. A neighbour of mine some years ago adopted every precaution to keep birds away from his Gooseberry-bushes, with the result that he had no crop, whilst, on the other hand, by allowing birds of all sorts, sparrows included, I had a heavy one. I am afraid "G. T. Padbury" is one of the old school, thinking only of the harm birds do without considering the compensation derived from the good. Without birds the country would be a desert.—G. T. Morris.

ROSES.

Exhibiting Roses.—I think of exhibiting Roses this year at one of the great shows, where (as I occasionally sell my surplus Rose blooms) I find I must compete in the nurserymen's class, although I am quite a self-taught amateur and have no gardener. This is, therefore, an ambitious undertaking for me, and I write to ask for a few hints from you as to the best way of conveying my blooms a distance of some thirty-six miles, partly road, partly rail, also the best method of staging the blooms? The show is under N.R.S. rules. Where can I get their list of exhibition varieties? I have about 250 varieties of H.P.'s and Teas. All are in splendid health and condition. Do you think with this number I could venture on the class for 72 varieties? I fancy the competition, though of first quality, would be less crowded than in the 36 class. The show will be held five weeks hence. What stimulative feeding would you recommend between now and then? Any hints most gratefully received. I have shown with first-rate success in smaller local affairs, but this is another matter, and a little help would be most acceptable. As time is short, may I ask for a reply with the query? — Amateur Rosarian.

*** As the subject is so seasonable we have pleasure in affording a somewhat longer reply than would be possible in our correspondence columns. As regards our correspondent, it depends entirely upon how many plants of a variety are grown. We know from experience how difficult it is to get even twenty-four varieties at a given date, and all in richest beauty. Our querist states occasionally the surplus flowers are sold, and consequently is under the necessity of competing with professional growers. This side of the amateur question is a very knotty point, and the present case seems rather hard. Still, we would by no means advise a venture into the higher classes. There are no less than twenty-three other open classes at Crystal Palace Show. The secretaries of the N.R.S. (Mr. E. Mawley, Berkhampstead, and the Rev. H. Honywood D'Ombrain, Ashford) will send a schedule with rules and regulations for members upon application, and also the official catalogue of Roses, containing much useful information to any exhibitor, post free for thirteen stamps, or by joining the society this and other books are given free. A few hints that may be useful is to have names clearly written, wires to hand for steadying the blooms, Moss and boxes ready, and a little observation as to which Roses expand more rapidly than others. It will also be necessary to feed well with liquid and other manures, and to pinch out all surplus buds from around the main bloom as soon as they can be handled. We would like to help our correspondent further than this, but the report and official catalogue of the N.R.S. will give all other information, except those most important points only to be learnt by experience. As to travelling, go as early in the morning as possible, have your boxes well ventilated, the Moss freshly sprinkled, and cut the flowers early upon the morning of the show day whenever possible.

Roses unsatisfactory.—I recently took over a garden adjoining my own, and in it is a large and lofty conservatory, with several Rose-trees. These trees I found covered with aphides, and with the aid of Tobacco-water I reduced their number, but never really got the victory over great numbers. I send you a few Rose-buds to show the condition into which they have suddenly dropped. I should like to know if this discoloration is caused by aphides, or is it a natural dying down of the flowers?—Omega.

*** The very heavy attack of aphides is the cause of your Roses failing so seriously. You must fumigate as advised in our issue for May 22. The combination of Tobacco-smoke and syringing will kill all aphides, and it is fortunate the fumes are more effectual at the top of the house, where we presume your chief difficulty lies.

628.—**Roses in jadoo-fibre.**—Replying to your correspondent, *re* the above, I have grown Roses in many forms and stages in jadoo. My experience is the same with Roses as with most other subjects that need considerable and prolonged support: the jadoo is not sufficiently lasting. When mixed with a little stiff soil, and fed by liquid-manures, Roses thrive well in it. After trying this useful substitute for soil upon a large number of varying subjects, I have come to the conclusion it is most suited to soft-wooded and rapidly-growing plants, such as Coleus, Begonias, and the like. Undoubtedly it is a grand thing for Ferns and some slow-growing plants, but for Roses I much prefer a mixture of loam, leaf-soil, and natural manures, when well decayed. One can feed the jadoo-fibre with jadoo-liquid, but this I find much more expensive than the usual composts that have stood the test for many years. Young Roses, and especially Rose-cuttings, will root very freely in the fibre.—P.

W. A. Richardson Rose flowers of poor colour.—I am sending some Roses cut from William Allen Richardson. Will you kindly tell me why the flowers are not the right colour? Can I do anything to restore the colour? The buds look ill-shaped, as though eaten by insects. I have syringed it daily with water. It is growing on a wall, and has had a good mulching of manure at the beginning of the season, as well as frequent watering.—J. J. W.

*** It was the cold weather at the end of last month that has caused your Roses to be so unsatisfactory. W. Allen Richardson is subject to great variations of colour, but we notice the pale yellow blossoms more frequently during a cold season, and with the first blooms. Some of our own trusses upon walls are carrying blooms of three distinct shades. They seldom come so pale under glass, and this would seem to confirm the result as from cold.

Roses unsatisfactory.—I enclose a few specimens from my Rose-trees. They seem to flourish up to a certain point and then cease to develop.—Nemo.

*** No wonder your Roses are not satisfactory when so covered with aphis and the "honey-dew" resulting from their deposits. They must be washed off. Many of the buds had been eaten by the night-feeding weevils, which are more prevalent this season than usual.

Abnormal growth on Roses (*W. Marsh*).—We have often noticed such abnormal growths upon Roses, and more especially upon Souvenir de la Malmaison (the name of your Rose). The sole cause is a severe check from cold weather, and it is much more prevalent upon double flowers that are a long time opening. If you examine them closely you will find both leaves and petals have been so confined that they have become crippled and useless.

Rose unsatisfactory (*Breckonshire*).—The sudden changes of temperature sure to exist in so small a house may be one cause. A damp atmosphere at night, with little ventilation until late in the day, would also cause decay of the outside petals.

Rose Mrs. W. C. Whitney (*H. T.*).—This has a sweet and powerful perfume of the La France type, but this is not its only attraction, for it is exceedingly free-blooming, and the colour is a lovely rosy-pink. It is a large Rose, flowering in clusters, but not a very double variety; more suited as a garden Rose than for exhibition.

Rose Souvenir de Lady Ashburton (Tea).—One might almost call this the rainbow Rose. The lovely tints of colour in this variety are almost indescribable. The nearest approach to it is Marie Van Houtte when the flower is nearly dropping, only the bronzy tint is deeper. The form of the flower is of a type beloved by artists, informal and graceful, and the habit of growth is vigorous.

H. P. Rose Laurence Allen.—It is long since a new Rose has so much impressed me as this grand Hybrid Perpetual. The colour is so clear and bright a pink, after the style of Baroness Rothschild and Spenser, but brighter and of better form. It also has a decided advantage over those and other similarly coloured varieties in its delicious perfume. This is where so many of our light-coloured and pink Hybrid Perpetuals are at fault. Baroness Rothschild and its descendants have no perfume whatever, but Laurence Allen is difficult to beat among the whole of our many hundreds of varieties. It is introduced by Messrs. Cooling and Son, Bath, and is one of the hybrid seedlings raised by the late Mr. H. Bennett, of Shepperton.—P

HORSFIELD'S DAFFODIL.

This is one of the finest of all trumpet Daffodils, and is handsome not only in colour, but in form.

Horsfield's Daffodil (Narcissus Horsfieldi). E.

A vaseful of this kind alone with its own foliage is welcome in the house, and it flowers just before Empress, this latter kind prolonging the season. The perianth is broad and creamy-white, the trumpet rich yellow.

Spiræas.—When these have done blooming in the spring, and, of course, either in rooms or greenhouses, the balls of soil and roots are hard and too often, in spite of moderate waterings, rather dry. To plant these out into the open ground if exposed to the sun is poor practice. It is better when turned out of the pots, first to remove the crocks or drainage, then split the balls through the middle with a sharp knife, drop the balls into a tub of clayey water, and after allowing them to soak for a few minutes, plant at once on a north or shady border, giving as required during the summer occasional waterings. When well cared for, the plants will often do wonderfully well, and when they can remain a second year before lifting and repotting, will make some first-rate stuff for the purpose, quite equal to purchased clumps.—D.

Irish mouse-traps.—(See Gardening, May 22, p. 1 5).—W. M.

*** *An improvement on this is a new kind, in which the springs are set in a moment, without requiring any thread or darning-needle*

Streptocarpuses were one of the features at the Temple Show recently, and one could not but notice the rich range of flower colouring, some almost pure white, others richly blotched. Their easy culture makes them suitable for the amateur's greenhouse.

RICE-PAPER PLANTS (ARALIA SIEBOLDI AND A. PAPYRIFERA).

These Aralias are plants of easy culture, and have foliage of great beauty and of striking endurance. A. Sieboldi is not only an excellent plant for prominent positions in the open air on lawns and at the edges of shrubberies, etc., but it is one of the very best of all window and room plants so treated. If just kept fairly moist at the roots it will look well for months together. An occasional washing overhead with water from a syringe should be given to free the foliage from dust, and then the plants always look fresh. Of course, when this washing is performed the plants must be removed from the room and be placed in a sink, or in the open air, so as to give a thorough cleansing and avoid the inevitable mess this makes if done in a room. If a syringe is not available then the leaves can be kept clean by sponging, and for this, of course, removal is not requisite. This most useful plant admits of ready increase by means of seeds, and these may be raised and the young plants grown on in any ordinary frame. Early in April a start should be made by sowing the seeds, which will soon germinate and make fair plants by the ensuing autumn, and fit for planting out or other purposes the following season. There is scarcely a shrubbery border anywhere but what might be greatly improved by having a few Aralias interspersed among the Evergreens, where their fine, bold outlines and distinct character would do much to add to the effect of any herbaceous plants growing in front. In many districts in this country the Aralia Sieboldi is perfectly hardy, so that there need be no hesitation in leaving it in the open air if set out in a spot where it is sheltered from cutting winds, and it is yet well exposed to the sunlight, so as to thoroughly ripen and harden the growth. There is

A variegated form of this Aralia having creamy-white edges to the leaves. Generally speaking, I do not admire variegated leaved plants so much as others do; but this one is an exception to the rule, and is well worth attention for the sake of its real beauty and easy culture. The best way to increase the variegated variety is to make an incision with a sharp knife partly through the stem, and then to bind up the cut with some Sphagnum or Moss mixed with fibry peat, which should then be kept moist to encourage the formation of roots. As soon as these are freely produced the head may be severed, and then if potted it will soon make a handsome and well furnished plant. Once the top is removed in this way the old stem will break out into growth again, when all the side-shoots, except one of the strongest and best situated, may be taken off with a heel of hard wood and treated as most ordinary cuttings are by being placed in sharp sandy soil, and kept close where they can get a gentle heat; they will soon root and quickly form nice plants. Market-growers treat them well in this way. Where the so-called sub-tropical gardening is attempted a stock of

A papyrifera is almost indispensable, as it is one of the most strikingly ornamental plants that can be used either for groups or masses or as single specimens in conspicuous places; but, as its leaves are of immense size, it should be placed in the garden so as to be out of reach of strong winds, or they will get blown about and bruised in such a manner as to cause much disfigurement. Like all plants of similar habit and with large, spreading foliage and of quick growth, this Aralia is a gross feeder, and to induce a full development and bring out its full beauty, rich, deep soil should be afforded, and when the weather becomes hot plenty of liquid-manure should be administered, to prevent the escape of which by evaporation it is a good plan to mulch the soil around the stems with old manure, leaf-soil, or any other similar material that will not have an unsightly appearance. The readiest

Way to propagate A. papyrifera is to make use of all the larger portions of the roots, which may be cut up into pieces, each from 2 inches to 3 inches long, all of which, if buried in sandy soil and put into a hot-bed or where they can otherwise get a little warmth, will start into growth and make fine young plants by bedding-out time if kept gently growing on. Although perhaps not so serviceable as A. Sieboldi for indoor decoration on account of its woolly leaves

taking up dust and being difficult to clean in consequence, A. papyrifera is a grand-looking object in conservatories or greenhouses of fair size during the winter months. It is much too tender to endure our winter in the open air, but although this is the case, so tenacious to life is it that it may be stowed away almost anywhere with safety so long as it is out of the reach of frost. Any closed shed or disused room will, therefore, do, as the most that can happen to it is the loss of a few leaves, which are soon renewed when the plants are set out again in beds, etc., and which grow all the stronger for the few months' rest they get when so treated. During this dormant period only sufficient water at the root is needed to keep the stem from shrivelling. B.

Lilium croceum.—Though perhaps when compared with some of the best Lilies this is wanting in refinement, it is, notwithstanding, of considerable worth by reason of its robust nature and freedom of flowering. It comes among the early kinds, too, and is useful for associating with many things in the borders and shrubberies, and being of easy culture, perfectly hardy and cheap, may be grown in abundance in groups, if only for the purpose of brightening up shrubs of naturally sombre hue. The stout stems bear large clusters of erect orange blossoms, and these are now very effective in many gardens.

Edgings of the Thrift (Armeria vulgaris).—Edgings of this hardy plant to beds and borders are now looking at their best, the flowers standing out pleasingly from the rich green Grass-like tuft. It is surprising that this and other plants of a similar form of growth are not more largely used for making an edging to beds and borders. They make a far prettier picture than garden-tiles and boards.—B.

Spanish Irises.—What a lovely picture of many flowers was presented in big beds of these a few days since! They were mixed, and seemed so much the prettier in consequence, flowering just after the Flag-leaved Germanicas and rather before the English forms. No flowers so easily grown make the garden look so gay or are so lovely for cutting. Mixed with Single Pyrethrums and a few Flag-leaves, they are indeed beautiful in vases. These Spanish Irises are bulbous-rooted, and may be purchased by the 100 or 1,000 at what for the wondrous beauty furnished seem to be absurdly low prices. Ladies admire the soft flesh-whites, straw-yellows, oranges, blues, browns, mauves, etc., immensely.—D.

HOUSE AND WINDOW GARDENING.

THE WHITE LIGURIAN BELLFLOWER (CAMPANULA ISOPHYLLA ALBA).

CAMPANULA ISOPHYLLA and its variety alba, although perfectly hardy in the open air, are more popular as basket-plants in the greenhouse. It is a lovely free-flowering species, differing from C. gracilis in its diffuse, more or less descending stems, larger and softer, somewhat hairy leaves, and large flat flowers. It will thrive with ordinary care if planted out in a window-box, flowering freely all the summer. To grow it on the rock garden it should be planted so that the stems hang over a ledge, in this way the masses of blue and white flowers being very effective in a sunny and rather dry place.

It is a charming plant for growing in a basket in a cool greenhouse, where it is very effective, the slender stems covered with flowers hanging down in an extremely graceful way, sometimes as much as 2 feet. In a pot it makes a very pretty plant for a room. It is very easily propagated by division of the roots.

The White Ligurian Bellflower (Campanula isophylla alba).

Aquilegias (Columbines) for decorations.—There are few early summer flowers from the hardy border which will compare with the charming blossoms of the Aquilegias for all forms of decorative work. They are so delicately coloured that the wonder is they are not more often sought after than is the case at present. Just now there are different forms flowering most profusely with me. A handful of the various forms, and in a pleasing variation of colours, make one of the prettiest arrangements for vases that one can imagine, while a table decoration made up exclusively with this flower and under artificial light is quite unique, and the simplest novice would find no difficulty in arranging them. The foliage of the plant is a good accompaniment to the flowers.—D. B. CRANE.

SOWING AND THINNING.

YEAR by year is the advice given not to sow seeds too thickly, and though to some extent it may be followed, it is none the less certain that at this time of the year there is need of further remarks on the judicious thinning of both vegetable and flower crops. With both these the object of removing part of the seedlings is the same—namely, the removal of a portion of the plants so that those remaining may have room to develop thoroughly and grow sturdily. The season to perform the operation depends on the growth and nature of the plants, but if possible in showery weather, as the removal of a portion of the seedlings naturally disturbs the roots of those remaining, and a shower following settles the soil about them, and they, in consequence, suffer considerably less than under the influence of parching sunshine.

One of the secrets, if so it can be called, both with flowers and vegetables, is to thin early, because if a whole mass of tiny plants is left to eke out an existence as best they can, one naturally becomes the enemy of its neighbour, and mutually robbing each other of the sustenance required for their well-being the whole suffer in consequence. The fear of attacks from insect pests often deters growers from thinning vegetables early enough, and as in this respect it is advisable to use discretion, the operation should be performed gradually, removing a few of the superfluous plants as soon as they are large enough to handle, and then going over them again at a later stage of their growth.

Taking vegetables, for instance, it is difficult to lay down any hard-and-fast rules for guidance as to the proper distance apart to thin the various crops, as varieties, soils, and localities vary so much that what would be advisable in one case would be hardly so in another. As a guide, however, for those not versed in this operation, Onions may be thinned from 3 inches to 6 inches apart, according to the variety. Short-horned Carrots usually grow well at a distance of about 6 inches from each other, while the Altrincham types should be allowed 10 inches. Leeks may be thinned to about 8 inches, and Beet about the same distance. Turnips want a space of 8 inches to 10 inches, and Spinach about 6 inches. Dwarf French Beans should be a foot apart, as they make branch growth, and Runners about 6 inches. Many people fail with the climbing French Bean owing to the fact that they grow it too thickly. As the plant makes a thicket of growth plenty of space should be allowed.

In case of flowers of the annual class it may be said that generally they should be thinned to about 3 inches or 4 inches apart—that is, of course, where they are sown in patches. Some will not require quite so much room, while others of a stronger growing character want a little more. The evils of not thinning are easily discerned, for almost before the seedlings have really started into permanent growth the stems will either be twisted round each other or pressed so closely that it is impossible for them to develop. H. H.

Gentiana septemfida.—This is one of the most attractive of the Gentian family in flower at the present time. The plant is well suited to cool and rather moist spots in the rock-garden, thriving well in gritty loam, or equally so in a mixture of peat, leaf-soil, and loam. The clear azure-blue flowers appear in a terminal cluster on a stem a foot or more high, with a disposition to a somewhat decumbent habit when left to itself.

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OUTDOOR PLANTS.

INULAS.

Though a somewhat extensive family if taken as a whole, there are really very few species possessing sufficient merit to rank among the first-class perennials of the present time. In the instances under notice, however, the few meritorious kinds are really acquisitions such as every collection of choice perennials should contain. Happily, too, all the kinds worthy of extended culture may be grown quite easily in any ordinary garden soil, though, of course, a better display may always be expected for any little extra outlay in labour or the like. Given 1½ feet or 2 feet of good soil, and this deeply worked and manured, even the most vigorous and enduring of perennials will display a marked improvement either in foliage or flowers, or both. And so with the Inulas, which for the most part are vigorous-growing plants. Their culture, then, presents no difficulty whatever, and their propagation is equally simple. Most of the kinds produce seeds freely, and may be raised in this way. I have never, however, been able to obtain seeds from I. glandulosa, even from well-established clumps. This species, however, is readily increased by division and also by root-cuttings where a large stock of the true kind is required. Indeed, by the system of root-cuttings any of the species may be increased should occasion require, and in like manner the same process may be applied to any well-marked form, as the seedlings are not all alike true. In speaking of the root-propagation of these plants, I may say I have only experimented with glandulosa, hirta, and Oculus-Christi, but I take it that other kinds would also answer to the same treatment. The best time for putting in root-cuttings is during the winter months, December, January, and February, when the plants are dormant. Where a little greenhouse warmth is obtainable it is a quicker way of raising many perennials than by seed or even cuttings, and, more than this, it is work that may be pushed on at a time when there is a cessation of other work. These Inulas may be planted either in autumn or early spring, preferably autumn, so that they may better withstand a hot, dry summer, so detrimental to many late spring-planted subjects. Where good seeds are obtainable these come up quickly and in goodly numbers. If sown in the open ground, which is really the safest and simplest way for the strongest perennials, they should be allowed to stand till the autumn ensuing, planting them out early in permanent positions. The following are among the most worthy of general cultivation:—

I. glandulosa.—Though a very old inhabitant of our gardens, having been introduced from the Georgian and Caucasian Alps during the first decade of the present century, this fine perennial was but little known in collections of hardy plants fifteen or twenty years ago. It is one of the handsomest of early summer-flowering perennials, and capable of making a rich display by reason of its large deep golden-orange flowers. These latter are fully 4 inches across, and distinct from all else in the garden at flowering-time. This species is a variable one. The typical species from the Caucasus may always be distinguished by its exceedingly narrow, thread-like entire florets, and which in certain stages are slightly twisted. Indeed, the type in its flowers alone may not inaptly be compared to a fine single-flowered Chrysanthemum, though far more refined than the latter flower usually is. Well-established clumps of it produce quite a tuft of its shaggy radical leaves, and from these issue the flower-stems, rising to about 2 feet high. The stems are also furnished with smaller leaves, while the flower-heads prior to expansion are downy. The plant is readily increased by division and by cuttings of the roots, as noted above. This species should now be found in all good collections of hardy plants.

I. grandiflora.—Another handsome kind growing 2 feet or more high and worthy of extended cultivation. The flowers of this showy perennial are of a deep rich orange and even larger than in the case of I. glandulosa, the stems very stout and erect, and thus capable of self-support. Easily raised from seeds or by division.

I. Hookeri.—A very handsome species, attaining 4 feet or more high when fully grown. It is usually seen at about 3 feet high unless grown in a strong holding soil. The flowers are about 3 inches across, the ray florets numerous and of a lighter tone of yellow than in the preceding kind. I. Hookeri flowers later in the season, usually August and September.

I. Helenium.—A well-known native species possessed of a vigorous habit of growth and large, handsome foliage, that suggest at a glance its adaptability for the wild garden or similar position. It is worth attention in large gardens where fine-foliaged plants are esteemed, and in isolated positions where room can be given this plant should not be overlooked. The flower-heads are bright yellow, and well-developed examples of this plant are very striking in the woodland garden.

Besides the foregoing, such kinds as hirta, viscosa, bifrons, ensifolia, and squarrosa may be mentioned. These are all yellow-flowered species, not more than 2 feet high, and all bloom during the late summer and early autumn, when gardens generally have their quota of the more showy composite flowers—a fact which may in some degree account for the Inulas being but little grown.

E.

DAPHNE BLAGAYANA.

This is one of the most beautiful of spring flowers. It is apt, however, to die off almost at a moment's notice. We know of a fine stock of this Daphne that had taken years to work up entirely lost in a very short time, although every care was taken to guard against injury. The secret is that Daphne Blagayana is a short-lived plant, and that propagation should be carried on periodically. It may be increased by layering the trailing branches. D. Blagayana is well worth the trouble anyone may take with it, an ample reward being obtained in the numerous bunches of deliciously-scented creamy-white flowers. It was discovered about 1837 in Carniola in clefts of rocks, fully exposed to the southern sun, but while requiring a sunny position its roots must be cool and moist, a combination very difficult to attain in artificial structures. It should be planted in a partially shaded position where it will not get dried up in hot weather. It is said to do well on chalk. The plant is quite hardy, having stood in Yorkshire 23 degs. of frost. The flowers, which are in compact umbels, each about 8 inches across, rival those of the Orange in sweetness and purity.

K.

Daphne Blagayana.

Cheiranthus alpinus.—This is now very charming in many positions, and is very effective in its pretty masses of pale yellow blossoms. The plant is of such easy culture and so free flowering that it may be largely used in gardens with good results. A little later cuttings will be abundant, and, as these root freely and make pretty tufts for another year note should be made of it for future use. The whole plant scarcely exceeds 9 inches high.

ORCHIDS.

TRICHOPILIAS.

These comprise a very interesting and useful set of Orchids, some at least of which should be included in every collection claiming to be at all representative. Botanically they resemble the Oncidiums, but are quite distinct from these well-known Orchids. Nearly all of them thrive best in the cool end of the Cattleya-house, the growth being stronger and the flowers more freely produced than in the cool-house. The only exception to this rule is T. fragrans, which, with its variety nobilis, perhaps, likes less heat, though it is by no means unusual to see them doing well alongside the others. These are also known as Pilumnas, and as such are usually labelled in gardens and nurseries. Strict attention to watering, cleaning, and other details are necessary to grow them well, but they are by no means difficult to cultivate. They do well in baskets suspended from the roof, in such a position getting abundance of light and a free circulation of air about them. The roots are of good size and freely emitted from healthy plants, but if, as sometimes happens, the compost gets into a close and heavy condition, many of them will decay, and the plants are given a check from which they will not readily recover. T. fragrans and T. nobilis are especially liable to this, and in the cool-house where growth is not so rapid are more difficult to bring round than the heat-loving kinds. The best thing to do with such plants is to pull them right out of the sour compost and wash every part of them in clean, soft water, cutting out all decayed roots, but carefully preserving any sound ones that may have escaped. Then lay the plants out on a moist stage or a layer of Moss, as is usual with imported plants, and if in a temperature a few degrees higher than the house they are grown in, so much the better. Dew them over occasionally with tepid water, and if not too far gone signs of new growth or root will soon appear, when they may again be placed in pots or baskets. Three parts of Sphagnum to one of peat-fibre will make a good compost for them, and these weak plants must only be allowed a mere surfacing of this material, other and stronger plants having a greater thickness with plenty of crocks and charcoal added to ensure aëration. The pseudo-bulbs of the majority are not very strong, so will not stand much drying in winter. They must only be watered sufficiently to keep these in good order, however, any greater quantity being injurious to the roots, causing them to decay, as mentioned above. Several of the species are not at all constant in their habits of growth and resting; consequently, some plants may require a

good deal more moisture than others at certain times, but the winter is the usual resting season. While growing freely in a compost as described, free supplies of water are needed, the position of the plants causing them to dry up very quickly. When the pseudo-bulbs and leaves are approaching their full size they must be exposed as much as possible to the sun, the foliage being hard by this time and not easily injured. This exposure must not, of course, be brought about all at once, but let the blind, if possible, be drawn up, say, an hour earlier for a week, then by degrees doing away with the shading altogether. This consolidates the whole system of the plants, rendering them more free-flowering and not so easily checked by any slight variations of temperature or errors in watering.

There are several other kinds besides those named below, but these are the most generally grown and useful. All the species inhabit the countries on the west coast of America, extending from Mexico in the northern continent, through Guatemala and Columbia to Peru, this wide range making them easy to obtain, and consequently cheap.

Trichopilia crispa is a very beautiful species, not so common as the others and rather variable in colour. In some forms the sepals and petals are chestnut-red, in others more approaching crimson, crisped and wavy on the margins and edged with white. The lip is a beautiful feature of the flower, deep crimson in the throat, spreading in front and beautifully crisped. From the shape and delightful shading of this organ the species has been called T. gloxiniæflora. It is not unusual for this kind to flower twice in a season. It comes from Costa Rica, and was introduced in 1849. A variety of this, marginata, is a much superior form, the sepals and petals very bright carmine, the lip being distinctly margined with white.

T. fragrans is a very elegant and beautiful kind, producing pure white flowers with a dense yellow eye, the lip being very much like a flower of Dipladenia boliviensis. As the name implies, the blossoms are fragrant, and they last a long time in full beauty, flowering at various times in the year. On account of its vigorous habit this kind does best in pots, and, as mentioned above, thrives in a cool-house. The variety nobilis is stronger-growing than the type and produces large flowers. It is a native of New Grenada, introduced in 1856.

T. Galeottiana is a smaller flowering but distinct and pretty kind, a native of Mexico. The flowers occur one or two together on a short, drooping spike, the sepals and petals yellow, the lip white in ground colour, with a yellow throat and crimson spots. Like most of the other kinds, the tints vary considerably. It was introduced in 1859.

T. suavis is one of the most popular kinds, easy of cultivation and a really good and useful garden Orchid. The present is its flowering season, and the blossoms are creamy-white in ground colour, the sepals not so wavy or twisted as usual. The lip is large and open in front, the throat yellow, and there are many irregular spots of red on the front lobe. This comes from Costa Rica, where it grows at considerable elevations. It was introduced in 1848.

T. tortilis is an old kind, yet still worth growing on account of its distinctness and free-flowering nature. Quite small plants flower freely, the flowers occurring singly on drooping stalks; the sepals and petals are twisted and wavy, light chestnut-brown, with a yellow margin.

Cymbidium (*G. C. Lees Milne*).—The name of the Orchid sent for identification is Cymbidium ensifolium. The plant is of easy culture, and should be grown in an ordinary intermediate-house temperature the whole year round, choosing a rather moist, airy position, and where it can be conveniently shaded from bright sunshine. Ample pot room should be provided, the pots being drained to one-third of their depth with broken crocks; over these a thin layer of Sphagnum Moss should be placed to prevent the fine soil washing down amongst the drainage. For a compost select the best fibrous peat and turfy, yellow loam in the proportion of one-third of the former to two-thirds of the latter, with the addition of a little silver-sand and finely-broken crocks to assist the water to pass freely through the soil. When repotting the plant, instead of elevating it above the rim of the pot, as is usual with most Orchids, it is preferable to keep the soil and the base of the plant a trifle below the rim, so as to make watering easy and thorough. After repotting the compost should be kept just moist, but when the plant has become well rooted and is growing strong then water may be gradually increased. After flowering give the plant a short rest by keeping it rather dry at the root, but not so dry as to cause the bulbs or leaves to shrivel.

GARDEN PESTS.

PSYLLA PYRI (THE PEAR-SUCKER OR JUMPING PLANT-LOUSE).

These little insects are often mistaken for aphides, but they do not belong to the same family, though the relationship is by no means distant. Like them, they injure the plants they attack by sucking the juices from the leaves and young shoots, but they have the power of being able to spring rapidly away when disturbed, which aphides have not; the Pear-sucker also differs in not being injurious to plants when it has reached maturity. Pear-trees are very liable to the attacks of this and one or two other nearly allied species, and are often much injured by them when present in large numbers, as not only is a large amount of the sap withdrawn from the leaves and shoots, but the pores of the

THE PEAR-SUCKER.
1, Slightly magnified; 2 and 3, magnified considerably.

leaves are so choked up by the sticky secretions of the insects that they wither and curl up, and the fruit in consequence does not come to perfection. The perfect insects are very difficult to destroy on account of their being so very active, jumping or flying away immediately they are in any way disturbed. The immature individuals have no wings, and may be destroyed by syringing or spraying with some insecticide, such as soft-soap 1½ lb., the extract from 2 lb. of Quassia-chips, and 25 gallons of water; or 2 quarts of soft-soap, 1 gallon of boiling water, and 2 gallons of paraffin-oil, churned or pumped together thoroughly for a quarter of an hour, and then add 30 gallons of water and keep well mixed; or soft-soap 1 lb., flowers of sulphur 1 lb., added to 8 gallons of water. Syringing the trees with soft-soap and water in the winter when there are several degrees of frost, so that the mixture freezes on the trees, is said to be a very useful plan, for when there is a thaw the ice brings away all the eggs which may be attached to the bark or hidden in any cracks, etc. Some of the Pear-suckers pass the winter in crevices of the bark or other sheltered places, and as soon as the buds begin to swell they leave their winter quarters and lay their eggs on the under sides of the leaves, on the young shoots, or even on the flowers. The eggs are laid in large numbers near one another; they are oval, and of a yellowish colour. In the course of about a fortnight the young are hatched out, and at once begin feeding by thrusting their beak or suckers into the leaf or shoot which they are on. After several changes of skin they become darker in colour and have the rudiments of wings; they then leave the leaves and congregate on the shoots in large numbers, from which they draw off great quantities of sap, and secrete a sweet, sticky fluid in such abundance that the pores of the bark are quite choked by it. Ants are particularly fond of this secretion, and may generally be found on trees infested by the Pear suckers. When the insect is nearly mature it makes its way again to the leaves, and changing its skin once more, it appears as the perfect insect. This family, the Psyllidæ, is so named from their powers of leaping, in which respect they much resemble their near relatives the frog-hoppers. The genus Psylla contains nearly thirty species. One, P. Mali, is very similar to the subject of this paper in appearance and habits, but it attacks Apple-trees; it may be destroyed by the same means, however. The Pear-sucker when full grown is about ⅛ inch long, and measures ⅜ inch across the wings when they are fully extended. When they first emerge from their pupa skins they are of a greenish colour, with red eyes, but they afterwards become of a reddish or crimson hue, shaded with black, which colour sometimes predominates. The wings are white and nearly of the same size. The head is wide and furnished with a pair of longish feelers, each composed of ten joints, the one nearest the head being short and stout, and the one at the end having two longish hairs, a peculiarity by which members of this family can always be distinguished. The young are about 1-10th of an inch in length, and are of a yellowish colour. In the next or pupa state the insect is darker in colour, and the wings of the future perfect insect are conspicuous beneath its skin. G. S. S.

Grubs destroying Dwarf Beans (*Hound's-green*).—Your garden is infested with the grubs of the common daddy-long-legs or crane-fly. They are often known by the name of leather-jackets on account of the toughness of their skins. They are most troublesome pests in gardens, and are very difficult to destroy. It is of no use trying to kill them with insecticides, as they cannot be made to reach them of sufficient strength to kill them, but a good dressing of nitrate of soda or salt well watered in is very useful, as it helps the plants, and is disagreeable to the grubs. Pieces of slate, turf, tiles, or board laid on the ground are useful as traps, as the grubs crawl under them at night, and may be found there in the morning. Slices of Turnips, Carrots, or Potatoes make good baits, if buried just below the surface near the plants. If a small skewer be stuck into each they will be found easier. They should be examined every morning.—G. S. S.

Worms (*G. W. C. Chapman*).—The worms you send are wireworms; they are the grubs of one of the click or skip-jack beetles. I am sorry to say that there is no wholesale way of destroying them known, except when the land can be fallowed, when a heavy dressing of gas-lime, well worked in, would kill them. In gardens where plants are attacked small slices of Carrots, Turnips, Mangold, or Potatoes, should be buried near them just below the surface. A small skewer stuck into each will show where they are. Small pieces of Rape-cake are also useful for the same purpose. Watering the plants with any liquid-manure would be distasteful to the wireworms, and would help the plants to withstand their attacks.—G. S. S.

Pear-tree leaves diseased (*Dandie*).—Your Pear-tree is infested by the Pear leaf-mite (Phyptoptus pyri). Pick off and burn any leaves which are so injured as to be of no further use to the tree. As soon as the leaves begin to fall in the autumn syringe the trees with 3 lb. of sulphuret of lime, 1¼ lb. of soft-soap, dissolved in 10 gallons of water; or 1 pint of soft-soap, 2 quarts of paraffin-oil, thoroughly beaten up or churned for a quarter of an hour with a gallon of boiling water, and then added to 10 gallons of water and kept well mixed. Syringe again in February, and let the mixture soak well into any cracks or holes in the wall. If it were possible to unnail the trees and give the wall a good wash of Portland cement, made up about as thick as paint, working it well into any holes, etc., it would be very useful.

Other replies will be found on page 231.

TREES AND SHRUBS.

SPIRÆA ARIÆFOLIA.

This is one of the most beautiful of the Spiræas, and very distinct from any of the family, growing freely, and in summer burdened with plumy, creamy-white flower masses. This Spiræa should be planted where it will not get dried up in the summer, and where, too, it will be shaded a little from the sun, as under these conditions the flowers remain longer in beauty. All the Spiræas, S. ariæfolia in particular, repay for good treatment, and should therefore be top-dressed occasionally with good soil, and spent wood removed also. Under this treatment the plant develops into a handsome, free-growing, and graceful bush.

Philadelphus Boule d'Argent.—This is one of M. Lemoine's hybrids, claiming parentage from the little New Mexican Philadelphus microphyllus, the other parent being a double-flowered form of P. coronarius (the common Mock Orange). We have now several varieties in our gardens raised by the above-named French cultivator, in the production of which P. microphyllus has played a part. The oldest and that most generally met with, P. Lemoinei, is a really charming little shrub that gains hosts of admirers every year. It is in full flower in early June, and the pleasing fragrance of the blossoms is very different from that of the European Mock Orange (P. coronarius). Philadelphus Boule d'Argent is sure to be thought favourably of by those who admire double blossoms, as it forms a neat, compact shrub that flowers very freely.—H.

A fragrant plant.—Magnolia fuscata can be successfully flowered when not more than 1 foot high, a peculiarity it shares with another small-growing evergreen species—M. pumila, a native of Java. The flowers of this are larger than those of M. fuscata, and of a cream colour tinged with green. They are also very fragrant, especially in the evening. This Magnolia requires more heat than the Chinese species. Magnolias are notoriously difficult to strike from cuttings, but these two can be induced to root without any particular trouble. The only other evergreen species that I am acquainted with is the tree-like M. grandiflora, which was sent to this country from North America as long ago as 1737; in fact, the three species mentioned above were all introduced during the last century.—P.

Raphiolepis ovata.—The name of Raphiolepis japonica integerrima is by the latest authorities applied to this Japanese shrub, which is, however, very much better known and far more generally met with under the name of R. ovata. It is a slow-growing shrub that forms a sturdy rounded bush, clothed with very dark green, broadly ovate leaves, each from 2 inches to 3 inches long, and of a leathery texture. The flowers, which are borne in erect terminal panicles, are five-pointed, star-shaped, pure white in colour, and pleasantly scented. It is not particularly hardy, for though it will pass many winters without injury, yet an extra severe one will often cut back some of the tenderest shoots. This Raphiolepis needs a fairly sheltered spot, for it is not sufficiently vigorous to hold its own with numerous strong-growing shrubs. Though now pretty well known, it cannot be called a common shrub; indeed, it is hardly likely to be grown to any great extent. Still, as a flowering evergreen it is well worthy of this note, which was suggested by a specimen in full bloom in Battersea Park. The Indian Hawthorn (R. salicifolia) requires the protection of a greenhouse, and a desirable feature in connection with it is that the flowers are produced during the winter months. This is an evergreen shrub with slender branches, clothed with glossy lanceolate leaves and short terminal panicles of blossoms. The individual blooms are white, with a reddish centre. Though winter is spoken of as the flowering season of this species, it is by no means limited to that particular period, for blossoms are at times borne from the commencement of the new year till summer is well advanced. These shrubs are not difficult to strike from cuttings of the half-ripened shoots during the summer months, but they often stand a good while before roots are produced. The name as above spelt is generally used, but in the "Dictionary of Gardening" the spelling "Rhaphiolepis" is said to be the correct one.—H.

Hedysarum multijugum.—Among leguminous plants during the month of June this Hedysarum is particularly noticeable; firstly, from the fact that its bright rosy-purple blossoms are borne in great profusion, and, secondly, it is in colour very distinct from nearly all its associates, whose flowers are in most cases yellow. It is only within the last two or three years that this Hedysarum has been known to any extent, at least in this country, though it has been grown for a longer period on the Continent. This shrub is a native of the Mongolian region, and was, I believe, introduced through the Russian botanists. Its slender branches are disposed in a somewhat loose, spreading manner, while the small pinnate leaves are of a greyish tinge from the profusion of silky hairs with which they are clothed. The blossoms are freely borne in racemes 9 inches or 10 inches long, and for two or three weeks they yield a good display. Owing to the loose style of growth of this Hedysarum, it is well suited for planting on the sunny portion of rockwork, or a group of it may be formed in a warm, open spot, when for a time it will be a mass of bloom. Like many of its allies, the roots descend deeply, so that it is more indifferent to a dry spot than many shrubs. Under favourable conditions it will ripen seed, and can be readily increased in this way.—T.

The Feathery Spiræa (S. ariæfolia).

Variegated Dogwood (Cornus sibirica Spathi).—The common Siberian Dogwood is well known and almost universally appreciated for its brilliant autumn colour, the foliage turning before it falls to a bright crimson, this tint being afterwards taken on and continued right through the winter by the leafless stems. The variety mentioned above has the additional advantage of variegated foliage, at this season very attractive. The principal colour is yellow, this occurring all round the edge, the centre being of the same bright green as in the typical sibirica, and like it, turning to red in autumn. Its ample leafage makes even small specimens show up well, and it is a plant that always attracts attention. A little cutting into shape is necessary for young plants, otherwise they are apt to run to long shoots that get bare of foliage beneath, but when a nice bushy habit has been formed no further cutting or pruning is necessary beyond stopping an extra strong or misplaced shoot. This semi-climbing habit is often made use of by training the plants to trellises or verandahs and similar positions, and a fine plant it is for the purpose, always looking neat without the need of clipping, and thus curtailing its beauty. It does not seem fastidious as to soil or position, and is apparently quite as hardy as the ordinary form, though late spring frosts, accompanied by cutting winds, will sometimes damage the young foliage.

The Spanish Broom (Spartium junceum).—Despite the number of different shrubs that have been introduced, this still occupies a very prominent place among hardy subjects whose period of blooming does not commence till the bulk of spring and early summer-flowering shrubs are past. Not only is it very useful when the bright green twigs are studded with the comparatively large golden-coloured blossoms, but it remains in this condition a considerable time, as a succession is maintained for weeks. The Spanish Broom is apt to run up rather tall and thin; hence it is not as an isolated specimen that it is seen at its best, but rather when associated with other shrubs which serve to take off its naked appearance. In this way grand flowering examples are frequently to be met with. The Spanish Broom is easily raised from seed and can be obtained at a cheap rate from nurseries, but large plants do not transplant well, for the roots are few and descend deeply into the ground; hence for planting, young plants are to be preferred. In dry, hot, stony soils it succeeds better than most flowering shrubs, but grows best in a good deep, but open loam.—T.

Aubrietia Fire King.—This is a seedling from A. Leichtlini, having similar habit and size of flowers, but these are much richer in colour; indeed, the most fiery of all the Aubrietias I have seen. In big clumps it must be wonderfully effective; the colour is really a rich red-maroon. We need now a good pink or carmine of the same habit, and free blooms.—D.

Rock Roses.—How lovely are these just now! Such a brilliant variety as Helianthemum coccineum makes a glorious mass of colour. A few good sorts make any rock-work wonderfully attractive. I saw H. vulgaris, pretty yellow flowers blooming most profusely on chalk banks by the roadside on one of the lofty Surrey downs near Dorking, but the garden varieties seem to thrive luxuriantly in any ordinary soil.—D.

THE GLORY PEA OF NEW ZEALAND (CLIANTHUS PUNICEUS).

This handsome climber, sometimes called the Lobster-claw-plant or the Glory Pea of New Zealand, should be much more often seen than it is. A cold greenhouse—*i.e.*, one from which frost only in severe weather is excluded—suits it well, or a glass porch, for it is fairly hardy, only objecting to snow, which usually kills it, although it will bear many degrees of dry frost. The plant here figured grows in the open in South Devon, and was photographed last April, being then in full bloom. The wall on which it extends is that of the conservatory (with hot-water pipes on the other side), and the plant was given the protection during the winter of a spare frame-light, slanted over it so as to keep it dry and free from snow. In this way, although the first buds were formed in October, they were preserved through the cold months, and with the first breath of spring they expanded and covered the wall with rich colours, the blossoms being of an intense carmine-scarlet, turning to crimson. The frame-light was removed about the middle of March, and the plant has never shown signs of distress from the cold or rain since. The situation, however, is a sheltered one, facing the south, and being on a terrace the soil is well drained. The plant, raised from a cutting under a bell-glass in May two years ago, was planted in good rich soil, and when the frame-glass was removed from it in March a mulch of good rich soil was laid over its roots. The result is strong, dark green healthy foliage, with no trace of red-spider (the bane of this plant when grown in a heated structure), an extraordinary mass of bloom, and a quantity of strong young shoots formed on every side, which will probably continue to produce blossoms throughout the summer. Like many another plant, the Clianthus is too often coddled in a hot-house; it is then almost impossible to keep it healthy and free from blight. A warm wall, with a slanting glass shelter from snow, suits it far better apparently, and this form of culture in the open air is worth trying wherever the situation is fairly mild and sheltered. I. L. R.

The Glory Pea of New Zealand in the open air. From a photograph by Miss Mitchell, Lustleigh, South Devon.

Lathyrus latifolius albus.—Few border subjects can surpass the best forms of this old-fashioned perennial Pea, whether from a decorative point of view or for cutting. The true plant has blossoms that are both pure and very substantial, the flowers being produced in large sprays that are most useful for vase decoration. Both this and the rose-coloured form are specially adapted for trailing or training to trellises and similar places. We are reminded of a large railway embankment that each year is aglow with the flowers of the rose-coloured variety. In this place it rambles at will and flowers with the greatest profusion for a considerable time.

Pyrethrum Jubilee.—This is one of the best of the single-flowered varieties, and deserves a place in every garden. The colour is a bright shade of crimson with a yellow disc, the two colours contrasting splendidly, and either for use as a cut flower on the table during the day, or under artificial light, the colouring is strikingly vivid and effective. The form is exquisite, and as the flowers are developed on long and stiff stems they are easily arranged in vases. At the present time clumps of this variety are amongst the brightest features of the hardy flower border.—D. B. C.

NOTES FROM AN ARMAGH GARDEN.

Globe-flowers are now almost over, but as they are a very prominent and interesting feature here, I take this opportunity of mentioning that on 30th September, 1895, I sowed seed of Orange Globe, and in the early weeks of May 1897, a number of very neat little plants were in bloom. The flowers were very diverse, both in size and shade. One was very large and globular, colour very deep orange-yellow. Another not so large, was a very intense shade, and the remainder which flowered were of various shades of yellow, and many of good globular form; some have not yet bloomed.

Meconopsis aculeata is a very beautiful plant now in bloom in a rather shaded nook. A very large clump of Adonis vernalis shelters it from the sun on the south side, and a broad flat stone keeps off the direct sunshine from the west. There is something very lovely in the tint of this exquisite Poppywort in the soft silk-like blue of the petals and the rich golden circlet of anthers. Should it prove of easy cultivation I think it will rapidly come into favour.

Lithospermum prostratum is just now very attractive. It is a charming rock plant where soil is suitable. L. Gastoni, of which I was fortunate in securing a few plants, I have very little experience of—only one plant has bloomed. L. hirtum seems a neat little plant with deep golden-yellow flowers. L. latifolium is taller, has pretty blue flowers, and seems to grow freely in various positions with scarcely any attention.

Campanula abietina I have grown for many years, but never have I had it flowering so freely as this summer. It is a grand rock plant, clothing the surface with a dense mat of pretty green foliage, above which, on stems of varying length, the spreading bell-flowers are produced. They are handsome flowers of uncommon shade and graceful form. Myosotis lithospermifolia, in a shady end of a rock garden, was very pretty a few weeks ago, as also Myosotis rupicola, a still dwarfer species, and of deeper blue. They are very neat little Forget-me-nots, and worthy of a choice nook in a shady corner of the rockery.

Omphalodes Luciliæ is another blue flower of rather uncommon shade, now in bloom. It was planted many years ago in a rock garden, which can be protected in severe weather. Many self-sown seedlings have sprung up here and there, and I have raised many plants from seed gathered and sown when ripe. This is a plant which continues to produce flowers during many months.

Typha minima, in a very small artificial pool in a rock garden, is displaying some of its graceful little cat's tails. Among alpine Pinks are a number of seedlings raised from a variety which I received as

Dianthus Fischeri.—Of the correctness of the name I am doubtful, but of the beauty of the plant there was no doubt; the flowers were very large on very short stems. The seedlings vary considerably in colour, from pale pink to a very deep shade, and in height from a little over an inch to about 4 inches. One plant, or group of plants close together, measures about 12 inches by 10 inches, and a few days ago I counted about 60 expanded blooms on it.

Dianthus callizonus is just coming into bloom, and from seed saved last year I have raised half-a-dozen good strong plants. In the same rockery are D. glacialis, D. neglectus, D. Michael Foster, and D. Atkinsoni, but not yet in bloom.

J. McWalters.

Iris.—Now is a glorious time for the Iris. Many kinds are so hardy in Britain, and many of them as good as any Orchid, and we think more graceful in foliage. Their beauty is so well known that few people who care for hardy flowers fail to grow them, but we may have a thing in abundance and yet not make the best use of it—a very common case with those who care for hardy flowers. About this time last year we began to think of the good effect of putting our Irises together, and threw all the hardy stout kinds we could find into borders beside a Grass walk, with a background of tall Roses on a trellis made of Bamboo stakes. We did not expect much so soon, many kinds not being planted more than nine months; but the result is already very beautiful. At the present moment the variety of colour is singularly charming, ranging through pale blues, lavenders, purples, fine yellows, dark rich brown-purples, and delicate whites. The kinds we refer to are mostly Germanica and allied species. Of course one can easily associate with these the brilliant Spanish Irises and so-called English Irises, which, however, like wet and moist soil. The kinds that do

best are the various species grouped round the German Irises, which are perfectly hardy perennials, and want no care for some years at least after planting. The foliage alone of the very fine ones is worth having, especially tall kinds like the Golden Iris (aurea). In our climate, in many districts, some Irises that naturally inhabit the water-side in certain parts of America, where there is a much hotter sun than in our own country, thrive perfectly in our moist climate in borders, such as the Golden Iris, Monnier's Iris, the tall I. ochroleuca, and the beautiful I. orientalis.

THE KITCHEN GARDEN.

Asparagus and frost.—That the white frosts experienced last month did great harm to young Asparagus-tops generally there can be no doubt. Just recently I saw in one of the warm gardens in Surrey evidence of the injury done to the tops in the beds, as these were bent and withered. This is not, however, an unusual occurrence; indeed, it is evident that if the Asparagus-plant is naturally hardy the points of the succulent shoots are not so; and it really is worthy of consideration whether, when in May the growths are pushing through and sharp frosts at night prevail, it would not pay to lay mats over the beds at night to save the shoots from harm. Litter would have to be raked off, and that could hardly be done without doing much harm to the shoots. A few mats might be put on and removed daily with little trouble.—D.

Spinach.—Because sowings of this vegetable are of so fugitive a kind, it is not popular in the summer as it should be. If these sowings, which should be made once a month or so in shallow drills, drawn at 15 inches apart, were much more thinly made, the plants, indeed, being set out to from 4 inches to 6 inches apart, they would be less likely to bolt to flower so early and give far finer leafage. A well-known writer on gardening in a weekly paper said, in advising sowings now, "The round-seeded form is the proper one." Evidently he does not know that there are round and prickly-seeded forms of all varieties, they differing only in the seed. Those who want fine Spinach should forsake the old Flanders variety and sow either the Victoria or the Long-stander, both of which can be had in round or prickly seed. These are, if true, the finest Spinaches in cultivation, stand well, and produce giant leafage.—A.

Rhubarb.—It is so much the practice in small gardens to leave Rhubarb-roots to become huge clusters of crowns, and also to exhaust the soil about them unduly, that many who treat this useful vegetable in this way seldom have it at its best. Four years should be the utmost limit allowed to the roots; then in the early autumn, as soon as the leaves have died down, the roots should be carefully lifted and re-divided, that not more than two or three crowns be attached to each piece of root. Then replanted at good distance apart in deeply-worked and well-manured soil, the crowns start early, and if some light litter be placed about them will give that season moderate early pullings. The second and third years the plants may be covered up by tubs early, and the fourth year lifted, put into a dark place to blanch the stems, and later be divided as advised and replanted. Hawkes' Champagne is the best early one.—D.

Bats (*F. C. M.*).—Let the bats alone! They are very useful in thinning the numbers of various moths whose caterpillars are injurious to fruit-trees, etc.—W. M.

Unsatisfactory Strawberry and Onion (*H. A. Huntley*).—From the specimen of Strawberry sent we think the roots must have been eaten by some insect pest. Wireworms may not be numerous, but it looks as if they were the culprits. The pest named is more destructive in dry seasons and light soils than in wet ones, and it attacks the less vigorous varieties. Royal Sovereign is a stronger grower, and so far may have escaped. We fear wireworm is the cause, as you see the roots farthest from the Sovereign are the worst. The Onion sent appears to have suffered from drought and loss of roots, as the plants have bulbed too quickly. We think they may have been much exposed or in a dry soil, with not enough moisture. You see April was dry, and the plants suffered. You transplanted rather late, and doubtless checked new growth. We fail to detect disease.

FRUIT.

APPLE KENTISH CODLIN.

Varieties precocious in bearing and heavy croppers whenever the season permits are apt to wear out and in time become nearly or quite extinct. That is what has happened to the Kentish Codlin. Trees of this variety are rarely met with nowadays, and probably could not be bought anywhere. This is to be regretted, as it is deserving of a better fate. According to my experience with it (under the name of English Codlin), trees, after they have arrived at a size capable of producing from one to two bushels of fruit, make little or no further progress, but also seldom fail to produce excellent crops. Not content with fruiting on the old wood, the young short shoots of the previous summer's growth must also usually bear fruit, this rendering it a difficult matter to raise fresh vigorous trees by grafting. On the Paradise or dwarfing stocks this variety is a complete failure, and it is only on the Crab that it can be grown successfully. The fruit is yellow when ripe, without a tinge of red, ripe about September, not keeping beyond November, when the fruit gets greasy and soon spoils, well-flavoured, sub-acid, and good for cooking only.

Apple Kentish Codlin.

Kentish Codlin is also known as English Codlin, the two being synonymous, but it ought not to be confounded, as it has been, and still is, with Kentish Fillbasket. The latter is altogether a different Apple. I recollect fine old trees of the true Kentish Fillbasket growing in an old orchard in Kent, these being capable of producing 20 bushels or more of fruit in a season. In a young state such strong-growing varieties are not very productive, and that is why so few of them are planted now. As a consequence, the rising generation will not be able to direct attention to grand old trees of superior varieties, including Blenheim Pippin, Beauty of Kent, Winter Queening, and the like, and will compare the selfishness of the present generation of planters with the unselfishness of our forefathers. Why not distribute a few of the strong growers among the early productive trees, and when the latter wear out, as they inevitably do, the large trees will be at their best. D.

PLANTS FOR WINTER AND EARLY SPRING BLOOMING.

(In reply to "Amateur, Kilmarnock.")

We have had many queries relating to the small greenhouse so dear to amateurs, and which they wish to see gay throughout the whole year. Winter and very early spring are the most difficult periods with these houses. One can seldom keep up a sufficiently high temperature for warmth-loving subjects without serious risk of overheating. Fortunately, there are several plants that are easily grown, and our object in this note is to name the same, with a few hints upon when and how to procure or propagate.

First of all, there is the Zonal Pelargonium, one of the easiest and showiest of winter bloomers. Root cuttings at once, and grow on steadily and sturdily. You may also pot on a few young plants, growing these in the open air as far as possible, and keeping all flower-trusses picked off. Should any shoots make rank growth pinch out the tips. Late in September house the plants, water fairly freely for a few days, and pick them over to remove the leaves which are sure to fall upon so complete a change of quarters. Now leave all flower-trusses, and you will have a grand show throughout winter and early spring. The plants will appreciate liquid-manures, but do not need much water during dull weather. If a warm greenhouse is kept, Bouvardias grown on similar to the Zonals will be very useful. So, too, will Abutilons and such late-flowering Chrysanthemums as W. Lincoln, Miss Marcheaux, and Peter the Great. Salvias, rooted at once and grown on rapidly, pinching out tips to obtain bushy specimens, will also form good winter-blooming plants. Arum Lilies, Genista fragrans, Erica gracilis and hyemalis, Dielytra spectabilis, Deutzia gracilis, and Hotia japonica are also very reliable.

But our correspondent's main query is for plants which could be raised from seed now. These include Mignonette, Alonsoa, Cinerarias, Primulas, Forget-me-Not (cold-house), Eupatorium, Heliotrope, and Margaret Carnations. We can also make use of many bulbs, such as Ixias, Sparaxis, Lachenalias, Alliums, Tulips, Hyacinths, Narcissus, Tritonias, etc. Winter-flowering Begonias and Carnations should not be missed, nor the deep-coloured Epiphyllum truncatum. Almost any of the above named can readily be looked up in former numbers by use of our index, and readers will do well to search back and prepare for the coming winter.

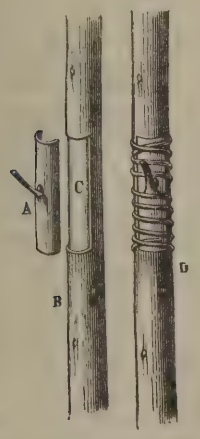
Gladiolus Lemoinei.—This flowers about this time, and quickly succeeds such kinds as G. insignis, Colvillei albus, and others of the hardier race of these beautiful and useful flowers. Indeed, in the large border of mixed things these should always be included, as there are many varieties that are quaint. Flowering early, too, is a strong point, favouring a freer use of them. If planted as permanent subjects it will be best to plant quite 6 inches deep at first, and with a good depth of soil below they soon form an attractive group.

ROPAGATION BY BUDDING OF ROSES, FRUIT, AND OTHER TREES.

'ow is the best possible time for this most nportant part of plant propagation. Almost ll hard-wooded plants which form a well-eveloped eye or bud at the axils of their leaves, ıay be increased by budding. It is a very imple operation, and depends a great deal upon ne or two details. The most important point s to hit the time when the bark from the stock, nd also from the piece of growth it is intended o propagate from, will lift easily and without he least force. To accomplish this end, the ap of both plants must be in full work. As a ule, the stock is ready before the bud. It is ot absolutely necessary to use a young bud of the current season's formation, but we prefer these to any of the previous year.

Roses.—There are many stocks upon which we can work the Rose: Polyantha, De la Grifferaie, Manetti, Brier, in both dwarf and standard form, or upon a branch of some inferior variety. In all cases the operation is the same, it being merely a matter of where to insert the bud. All dwarf stocks need budding as closely as possible upon the crown of their roots, and for this reason we always plant such as shallow as possible, drawing some of the surrounding soil up to the stem, both as a support and to secure a moist and more easily-lifted bark when budding. Previous to budding the soil is removed, care being taken not to injure the bark of the stock in any way. Here it may be well to mention that no mutilation of the stock should take place a day or so previous to inserting the bud. If so, you will find it difficult to lift the bark smoothly, owing to the slight loss of sap and check to a free flow. It is really astonishing how quickly, and to what an extent, this acts. Standard Brier-stocks are limited to two or three shoulders, or branches, at the height most nearly approaching that we wish the stem of the future Rose-tree to be. Far more depends upon a due preparation of the stock than would seem probable to any but observant growers. From the first all tendency to suckers should be checked, and the stocks kept clean and healthy without any encouragement towards coarse growth. We do not want a strong flush of sap that will practically "drown" the Rose-bud, while at the same time it is necessary to have a flow if a good union is to be secured. It is also much better when the shoot from which the Rose-bud is taken can be almost as large as the stock it is to be worked upon.

Selection of buds.—This is most important. Choose buds from a shoot that is a little more than half-ripened. As a rule, the eyes below a shoot that has carried a flower are in good condition for the operation; but if you are propagating a climber, and wish to secure the most vigorous growth of the same variety, then select



Another way of budding (Fig. 3).

your eye or bud from a vigorous, climbing shoot. Never bud from a weakly plant or shoot; the more healthy and floriferous your parent plant is the better are the resulting Rose-trees likely to be. The reason why so many really good new Roses are condemned as indifferent growers is because every available eye or bud is propagated. Several weak plants result, and when these are again propagated from, we very naturally get an inferior plant as regards vigour and habit of growth. It generally takes several seasons to get a good and much sought after Rose into its true constitution, this seldom occurring until so plentiful that a selection of the most healthy buds can be made. While our Rose-bud should be from wood of the current season's growth, it must not be young and soft, nor must it be too far advanced towards second growth. If making a new break of a ¼ inch, the

Rose budded upon French plan (Fig. 1).

seat of the bud is usually too firmly fixed to the wood to allow of that clean and complete removal so necessary to a successful transference of the bud to any foster stock. If you will lift a few buds in varying growth, not necessarily from any expensive or particularly desirable variety—a shoot of wild Brier will do—you will soon discover what we mean. A bud not sufficiently forward will not show the seat or root prominently, as in Fig. 2. In the case of a Rose the seat is not so long as shown in the cut of a fruit-tree-bud. Again, if too forward in growth the seat will be torn out completely, and an examination of those in various stages will demonstrate how very necessary it is to have them in such a condition that the seat or root may rest plain upon the young wood, exposed by raising the bark from a stock or branch upon an inferior Rose-bush.

Removing the bud.—Cut off the Rose-leaf to within half-an-inch or so of the eye at the axil of the leaf. Now insert a sharp knife about an inch above the bud and gradually increase the depth while you are scooping the bud out. Do not bring the knife quite out again after the bud is passed, but tear off a small strip of the bark below. This will greatly facilitate the removal of the small portion of Rose-wood still covering the seat of your bud or eye. Turn back the bark at the bottom, take the piece of wood between finger and thumb, and gently but smartly remove it by a slight snatch or jerk downwards. If your bud was in the proper condition you will plainly see the root of the eye. Now cut off the loose piece of Rose bark about half-an-inch below the bud, when it will be ready for insertion.

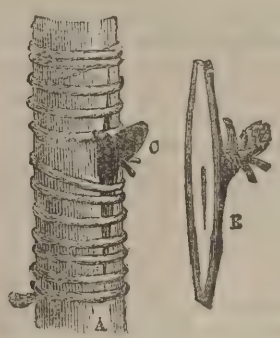
Inserting the bud.—Having broken off the prickles, make a cut with the point of your knife only just penetrating the bark of the stock or branch, and about 2 inches long. A slight transverse cut at the upper end of this will aid you in lifting the bark with the bone handle specially attached to budding knives, or a thinly shaven piece of hard wood may be used. Lift gently, and with due care not to injure the glutinous sap or young wood beneath, raising both sides of bark uniformly the whole length of the cut, and then slip in the prepared bud from the upper end, beneath the square edges formed by the small transverse cut. Gently slide the bud down to the lower part of the cut. As before mentioned, always get the bud as nearly as possible to the crown of a dwarf stock, and as near to the main stem of a standard Brier. A young shoot of Brier, to be used as standard, may be budded in the main stem as shown in Fig. 1, in which instance, the French plan of placing two buds upon opposite sides has been adopted. It only remains to tie in the bud securely, being particularly careful to have a firm but not too constricting tie close to the eye, in order that the seat or root may be certain to rest upon the wood below the raised back of the stock.

The same operation may be followed where an old or inferior Rose is growing freely, and, in many cases, is not only easier, but saves the trouble of lifting, as well as utilising the roots already established. When the bud is set securely, release the tie, or the natural swelling and growth of wood will often overgrow and kill the bud. Next spring when pruning cut back to within an inch or so of the Rose-bud, and confine the whole of future growth to this, when you will often get good results the same summer, and a certain show for the one following. Fig. 3 illustrates another method sometimes followed with both Roses and fruit-trees, but we much prefer that already described more fully. The sole difference lies in the method of removing the bud.

Fruit-trees.—This is practically the same as with Roses, and all of the above remarks apply. In the case of fruit-trees, and such shrubs or foliage trees as the Acer, Scarlet Horse Chestnut, Thorns, Prunus, and many others, the sole difference is to work in the main stem as far as possible, and place the bud at the height you wish the head of the future tree to be. If a bush or dwarf work low, as in the case of a dwarf Rose.

From the end of June until the end of August are suitable dates for budding of all kinds in the open; but it may be done at any time under glass, provided bud and stock are in the right condition.

Lonicera sempervirens minor.—This excellent climber is too seldom seen in the cool greenhouse, a place eminently suited to its well-being as also its free-flowering. Though quite hardy in positions not too much exposed,



Cherry budding (Fig. 2).

it should be more frequently seen in the greenhouse. Under cultivation of this kind the plant seldom fails to satisfy, but the plants in the open are in many instances this year a failure, through the blight which has been so prevalent.

A White Lælia purpurata (*Birdsall, Welton*).—The variety of Lælia purpurata alba sent is a very fine one; it is certainly one of the best we have seen. Without seeing the plant we cannot possibly give you an estimate of its value.

ROSES FOR TABLE DECORATION.

The present month and the early part of July should give all kinds of Roses for decoration. There are few gardens which cannot boast of a few trees, and to those who are fond of a pretty display on the dinner-table the use of this subject during the height of the flowering season should be appreciated as a welcome change from the many other interesting subjects of the flower garden. Each type of the Rose has its own peculiar charm and beauty, and in the hands of those with the smallest amount of artistic taste the appearance of the dinner-table may be made pleasing.

Hybrid Perpetual Roses are certainly better arranged by themselves, the richness and variety of their colouring generally making a most effective arrangement for artificial light. The crimson and brilliant scarlet shades are seen to great advantage during the evening under the gaslight, and if these be associated with the foliage of the Rose nothing in the way of foliage for the further embellishment of the flower is needed. Where the supply of blossoms is of a limited quantity, and those of a varied colouring have to be used, do not mix them up together without regard to a proper blending of the colours. A much better system with decorators so circumstanced is to divide the colours up, keeping those that pleasingly associate together, arranging the small tubes, vases, and bowls with those of similar shades together, and then distributing these all over the table to get decorative effect. The tints of colour peculiar to the Teas and Noisette Roses embrace some of the loveliest that it is possible to conceive, and these look well at all times. For day use as well as for an evening display they should be largely used, the richly tanned foliage of these Roses considerably enhancing the beauty of such arrangements. The useful garden Roses, too, give the table decorator many charming flowers for the purpose under notice, the free manner in which they are produced rendering their effective arrangement a very simple task.

The Teas, Noisettes, and garden Roses if grown without severe disbudding may be cut in sprays, these larger pieces being eminently suited for the larger vessels on the table, and when cut in this way they are simply arranged.

An important rule to observe is never to crowd the flowers into the various receptacles, but to let each flower give an account of itself. One or two small buds, with foliage overhanging, is a dainty little arrangement for small tubes, etc. Specimen flowers also look extremely well if arranged singly in these. The National Rose Society has at last realised the decorative value of the Rose, and it is pleasing to record that competitions are provided for at their next exhibition.

D. B. Crane.

Roses in vases on the table.

CHRYSANTHEMUMS.

When to repot Chrysanthemums (*Anxious*).—This is a matter which is giving concern to many growers just now, and when to give the necessary shift into pots of larger dimensions is best determined in the following way: Plants need to be repotted when they have filled with roots the pots in which they are at present growing, and one of the first indications of the pots being full of roots is the ready manner in which the soil becomes dry. The usual rule is to turn the plant out of the pot, when the progress the roots have made is quickly discernible. If they are seen to have worked all round the ball of earth they should then receive a shift into pots of the next convenient size. It is a great mistake to put off this operation, as the plant begins to deteriorate from the time the good constituents of the soil are used up. You would, therefore, be well advised to go over your plants at once, standing aside those which are ready, and commencing with these first. The remaining plants will, in the meantime, be making progress, so that in a short time all your collection will be seen to. No given date can be fixed for any one operation of this kind, everything being determined by the condition of individual plants. You do not say whether your plants are in 5-inch or 6-inch pots, or even those of a smaller size, but if you are expecting to obtain first-class flowers late in the autumn your plants should be almost if not quite ready for their final potting. Should your aim be the production of useful decorative plants, either for cutting or for the embellishment of your glasshouse, 8-inch pots will be found best suited to those now in 5-inch pots, while those now in 6 inch pots should be repotted into those 9 inches in diameter. We hope this is quite clear to you, as it is an error many amateur gardeners fall into in repotting their plants before they are ready for the operation.

Staking early-flowering Chrysanthemums in the open (*T. G. H.*).—Certainly, stake your plants which are in the open. The boisterous winds of late have been very trying to those plants which were put out into their permanent quarters a fortnight since. Now that they are established in their final quarters, and giving evidence of going ahead, do not delay the staking of them a day longer than you can help. Bamboo canes are the best, being both neat and very durable. They can be purchased about 3 feet 6 inches in length, and when firmly stuck in the garden soil they are as near as possible about the height best suited to the majority of the early-flowering sorts. The best of these plants run about 2½ feet to 3 feet in height, and one stake placed a few inches away from the main stem at the base will be found quite sufficient to secure the large number of branching shoots distinctive of these hardy garden sorts. Never tie the growths too tightly, but allow just sufficient room for the shoots to give a little with the wind pressure.

Chrysanthemum-leaves shrivelling (*C. T.*).—It is difficult to determine the cause of your Chrysanthemum-leaves shrivelling, as they were in such a bad condition when received by us. We are inclined to believe, however, that the leaves of the plant of Mme. Carnot have been attacked by a very small caterpillar. These often infest the foliage of plants, and appear in myriads on the underside of the leaves. We would advise you to inspect this particular plant very carefully, when we expect you will find other leaves in course of destruction. A good remedy is to lay the plant on its side and syringe the underside of the foliage with soapsuds, or dust the affected parts with Tobacco-powder. This pest is frequently seen on plants which are grown in a confined area. To keep the plants in a healthy condition a good, open position for standing, and plenty of room for each one, is by far the best rule to observe.

The summer position for the plants (*W. S.*)—Now that the plants are getting established in their final pots you certainly should see they are stood in that part of the garden in which they may get plenty of air and sun. Many growers, especially those with small gardens, attempt too much. Being a small grower with comparatively little time, you are wise to confine your selection to fifty plants. Even a small garden may turn out a batch of plants of this number, and with examples showing high cultural skill. Select a position, if possible, with rows running north to south. Such a position may be found in many gardens, especially so in suburban districts. The small lawn, which is usually surrounded by neat gravel paths, is a capital place to stand the plants, and the overlooking of them all through the growing season is thus made easy. The pots should be stood on boards, tiles, slates, or anything that will prevent the ingress of worms,

as this must be prevented if the plants are to be kept growing satisfactorily. However, first erect at the ends of each row stout posts, with a strong stake to keep them in position. Stretch between the posts two rows of galvanised wire, one about 2½ feet above the ground-level, and the other about 2 feet above the first line. With some of the taller growing sorts it may be necessary to fix another line still higher than the last one, as this becomes so valuable during the strong winds often experienced during August and September. Stand the pots perfectly level, or when watering your plants much will be lost, and one side of the ball of earth will often be quite dry. If the plants have not yet been staked carefully sharpen the ends of either Bamboo or Hazel stakes before inserting them into the soil. After tying the main stem of the plant to the stake, tie the latter very securely with strong pieces of raffia, or better still, tarred twine. This must be securely done, or the constant strain will cause the stakes to shift, and the roots to suffer incalculable harm. If you have not got such a position select some other, but there should be quite 5 feet between the rows, and also leave a space between each pot in the row of 15 inches. This will enable you to tie your shoots out nicely, and ensure the wood becoming ripened properly. When arranging the plants in position it is a great advantage to place them according to their respective heights. Either commence with the shortest or the tallest plants, and work down to the end of each row. They are so much easier to manage in this way, and look so much better, besides other advantages. —D. B. C.

Stopping early-flowering Chrysanthemums *(Doubter).*—You ask, "Shall I top the outdoor Chrysanthemums now?" The character of the early-flowering sorts is to make a natural break early in the season and to continue doing so at each successive few inches of growth. It is because of this good feature that they are so essentially suited for hardy border culture. In such a position in the garden good plants soon attain to large dimensions and provide a display in the open, keeping the border quite gay during the usually dull period of mid and late autumn. Probably your plants were acquired late in the spring, and were sent by the specialist without pots, and with very little soil adhering to the roots. Although they may now be established in the open border, they must of necessity be later than plants accorded careful treatment during the early part of the year, and, consequently, to make up for the time lost by these circumstances it certainly would be wise to stop the plants. Just pinch out the point of the shoots, and this will induce new shoots to break away from the base of each leaf. In a very short time these will make a few inches of growth, and if your sorts are those which have often been recommended in these columns they may be left to "break" naturally afterwards. If plants can now be obtained in 3-inch pots from any of the specialists, these may be put out in the open with the prospect of a successful future.

Treatment of specimen Chrysanthemums *(J. B.).*—Your plants should have been finally potted before this, the middle to the end of May being generally considered the best time for the final shift. The composition of the soil for this important potting requires careful attention, the following component parts being the best: Loam (this should be fibrous and broken up into pieces about the size of Walnuts) two parts, leaf-mould and horse-manure (the latter prepared as for a Mushroom-bed) each one part, a 3-inch potful each of bone-meal and some fertiliser to 1 bushel of the compost. To this add a sprinkling of old lime-rubble and burnt ashes, adding sufficient coarse sand to keep the soil porous. Be quite sure that all the ingredients are thoroughly mixed so that an equal distribution of each of them may be properly done. Pots quite 10 inches or 11 inches across will be necessary if your plants are of large size, or, at least, promise to be. A specimen plant must on no account be starved by confining the roots in a pot of a smaller size than the measurement just given. Take great pains with the crocking, placing each piece of crock in regular and even order, and finishing off with a handful of small pieces. If good and clean ½-inch bones can be procured a layer of these will be very beneficial to the plants when once the roots reach them. Cover the crocks or bones with a nice piece of decayed fibrous loam, first knocking out any loose soil there may be before fixing them in position. If this be not done the small soil will very soon block the drainage, and upset one's plans for a whole season. Pot firmly, ramming the soil down with a wedge-shaped piece of wood, but avoiding at the time any bruising of the roots, both on the top of the ball of earth and on the side of it. Those who have the convenience of a large frame should keep the plants there in a close condition for a day or two to recover from the check, and to give them a fresh start into growth. After this they may be stood out again in the open, and receive a thorough soaking with clean water. Staking should be seen to as early as possible, so that a neat shape may be made of the different plants. This is also necessary to keep the shoots from breaking. The last stopping should be done during the third or fourth week in June, when the shoots must be allowed to go on unrestricted to the terminal bud in almost every instance. Look carefully after the watering, and when the pots are full of roots commence feeding. Soot-water should be first used, following this at intervals with manures of a different kind. On hot days a good syringing in the evening will be highly beneficial to the plants, and assist to keep the foliage fresh and clean. If during the autumn the weather be very wet, a sprinkling over the soil of some approved fertiliser should be given. We have good reason to believe you will be successful if you pay attention to the details given in this reply.

Carnation Raby Castle.—Among good and free-flowering border kinds this is perhaps one of the most useful and pleasing. It is of such a free growth, so very hardy and enduring, that no wonder it is among the most popular kinds that are grown. It is not a show flower, because of its cut edge, though it is really of greater value than dozens of the more formal kinds by reason of the pleasing rose-pink shade of colour and its freedom of blooming. Some large unlayered clumps are producing wondrous masses of flowers, the latter fully equal to those of last year's layers.

SOLANUM JASMINOIDES.

Though hardy in a few of the more favoured districts of this country, this Solanum does best in the greenhouse. One thing in its favour is that when grown as a roof or rafter plant, the foliage not being dense, the light is in no way obstructed, a desirable feature in a climbing plant. Planted out in a bed of good rich loam and given plenty of head room, it may be had in flower for six months at a time, and by pinching it can be had in flower at Christmas, when its pure white flowers will be found valuable for cutting, being light and elegant in appearance. Under glass, especially when shaded, the flowers are pure white, but outdoors they are often tinged with bluish-mauve. It is very subject to the attacks of green-fly—at least, when grown under glass, for although usually so grown, it is hardy in mild localities, flourishing out-of-doors against a south wall and flowering freely.

Solanum jasminoides.

The Paddington Pink.—This is an old and very sweet-scented variety of a reddish-pink colour, with the usual dark blotch at the bases of the petals. It is a delightful garden variety, and once was largely grown, as also was the old Anne Boleyn variety, rather deeper red in colour. The flowers are of nice size, do not burst their pods, and are most profusely borne. —D.

Linaria pallida.—I saw this little creeping Toad Flax growing into a big carpet at Great Bookham the other day. The flowers are of a pale blue colour, and dotted freely all over the green leaf carpet. The plant is a capital thing for rock-work, but should be kept well in bounds. It can be increased by division with rapidity.—D.

GARDEN WORK.*

Conservatory.

Climbers and basket-plants will now be a special feature in lofty houses. Passion-flowers in variety, Tacsonias, Mandevilla suaveolens, Solanum jasminoides, Plumbago capensis, Heliotropes, Fuchsias, Noisette Roses, and Ivy "Geraniums" are all useful for clothing naked places, pillars, walls, etc. Ivy "Geraniums" are charming things for baskets, and the new yellow Nasturtium Coolgardie is a nice thing for basket work or associated with Fireball. For large baskets Lophospermum scandens raised from cuttings is very effective for cool, light houses. Fuchsia procumbens is a pretty little plant for covering the sides of the basket, some of this plant occupying the centre. Baskets of Achimenes, when well filled, require no other plant to make good deficiencies, as the young plants may be inserted all over the sides and bottom of the basket. Epiphyllums flower well in a warm conservatory in winter, and after the growth is finished they may be moved to a cool-house in summer to ripen. I have had them outside for a month in the hottest part of the summer, and they flourished all the better for the exposure. Must be housed before the autumn rains set in. Hardwooded plants which made their growth early may be placed outside in a partially shaded spot on a bed of coal-ashes. Roses in pots which have done flowering should be plunged outside. Other hardy plants which have been forced—and the list of hardy plants suitable for forcing is a long one—will now have completed their growth, and will be better outside plunged in ashes or in a reserve bed kept for such work. The earliest sown Cyclamen will soon be ready for 5-inch pots, but it is best to let the pots get pretty well filled with roots before giving them larger pots. They will do all the better for it. All of these, including Primulas and Cinerarias, will do better now in cold-frames on a deep bed of ashes. They do best shaded from the midday sun. If there is no shady spot available turn the frames round to the north, and sprinkle a little lime-wash over the light just to break the rays of the sun. The exhibitor must have a north-house to keep things back. I have had Heaths and other plants under north wall and covered with spare lights for several weeks in good condition.

Stove.

Continue to take cuttings of Poinsettias until a sufficient stock has been secured. The early-struck plants may be shifted into 5-inch pots, and as soon as the roots work into the new soil the plants may be moved to a close frame. No artificial heat will be required now, unless the weather be unusually cold for young stuff, as by keeping the frame or pit close a sufficiently high temperature can be maintained for healthy growth, and it is robust, hardy growth that is required. Train the summer-flowering creepers to prevent the shoots grasping each other. If the growth of Allamandas gets entwined together with other things it will be difficult to put things right. Gesnera cinnabarina and its varieties are charming things in winter, and the scaly tubers should be shaken out and started now in pans of peat, sand, and leaf-mould in a warm, close pit. Strike leaf cuttings of Saintpaulias and variegated Begonias. These are coming into favour again. A stock can easily be worked up from the foliage by laying them on pans of sandy peat, cutting the mid rib of the leaves in several places, and pressing the leaves down to the soil, and weighting them with small stones or in some other way.

Early Vinery.

The Grapes will now be ripe if forced fairly early, and if required to hang long it may be necessary to shade a little to keep the house cool; but a good deal will depend upon the position of the house. It may also be necessary to cover the ventilators with canvas to keep out birds, flies, bees, and other depredators. A covering of long litter over the border will keep down dust. If a broom or rake is used in the house with the pretence of cleaning up, dust will be raised that will settle on the Grapes and spoil their appearance. Air will be left on night and day now. Sub-laterals, if not too numerous, and the Vines are carrying a heavy crop, may be left to themselves a bit. As a rule, Vines carrying a heavy load of ripe fruit have ceased to make wood before the Grapes are fully ripe beyond a stray shoot or two. It will be bad if much late growth is made, as it will encourage late rooting, which is better avoided.

Cucumbers without Ventilation.

Abundance of moisture will be required, and a thin shade during the hottest part of the day. The thermometer will during a hot day rise to 100 degs or higher; but when this figure is reached, more moisture, either through the hose or on the floor, is needed, and this moisture softens the heat and fills the house full of vapour, and the growth under such conditions is very rapid. Plant Cucumbers and Tomatoes in spare houses and pots. They will come in useful.

Window Gardening.

The plants most commonly met with at country shows are Begonias, Zonal "Geraniums," Musk, Fuchsias, and Balsams. Occasionally a Cactus is produced, and a well-flowered Cactus carries weight. Ferns, also, are usually grown, and are better done than flowering plants. These may be repotted now, if necessary.

Outdoor Garden.

Now that the beds are all planted, more attention can be given to the routine work. Heliotropes, when planted in masses, should be pegged down close to the ground to get the ground covered speedily, and then when the shoot assumes an erect position there is a level mass of flowering shoots. It is generally necessary to peg down a second time to obtain a perfectly even mass. Verbenas, Ageratums, Petunias, and other plants of loose, straggling habit should be treated in the same way. The autumn-sown annuals have been very bright, but will soon be past their best. When cleared off their places may be taken by Asters, Stocks, Salpiglossis, and Phlox Drummondi. The Salpiglossis makes a charming patch in the border; there is much variety of colour, and the flowers are pretty. Carnations are now showing flower-buds. These are sometimes thinned to obtain fine blooms, but whether thinned or not Carnations are always beautiful. Mulch Gladioli and stake the spikes to keep them in an erect position. Any plant which requires support should have stakes placed thereto in good time. Dahlias and Hollyhocks should be tied as often as is necessary. Where Dahlias are grown for exhibition, in addition to the central stake four others will be required, and should be at equal distances apart, and the same from centre stake to support side shoots. To obtain fine blooms of Dahlias the buds must be freely thinned. There is yet time to sow Pansies. Prick off Hollyhocks and other seedling hardy plants.

Fruit Garden.

When the Peaches are gathered in the early house give the trees a thorough wash with the hose or engine, and give free ventilation; see also that the roots, especially if the borders are inside, are in a thoroughly moist condition. The trees in second house are now ripening their fruit. Hale's Early, Early York, Royal George, and Dymond will come on in succession now without much forcing. Lord Napier and Humboldt Nectarines will ripen about the same time under like conditions. It is important to fully expose the fruit to give colour, even, if necessary, thinning a leaf or two for that purpose. In the orchard-house trees in pots must be well nourished, and if they were crowded when first taken into the house some of the late Plum-trees may be plunged outside to give room in the house. Cherries in pots, from which the fruit has been gathered, may be taken outside. Peaches on walls must be freed from insects either by washing or by using dry powder. It has been said that Tobacco-powder injures the tender foliage. Possibly it may if used in excess, but there is no advantage in excessive application. Used in time the slightest puff is sufficient to destroy either green or black-fly.

Vegetable Garden.

The vegetable gardener must study the soil to find the treatment most suitable Heavy land will grow fine crops, but it wants a good deal of working, and the times must be rightly chosen, as nothing can be done unless the surface is wet, and badly worked clay land cannot do its best in the production of crops. Porous land is easily worked, but it must be mulched in hot, dry weather. Watering such land unless something is done to check evaporation is labour in vain. Globe Artichokes will require a good deal of nourishment, both in the shape of mulch and liquid-manure. The plants that were cut over a month ago will now be breaking away again, and will come in for a late supply. Young plantations produce heads later than old ones. The plants on weak Asparagus-beds should be allowed to grow, and have liquid-manure. Salt is good on porous soil, but not on heavy land. Weeds must be kept down. Tomatoes, both indoors and out, will need very frequent attention. We have generally obtained a good set at this time of year without setting the blooms artificially, as the ventilation is as perfect as it can be. The end of June is a good time to sow the main crop of Turnips for autumn and early winter use. Veitch's Red Globe is a good hardy variety. Chirk Castle Black Stone is also first-rate for standing the winter when sown about the middle of July. Sow Walcheren Cauliflowers for autumn use. It is difficult to beat the Walcheren for any season when true. Winter Greens should be planted as opportunity offers. Broccoli will come in well after the Early Strawberries or Early Potatoes, and it is better not to dig the ground.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 21st.—Gathered early green Long Pod Beans. Planted out Basil that had been raised in heat on south border. Sowed Borage for succession. Shifted on half-specimen plants of Ryecroft Surprise Ivy Pelargonium; makes a good specimen and flowers well in winter. Planted out seedling Begonias. Thinned Tacsonias and other free-growing climbers in conservatory. Planted a frame with Capsicums. Planted out Broccoli of various kinds. Cut Box-edgings in kitchen garden.

June 22nd.—Gathered Early Peas of various kinds. Chelsea Gem might have been gathered several days ago; William Hurst not much behind. Early Horn Carrots are being drawn from frames or bed of leaves of a good usable size. Sowed Early Horn Carrots and Parsley on warm border. Thinned Beet to 10 inches apart. Sowed Radishes and Lettuce on north border. Put in cuttings of Asparagus plumosus, nanus, and tenuissimus in propagating-house. Shifted on Fuchsias for late blooming. Added another tie to Carnations, Dahlias, and Hollyhocks.

June 23rd —Cut Early Cauliflowers under hand-lights from autumn-sown plants. Plants raised in heat in January are turning in. Planted out Autumn Giant, sown the same time under glass. Digging Myatt's Ashtop and Early Puritan Potatoes in open quarter. Old Ashtop and Sharpe's Victor were dug in warm border in front of forcing-house on June 1st. Gathered Early Ruby Tomatoes planted under glass early in February; Ham Green Favourite and Freedom just colouring. Planted out Salvias and Eupatoriums intended for winter flowering, to be potted up in September. Top-dressed Cucumbers. Sowed more Primulas and Cinerarias.

June 24th.—Sowed Pansies. Planted out early-struck Pinks. Potted Chrysanthemums in flowering-pots intended for November flowering. Put in cuttings of tops for flowering later in 6-inch pots. Pegged down Verbenas, Heliotropes, and other plants of trailing habit in beds. Sowed Hollyhocks in open ground, also Forget-me-nots. Pricked off hardy Primulas and Polyanthuses raised in boxes. Moved Azaleas from greenhouse to a sheltered place outside. Made a group of Palms and Ferns in a sheltered glade in the grounds.

June 25th —Gathered Paxton Strawberries on raised border in the open air. Might have gathered Noble a little earlier from same site, but the flavour is not liked. Gathered French Beans from cold pit, started on bed of leaves. Finished thinning main crops of Carrots and Onions. Sowed Laxton's Supreme Peas and Negro Long French Beans. Potted off cuttings of Poinsettias and shifted firm-struck plants into 5-inch pots. Placed early-flowering Pelargoniums outside to ripen wood. Thinned buds on Hybrid Perpetual Roses. Cleared away suckers at same time.

June 26th.—Shifted Zonal Pelargoniums into 5-inch pots for winter flowering. Now on coal-ash-bed outside. Planted out Celeriac in rows on well-manured ground, the rows being 2½ feet apart. Mulched and watered the plants. Hoed weeds everywhere; sun bright, weeds soon die. Pricked off seedling Ferns in boxes, chiefly Adiantums and Pterises. Cut down several old Dracænas. Cut up the stems and inserted the cuttings in sandy peat in brisk hot-bed. Planted out more Brussels Sprouts.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

848—**An old adage.**—Would you oblige me by giving me a pretty full explanation of this couplet, which I have seen given as an old adage?—"A cold May, and windy, makes a fat barn and findy." Please to inform me why it should do so?—Dumbledown.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

849—**Carnations unsatisfactory** *(W. J. R.).*—The plants will grow out of their disorder. Nothing really wrong with them. Due to cold winds.

850—**Sowing Anemone seed** *(Mapperton).*—Sow at once in pans or boxes of light sandy soil in a cold-frame. Rub them thoroughly in dry sand to part the seeds, and sow sand and seed together.

851—**Curious Grape Hyacinth** *(A. B. Moore).*—The flower is quite normal; it is Muscari comosum monstrosum, or the Feather Grape Hyacinth. It shows the characteristic feature alluded to.

852—**Unsatisfactory Radishes** *(South Devon).*—In all probability your Radishes are upon too loose a soil. Rich and rather firm soil is needed for this salad, more especially so the round and Olive-shaped kinds.

853—**Peaches unsatisfactory** *(Roc* and *Richardson).*—Your Peach-trees have suffered from cold winds, and probably frost during the middle of May. A very large number of trees in the southern counties are badly affected in a similar way.

854—**Peach-leaves diseased** *(Lady P.).*—We are sorry to say there is no remedy unless one can secure against the extreme changes of temperature experienced during the last two weeks of May. It is caused by the check from cold winds and frost.

855—**Tomato-plants unsatisfactory** *(A. B.).*—The entrance to cellar would not cause the deformity. Probably want of air would be the cause—that is, too close an atmosphere at night or extremes of cold; the foliage, too, is near, probably touching, the glass.

856—**Black Currant flowers not setting** *(Mapperton).*—We have no doubt the late frosts of both this year and last are the cause of the failure with Currants. It cannot be the pruning or immature wood as the blossoms are borne freely.

857—**Dividing greenhouse** *(Chrysants).*—We are not sure we quite understand your query, but oiled canvas would keep in a large amount of heat. In so small a space as you mention, why not have a small frame, with removable lights, over a portion of the warmest border?

858—**Peach unsatisfactory** *(An Ignorant Connemara Woman).*—The first reason is overcropping, and your gardener is quite right in wishing to thin them out. Secondly, 90 degs. is too high, and if you cannot avoid this you must afford some slight shade—a very slight one will be ample.

859—**Unsatisfactory Roses and Clematises under glass** *(E. T.)*—You keep your atmosphere much too dry for Roses and Clematises. They are also badly affected by red-spider, and parched up. Read our notes on Rose pests in the issue for May 22nd, and follow the advice there given.

860—**Vine suckers** *(F. H. Mountstkoens).*—We cannot undertake to name a Vine from a leaf only, and especially from such a small and withered specimen; nor unless we knew the variety, could we say whether suitable for a cold-house or not. They certainly would not bear next year unless very strong.

861—**Vine-leaves** (*J. C. H.*).—The Vine-leaves sent appear to have been "scalded"—*i.e.*, a great increase of temperature from sun-heat and the foliage too damp at the same time. You must ventilate a little earlier when foliage is so damp and a sudden spell of bright sunshine sets in. Very many subjects have been spoilt through this cause.

862—**Blighted Peach-leaves** (*H. Bromet*).—The spell of very cold weather, both of keen winds and frosts, that prevailed while young leaves were first breaking, is the sole cause of your Peaches curling up and appearing as if attacked by an insect or blight. It often happens, but we have seldom seen it so bad and general as in the present season.

863—**Unsatisfactory Tomatoes** (*Exhibitor*).—You will do well to read "Garden Work" weekly. This will give you full details on culture. See last week's notes in GARDENING We cannot find space for an article this week on both subjects We think you do not keep your Cucumbers warm enough, and do not give the Tomatoes sufficient air.

864—**Early Cabbage** (*Forester*).—We think you must be wrong as regards your date—we mean month for sowing. July not June is the proper month, and as regards date so much depends upon locality and district. From the 10th to the 20th is a good date. We would say about 15th July in your district. June would be too early. The majority of plants would bolt sown so early.

865—**Failing of Begonia tuber** (*Kerry*).—Your tuber of Begonia is completely perished or dead, either from old age, extra drought at some time, or perhaps a drip of cold water where stored. It is no disease or bad treatment, as evidenced by the others doing so well. There are sure to be some failures among plants, and we cannot define in what way you may have erred with this one.

866—**Brown Beurre Pear unsatisfactory** (*Anxious*).—As this is an annual occurrence it is not likely to be frost each year. You do not say what soil it is in, but it is very evident your soil and position are not suitable for this variety. If a rich and not too heavy soil, try Louise Bonne of Jersey or Williams' Bon Chrétien. These are good croppers, and more reliable than Brown Beurré.

867—**Coleuses for show** (*Constant Reader*).—Treat the Coleus plants by placing them in a temperature of 60 degs. to 65 degs. A heated frame or pit is very suitable where they may be placed close to the glass to prevent them from being drawn. If the plants are well rooted a little stimulant should be afforded once a week to encourage their growth. Keep all long shoots pinched back to form a shapely plant.

868—**Plants near Poplars** (*A. M. S.*).—Few plants, especially small or weakly-growing subjects, can thrive near the hungry roots of the Poplar. All the plant food is absorbed by these quick-growing trees. Elms and other quick growers have much the same effect. If you feed the smaller plants the Poplar-roots will encroach and rob them at once. You must persistently cut back and grub the roots where other plants are wanted.

869—**Getting rid of tree** (*Dandilis*).—Anything sufficiently powerful to kill a tree so full of vitality as yours would naturally have a most injurious effect upon other subjects. Why not dig it up thoroughly and replace the tiles, if it must be destroyed? If you only dug down to the crown of roots, and removed that, it might have the desired effect. You leave us entirely in the dark as to what tree it is, so that we can give no definite advice.

870—**Treatment of wild Cherries** (*South Devon*).—Certainly you could bud or graft the wild Cherries. In this issue an illustrated article upon budding appears; grafting we treated upon in the issue for April 27. It would be better to lift some of the Cherries next autumn, and graft the following spring; but you can bud now without any mutilation of the stocks, and lift next season, or allow them to remain upon the lawn as you may elect.

871—**Begonia-leaves** (*Constant Reader*).—Begonias must not be kept outside when required for exhibition, as the wind and sunshine will certainly spoil them. We advise you to stand the plants in a greenhouse or a warm frame, and keep lightly shaded from the strong sunshine. Begonias when required for exhibition require a little encouragement in the way of artificial heat. A temperature of not less than 50 degs. should be maintained by night, especially at this time of the year.

872—**Climbers for roof and sides of conservatory** (*Nemo*).—In our issue for May 1, page 126, we name several climbers suitable for your purpose. Others may be found in Acacia dealbata, Allamanda Williamsi, Bougainvillea glabra, Clematis indivisa lobata, Habrothamnus elegans, Passiflora Eynsford Gem, and such Roses as W. A. Richardson, L'Idéal, Bouquet d'Or, Climbing Perle des Jardins, Climbing Niphetos, Mme. Chauvry, Mme. Abel Chatenay, and Lamarque.

873—**Treatment of Calceolarias** (*Constant Reader*).—We advise you to pot the Calceolarias on at once into 5-inch pots, and place them in a cold-frame where they may obtain plenty of light and sufficient air during the day. They do not require a rich mixture of soil—loam, leaf-soil, and a little sand being essential. When the plants are well rooted give a little artificial-manure in the way of cow-manure, soot-water, and keep them growing in the same size pot until required for flowering.

874—**Weeds on lawns and paths** (*C. J. S.*).—If the Groundsel in the lawn is too thick to pull up without damaging the lawn, clear the ground of both the weeds and Grass, and give a trenching, and leave it vacant for the summer, checking the weeds as they appear. After the ground has been trenched a slight dressing with nitrate of soda will also help to check the weeds. It will be advisable for you to use a good weed-killer for the paths, and the correct directions are sent with it. Carbolic-acid we do not recommend, as it is very unpleasant to use, and requires special care.

875—**Tomatoes diseased** (*Knock Chilver*).—The leaves sent are affected with the disease known as Cladisporium fulvum. This is assisted in its spread by a low temperature and an atmosphere that is moist. It is rarely so bad that the crop of fruit becomes spoiled, and not often touches the leaves so early in the season as in your case. Probably you use too much animal manure in the soil, which induces a soft growth. Your pit, again, may be sunk low in the ground. This would prevent air moving among the leaves to a great extent. You do not say if fire-heat is applied. If not, it will be an easy matter to quite eradicate the disease. It will be advisable, however, to give abundance of air night and day, and be particular to water the plants in the morning. Encourage surface roots by a top-dressing of soil in which mortar-rubble forms a part, and favour a sturdy rather than a gross growth.

876—**Making pond** (*Miss R.*).—You do not give us any idea of the nature of your soil, and this is a great factor in pond-making. We would suggest that you get a plasterer to cement or concrete the bottom in the form of a basin. It would be safer; but you will have to provide some supply against evaporation, either by natural water draining into it, or by an artificial supply. You could plant Ferns, Iris, etc., around the edge, allowing the roots to ramble over into the water at will. A few thick turves of loam laid over the edge will secure this, and at the same time take away the artificial appearance.

877—**Various queries from Bexhill** (*A. F. B.*).—You might lift the Irises carefully and water when replanting, but we fear they would not flower the next season. Irises should remain in one position several years to see them at their best. Anemones may be lifted and dried off steadily, planting again in November, after the Ivy-leaf "Geraniums" are lifted. Send us a frond or two, and also a rhizome of your Hare's-foot Fern. You may cut the double Wallflowers down at any time, but if very good, we would root a few cuttings of young growth in a cool-frame, and use these plants next autumn.

878—**Salads** (*Anxious*).—You will do well to study a good seed catalogue. Lettuce, both Cos and Cabbage are essential. Celery also is a strong point. Small Onions, Mustard and Cress in variety, Globe Beetroot (and Cucumbers, not too coarse). Tomatoes are good, both yellow and red, also in various forms. You give us no idea as to season (you say this year) when you intend to show, so we are unable to give varieties. We have seen as many as thirty shown, including Radishes and things not often seen. On the other hand, there is no merit in mere variety if the quality is poor. Better show a good half-dozen than twenty poor kinds.

879—**Treatment of Lily of the Valley** (*Novice*).—If you leave your Lily of the Valley undisturbed, and feed well with liquid-manures, also mulchings during winter, the crowns will soon become strong enough to bloom freely. To make sure of a bed in full flower, lift in autumn and select the stoutest and plumpest crowns. These will all produce a spike next season. Plant closely, and treat as before. Your bed has evidently gone to grow'h instead of forming flowering crowns, but will soon do so now that the whole of the ground is occupied. We know of beds that have been in the same spot for scores of years, and yet are most satisfactory.

880—**Tomato-plants sickly** (*Constant Reader*).—Your plants are attacked by the Tomato-blight. Spray with Bordeaux-mixture, or make up the following, and use: Dissolve ½ lb. of copper sulphate (obtained from any chemist) in 2 gallons of cold water. Damp and slake ½ lb of quicklime, well stirring this into ½ gallon of soft water. Pour this milk of lime into the copper solution, keeping the whole well on the move for a short time. Mix in an earthenware or wooden vessel, and use within twenty-four hours. Spray a few plants, and if no harm results in two or three hours apply at the same strength to the whole of those affected. The mixture must be kept well stirred. Give liquid-manure in preference to animal manures.

881—**Exhibiting Pink Carnations and Picotees** (*Pink*).—You ask, how are these flowers judged? In the case of the Carnation, size is, of course, an important consideration, and must therefore be always observed. Colour and markings are, if anything, more important than size. Selfs should be pure, rich, bright and clear in colour, and the more these points are intensified the better. These considerations affect the flake, bizarre, Picotee, as well as the fancy sorts also to some extent. However, in this case, clearness and evenness of stripes or markings is equally important. Form, too, requires considerable attention, beauty or evenness is essential in high class flowers. An exhibition flower should have round and thick or shell-like petals, evenly arranged all around; it should also be full and as circular as possible.

882—**Judging Pansies** (*Gem*).—As you do not state the type of Pansy you intend to exhibit, we are somewhat at a loss to advise you "how are the best Pansies judged at flower-shows?" We do not think you mean the Tufted Pansy flowers, so give you the essential points which judges should consider when determining the merits of any one exhibit or merit of an exhibit of the Fancy Pansy. The points are: (1) Good smooth bloom and as nearly circular as possible; (2) Each bloom should possess plenty of substance; (3) The outer edge should be clean cut, solid, dense, circular blotch; (4) Neat, clear, bright eye, without rays or suffusion, and exactly in the centre of the flower; (5) Novelty and variety in colour; (6) Size from 2 inches to 3 inches in diameter. Ragged or notched edges, crumpled florets, indistinct and irregular blotches, are considered blemishes.

883—**Replanting herbaceous plants in July** (*Melancholia*).—As you have to leave in July or August, you may safely remove Pæonies, Auriculas, Poppies, Funkias, Larkspurs, and Christmas Roses. Of course, you would be moving them some two months or so before the proper time; but we think if you were to lift them with a good ball of earth, and carefully and without delay transplant in their new quarters, you would get safely through your trial. We should be disposed to shade them artificially for some time, especially if the weather be hot and dry. They should never be allowed to get dry, and we have good reason to believe you would save your favourites. The Tritomas (Kniphofias) you would experience greater difficulty with, as they would be developing their flower-spikes at the time of removal. You might, however, remove them without losing the plant; but the flowers would be useless this year. The same rule also applies to some of the Lord Penzance Sweet Briers. You could shift them at the time you name, but would run considerable risk. The only chance you have is to lift the plants with plenty of soil on them, and shade until they may be exposed without seriously feeling the effects of it.

884—**Cowslip in Devonshire.**—I have heard lately that the Cowslip does not grow in Devonshire. Will you please tell me if this is so, as I thought it was to be found in every part of England?—A. M. S.

*** *The Cowslip is a general English wild flower, and found in Devonshire as well as the Primrose. It is particularly plentiful in Sussex and Kent.*

885—**Vines.**—I possess three Vines in my garden, and I am anxious to have a young one from each. Will you kindly tell me how and when to start, so that I may be able to procure one of each?—AN OLD SUBSCRIBER TO GARDENING.

*** *Insert buds or eyes of ripened wood in the early spring or late autumn. An illustrated article on the subject will appear in due course.*

886—**The White Wistaria.**—Would Wistaria sinensis alba grow in a very damp situation? The ordinary kind is succeeding fairly well on one side, but the other side gets a great deal of droppings from a faulty rain-water spout?—MISS R.

*** *We are afraid the White Wistaria, which is less hardy and vigorous than the ordinary kind, would not succeed satisfactorily in the position mentioned. It requires a rather warm, sunny position.*

887—**Trees not breaking after pruning.**—Last autumn I planted some dwarf bush Apple-trees, and in the spring shortened the young wood one-half and one-third. I notice they have not broken as I should wish What can I do to make them break lower down?—BE.

*** *Of course, your bush-trees had more than one branch or stem, as shown in your sketch. If not, you should have cut back harder. A newly planted tree seldom breaks very strong until late in the season of the first summer. You will probably get lower breaks later on.*

888—**Pinching back Plumbago.**—Will you kindly tell me whether young plants getting rather straggling and lanky should be pinched back or not?—DERBY.

*** *Yes: cut them back rather hard after flowering, or about half way if not strong enough to bloom yet.*

889—**Jubilee Roses.**—I am told that a particular sort of Rose will be worn at the Jubilee. Will anyone tell me if single or double Roses are suitable, also the colour?—ARCHIE LEY.

*** *We have never heard of this suggestion.*

890—**Cutting a Laurel-hedge.**—Please inform me in your next issue what is the correct season of the year for cutting a Laurel-hedge?—LAURELS.

*** *We prefer to do this in March, when new growth is soon made, and bare places quickly hidden.*

891—**Fruiting Passion-flower.**—I have a fruiting Passion-flower (Passiflora edulis) in my Grape-house, the flowers of which drop off as soon as they open. Can you kindly tell me the reason and oblige? The Grapes in the same house are doing splendid.—F. G. G.

*** *We have always found this a free fruiter, and can only suggest your plant is dry at the roots. It may also be that the petals are merely falling after the flowers are set for fruit. You give us very little information.*

892—**Manuring Strawberries.**—I want to know would it do to put some rather fresh horse-manure round all the Strawberry-plants now, as I notice in last week's paper it says they require so much moisture? Would it make the fruit swell and be finer? All the suckers have been removed.—MISS R.

*** *It is too late to place manure, and especially such as fresh horse-droppings, around fruiting Strawberries. Water freely with liquid-manures between the rows, not into the crowns of the plants, and then place a layer of short straw, coarse hay, or old lawn clippings beneath the fruit. The feeding roots of Strawberries are not near the crowns, but you cannot assist with crude manures so late in the season and have tempting fruit.*

893—**Treatment of clayey garden.**—I have just recently taken a house in Tottenham. I find the ground at the back, which is 100 feet long, is one mass of clay. Would you be so kind as to tell me what I can do with it to make it fit for anything?—CLAY.

*** *Either burn some of the clay or add lime or soot, wood and other ashes, light stable-manure, decayed-leaves, and road sidings. Anything, in fact, to make it less adhesive and supply more plant food. We could answer more to the point did we know what you wish to grow; some subjects like a stiff soil.*

894—**Diseased Hydrangea.**—I enclose leaf of Hydrangea. Kindly say what is the nature of the disease upon it. Several different kinds of plants in my greenhouse are similarly affected. House is a lean-to, 14 feet by 10 feet, which is very damp and sunless. Please say if, in your opinion, too much damping of the floors and stages would be likely to cause this?—J. E. B B.

*** *Damping would not affect the leaves in this way. It is simply the result of neglect to keep plants clean from aphis. Their deposits are sticky, and every particle of dirt and dust sticks to the foliage. You must wash well, and get rid of the aphis.*

895—**Vegetables for exhibition.**—Can you tell me which six of the following vegetables to stage for a collection for competition: Potatoes, Celery, Leeks, Onions, Cauliflower, Parsnips, Carrots, Beet, Peas, Kidney Beans, and Cabbage?—W. H. H., *Salop.*

*** *Stage whichever you have in the best condition. It is quite immaterial which so long as it is really good; but should you have a vegetable in better condition than a rival competitor, be sure to include that, thus securing a good point or points over him in that particular variety. Beet, Carrots, and Parsnips score fewer points than Cauliflowers, Peas, and the others mentioned.*

896—**Japanese Iris.**—Will you be so kind as to inform me if I plant Iris Kæmpferi (Japanese Iris) just now they will bloom this year? Also, do they require to be lifted before frost sets in?—J. S.

*** *They will not flower this year. The plant is quite hardy, loving moisture,*

897—**Superphosphate of lime**—Is this suitable for Vines and Peaches, also Chrysanthemums, and flowers in general; if so, at what rate should it be used?—W. L. K.

*** *At the rate of 2 cwt. to 3 cwt. per acre for most crops.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*J. P.*—Specimens posted between two small pieces of paper only are almost always too far gone to be recognised with certainty. This was the case with yours. Please send again in a small box with some damp material around the stems. Such thin and green growth will not stand several hours of drought and pressure.——*H. H.*—1, Niphetos; 2, A pale bloom of Souvenir d'un Ami——*W. H. S. D.*—The flower had faded, but the plant is doubtless a Scorzonera.——*A. E F. Whaptone.*—Pancratium illyricum, hardy in warm counties and light soil.——*K. D. Read.*—You must send better specimens. The shrub is a small Pyrus, but what kind it is impossible to tell from the enclosed specimen; the other is doubtless a little Alchemilla——*E Y. H.*—1 and 2, forms of the Sun Rose (Helianthemum vulgare); kindly send flowers of the other.——*Nottingham.*—1, Sedum spectabile. Propagate by cuttings any time during summer and early autumn in a dry, sandy compost; 2, Galega officinalis alba, sometimes called French Honeysuckle. Propagate by seeds in spring, cuttings of young growth under glass, by division and layers in early spring or autumn; 3, Anthericum variegatum. Propagate by sowing seeds in cold frame as soon as ripe, and by division early in spring; 4, Selaginella Kraussiana. Propagate by cuttings, at any time in a warm and moist atmosphere under glass; 5, Too withered to recognise; 6, Aubrietia deltoidea. Propagate by cuttings of young growth in April or May, and by seeds sown at same date; 7, An unrecognisable Moss; 8, Polystichum angulare syn. Aspidium angulare; 9, Broom.——*R. A. P., Boscombe.*—1, Elæagnus; 2, Mahonia Aquifolium; 3, Lonicera sempervirens; 4, Pernettya floribunda; 5 and 6, Both are too inferior specimens of Roses to recognise with any certainty. Your specimens were not very satisfactory.——*H. Tunnington.*—1, Pyrus intermedia; 2, Pyrus vestita; 3, Diplopappus chrysophyllus; 4, Pyrus arbutifolia; 5, Piptanthus nepalensis.——*W. D.*—1, Snowberry (Symphoricarpus vulgaris); 2, Weigela or Diervilla rosea; 3, Myrtle-leaved Kalmia (K. myrtifolia); 4, Spiræa filipendula fl.-pl.——*Longforgan.*—The purple flower is apparently Androsace lanuginosa; but kindly send leaf. The yellow one is Heliopsis lævis.——*J. Winter.*—Your Rose was too fallen for us to decide if single or semi-double. If the former it is the old Yellow Austrian Brier; and the Persian Yellow if semi-double. Yes; you can grow it in a pot or tub, but it is only an early summer bloomer. It is very pretty, but unfortunately evanescent.——*Hooper, Nailsworth.*—Centropogon Lucyanus.——*Millfield.*—1, Chelidonium majus (yellow flower); 2, Spiderwort (Tradescantia virginica)——*Lavender.*—1, Asphodelus ramosus; 2, Echeveria secunda glauca; 3, Hemerocallis flava (Day Lily); 4, Nepeta Mussini; 6, Veronica decussata; 6, Saxifraga hypnoides (Mossy Rockfoil). Your other question is answered in the query column.——*Mrs. M. Clover.*—You should have numbered your plants. The yellow flower is the Spanish Furze (Genista hispanica); the small white-flowered shrub is Spiræa Thunbergi, and the other the Service-tree (Pyrus Sorbus).——*W. Stacey.*—Round-leaved Maple (Acer circinatum).——*Henry Overton, Newport, Mon*—1, Liriodendron tulipiferum; 2, is a Crataegus, but as you have only sent a single leaf we are unable to say which species or variety it is. If you care to send a proper specimen (in flower), we shall be pleased to name it for you.——*Mrs. U.*—The pale Lemon Rose is Caroline Kuster, one of the best Noisettes. Francisca Kruger, one of our most reliable Teas, is the name of your coppery-salmon bloom. Both are among the best of their classes.——*C. Boulker.*—Prunus Padus.

LAW.

THE ALLOTMENTS AND COTTAGE GARDENS COMPENSATION FOR CROPS ACT, 1887.

Holdings to which the Act applies.

It applies to any piece or parcel of land of not more than two acres in extent which is situated outside the Metropolis, but anywhere else in England or Wales, and which is held by a tenant from a landlord, and is cultivated as a garden or as a farm, or partly as a garden and partly as a farm, no matter whether it is attached to a cottage or not. It applies equally to such pieces of land, whether let from year to year, or upon a lease for a longer period, or for periods shorter than a year. So that it applies even to weekly and monthly tenancies.

Benefits secured by the Act.

Upon the termination of the tenancy of any such holding as already described the tenant is entitled to compensation from his landlord for certain things, and it may be as well to here point out that the compensation is to be claimed from, and paid by, the landlord, and not the incoming tenant, and also that compensation can be claimed just the same, even if the tenant has entered into a written agreement to leave the place without claiming any compensation.

The tenant is entitled to compensation for crops, including fruit, growing upon the holding in the ordinary course of cultivation, and for fruit-trees and fruit-bushes growing thereon which have been planted by him with the previously given written consent of the landlord. If the tenant leaves at a season when the fruit growing on the trees is not ripe and cannot be pulled, he can claim compensation for it and for growing crops of all ordinary kinds. But this will not secure compensation for crops of an extraordinary kind, and very long ago, a man who had an allotment planted it with bulbs which he intended to sell or use for his trade as a nurseryman and florist, and as he received notice to quit before the bulbs were ready for taking up, he claimed compensation for them, and the landlord refused payment. The matter ended in a law-suit, with the result that the courts decided that as the holding was used for growing such crops it was not cultivated partly as a garden and partly as a farm, and the tenant got nothing for his bulbs. The tenant is only to be paid for crops ordinarily grown and cultivated on such allotments and cottage gardens. Notice, too, that unless before planting any fruit-trees or fruit-bushes the tenant obtains from his landlord permission in writing to plant them he cannot obtain compensation for them on quitting, no matter how healthy and valuable they may be.

The tenant is also to be compensated for all labour done and manure applied since the last crop was removed, such labour and manure being applied for the benefit of a future crop. The tenant is also to have compensation for any drains, and for any outbuildings, pig-sties, fowl-houses, or improvements made by him to existing buildings, but only in the event of having obtained his landlord's written permission before beginning to make such drains, or to erect such buildings, or to make such improvements.

In fixing the amount of compensation to be paid by the landlord to the tenant there must be taken into account any sum owing to the landlord for rent, or for breach of agreement, or for wilful or negligent damage permitted or committed by the tenant.

How the amount of the compensation is to be settled.

It is open to the landlord and the outgoing tenant to agree between themselves as to the amount of the compensation, and as to the date on which it is to be paid, but if they cannot agree the amount is to be settled by arbitration. If they cannot agree upon the amount to be paid, they may, if they choose, agree who is to be the arbitrator between them, and the arbitrator will then proceed to settle the difference between them. If they do not come to any arrangement for twenty-eight days after the tenancy has ended, either of them may apply to the magistrates in sessions to appoint an arbitrator, and the application may be made personally or in writing. If in writing it may be by letter addressed to the clerk to the magistrates, who will put the applicants right. The magistrates may appoint one of themselves, if the one appointed is not personally interested in the holding, and if they do not appoint one of themselves they may appoint any competent person; but if possible they are to get the consent of the person appointed to act without receiving any pay for the work he does—a proceeding not always easily accomplished—and if they cannot get a person to act without pay they are to fix the sum he is to be paid.

Procedure of the arbitrator.

The arbitrator must proceed to settle the difference referred to him within seven days after he is appointed, and he may call for any document in the possession of either landlord or tenant which may throw any light on the subject, and he may examine any person on oath, and he may proceed in the absence of either party after he has given both of them notice. He must make his award in writing within fourteen days after he is appointed, but, if both parties consent, the time may be extended by another fourteen days. The award must fix a time, not later than fourteen days after its delivery, for the payment of the money awarded for compensation or costs (if any), and those costs may be ordered to be paid by either party as the arbitrator thinks proper, or he may divide the costs between them in any way he thinks proper.

No appeal.

There is to be no appeal from the award, and it is to be final and binding, and it is not to be questioned by any process of any court. The reason why there is to be no appeal is to avoid any litigation, and so save a poor tenant costs in a law-suit.

Recovery of compensation money.

If the sum agreed to be paid, or awarded to be paid, for compensation, or for costs, or for both, is not paid within fourteen days from the day when it was agreed or awarded to be paid, the money may be recovered upon an order made by the judge of the local county court in the same way as money ordered to be paid by the county court is ordinarily recoverable.

It may also be pointed out as the result of a recent trial that the arbitrator need not be appointed in writing, and that it is unnecessary that the application should be made to the justices within twenty-eight days after the end of the tenancy, and that such application may be made at a later time. K. C. T.

*** *This Act affects many garden tenancies, and perhaps a plain and concise statement of the effect of the Act may be of service to many of our readers.*

What is a tree or sapling? (*Anxious*).—I think that the tenant must not cut down nor injure the promising growths of young Ash and Oak. In Gage v. Smith it was held to be waste to suffer germins or young shoots, springing from trees which have been felled, to be destroyed. I think that the doctrine there laid down would apply in this case also. Of course, it may be questioned whether there was any intention by the landlord that these trees should be allowed to grow again. Perhaps the landlord would, if asked, disclaim any such intention, but in the absence of such a disclaimer, I think the tenant would be actionable.—K. C. T.

The provision of allotments (*W.*).—The printed heading of your letter would almost indicate that you have means of access to certain official papers. If this be so you can easily find detailed answers to your queries in the circular sent in 1887 by the Local Government Board to all sanitary authorities. If not, get a copy of the Act of 1887 from the Queen's printers, or get the Act with notes and index as published by Knight and Co., Fleet-street, London, at about 2s. To answer your questions briefly:—The duty of a sanitary authority to provide allotments arises when the authority are of opinion that there is a demand for allotments for the labouring population in the district, and that such allotments cannot be obtained on reasonable terms by voluntary arrangement. The authority must then provide allotments if the authority are of opinion that land can be obtained for the purpose upon such terms that the cost and expenses of purchase, etc., will be recouped out of the rents of the allotments. The authority may provide suitable allotments in any convenient place, and is certainly not bound to procure the particular field specified by the petitioners. The intention of the Act is that no burden shall be thrown upon the rates, but that if land can be obtained on such terms that there will be no burden on the rates, then the authority are to obtain it.

A servant's garden (*Interested*).—You are entitled to a valuation. You should ask your master if he is willing to pay you for the growing crops, etc., and if he is willing to do so, you should arrange terms between yourselves, if possible; if you cannot agree as to the terms, you should arrange that a third person shall settle the matter for you. If your master refuses to allow a valuation, you must apply to the justices at petty sessions (magistrates at the next day for hearing cases) to appoint an arbitrator to decide what valuation, if any, is due to you. The application will be under the Allotments and Cottage Gardens Compensation for Crops Act, 1887, and you should tell the magistrate's clerk what you are going to do a day or two previously. You will be entitled to compensation in money for crops, including fruit growing in your garden in the ordinary course of cultivation; and you will be entitled to compensation for fruit-trees and fruit-bushes planted by you, provided that before planting them you obtained the previous written consent of your landlord. Also you will

; entitled to compensation for labour expended ›on, and for manure applied to your garden in :pectation of a future crop, such labour being ·pended and manure being applied since the ɜt crop was taken.

Threatening to shoot trespassing ›gs(*B*.)—Proceedings may be instituted against :nan who threatens to do certain criminal acts, ıt it is not necessarily a criminal offence to .reaten to do any illegal act. No proceedings ›n be taken against the person who has erected ːe notice-board to which you refer.

Fowls straying on highway (*R.*).—he vicar cannot compel your father to keep his ›wls at home, but if the birds trespass on the car's garden, etc., he may recover damages ;ainst your father, and he certainly need not ːep the garden wired. It is not an offence ;ainst the Highway Acts to allow poultry to ray upon a highway, but the person entitled to ːe herbage of the highway might sue your ther for damages.

A peculiar garden tenancy.—My wife a property owner, and before our marriage I red a garden of her at 2s. 6d. per year. Soon ter marriage I took to another garden and anted it with vegetables at my own expense. y wife and I have parted on friendly terms. an I claim what I have put into the garden?—UZZLED.

*** So far as the garden taken before the arriage is concerned you are in the same ›sition as any other garden tenant of your ife, and when you quit that garden you may aim compensation under the Allotments and ottage Gardens Compensation for Crops Act r growing crops, including fruit. Your rights ill be confined to compensation; you cannot ːmove the crops when they become ripe. As ›gards the garden "taken to" after marriage does not seem that you were really the tenant : it, as you probably never paid rent for it. If ou have removed away from it, and your wife as possession of it, you can remove nothing nor et claim anything; the question of compensa-on should have been decided at the time of ːttling the separation. If, however, you are ı possession, it is questionable whether you are ot a tenant at will, but it is useless discussing ıe various possibilities. If you want further dvice you must give full particulars stating hether you have or have not the possession of ıis garden, and if you have possession say /hether you pay rent for it.

LATE INSECT PESTS REPLIES.

Destroying ants (*Constant Reader*).—The est way to destroy ants is to find their nest, pen it, and pour in boiling water, dilute carbolic ›id, or paraffin-oil. If you cannot get at the ests the only way is to trap them with pieces f sponge dipped in treacle, or pieces of paper neared with treacle, which, when covered with nts can be dipped into boiling water, or burnt. ınd, soaked in paraffin-oil, laid about over their ins might drive them away.

Pine-tree attacked (*A. M. Galindo*).—The grubs attacking your Pine-tree are the ıterpillars of the Pine-bud-moth (Retinia uoliana). The best means of destroying this est is by removing the bud or shoot in which caterpillar is and burning it; this should be one as soon as the mischief is perceived, and ›ill lessen the number of the moths, and so ender the attack next year less harmful. When he moths are flying about the tree in July or ıugust it might be useful to syringe or spray he tree with soft-soap and water, in which a ttle paraffin-oil has been mixed, to prevent hem laying their eggs.

Vine attacked (*C. C.*).—The insect ttacking your Vine is the black Vine-weevil Otiorrhynchus sulcatus). It is a very trouble-ome pest, both in the beetle and in the grub tates. Lay white sheets under the Vines, and fter dark bring in a bright light; this will ften cause them to fall. If it does not, give he rods a jarring shake. Tie small bundles of ay or dry Moss to the rods here and there for ıe weevils to hide themselves in during the day. 'hey only feed at night, and hide themselves ıost cunningly at other times. Examine the undles carefully every morning. The grubs ›ed on the roots of Primulas, Cyclamens, Ferns, tc.—G. S. S.

Onion failure (*G. C. Beate*).—We are afraid we cannot say what was the cause of the failure of your Onions, but we think you may rest assured that the centipedes are not the culprits. They were probably feeding on some grubs which were in the soil, and which were very likely attacking the Onions.—G. S. S.

Wireworms(?) (*C. W. Lyon*).—The creature you sent was not a wireworm, but one of the hairworms. They are quite harmless in gardens. They pass a great part of their existence as internal parasites of insects. At a certain state of their life they leave their hosts and live in the ground. Wireworms are only about ¾ inch long, and are much thicker in proportion.—G. S. S.

Insects (*W. T. O.*).—The two insects (?) in the box you sent were both centipedes (Lithobius forficatus); but the smaller one was immature. They are very useful in gardens, as they feed upon small insects, grubs, etc. You may catch numbers of woodlice by laying bricks, tiles, or slates on the ground, leaving them for a few days, and then lifting them up, when you will probably find several under each. Slugs should be searched for of an evening after rain.

POULTRY AND RABBITS.

Turkey chicks dying (*Anxious*).—The symptoms described are not very clear as to the cause of death, and it would have been better had the querist given fuller information as to housing, etc. The presence of diarrhœa shows that something was amiss with the arrangements in some way, and we are inclined to think that the chicks took cold, and died from inflammation of the lungs or bowels. It is not usual for chicks which are affected with the former ailment to eat freely, so that impaction of the crop would be more an indication of bowel disorder, probably brought on by unseasonable weather or damp.

Gander with broken limb (*I.*).—If you had called in a medical friend or a veterinary surgeon at the time the accident occurred, so that the limb might have been properly set, we believe the bird would have recovered and proved serviceable in future seasons. He might have walked lame, but this need not have interfered with him as a stock bird. As the case now stands it is difficult to speak in his favour. The breakage may be repaired naturally, but we question whether it will be efficiently done, and unless this is the case it would be hopeless to expect the gander to be of any use another year. Under the circumstances, we should be inclined to kill him at once. It is useless to keep an uncertain stock-bird, especially when his services are only required for a period of six weeks in the year.

Laburnum seeds.—Kindly say if Laburnum-seeds are likely to poison poultry?—West Meath.

*** *We have never tried these, but as poultry often have the opportunity of picking up these seeds, and we do not find many escape being eaten, we should think them harmless.*

GARDEN AND PLANT PHOTOGRAPHS, 1897.

The Editor of The Garden and Gardening Illustrated announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—Country Houses and Flower Gardens.—A prize of Ten Guineas, and a Second Prize of Five Guineas, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—Flowering Plants.—A prize of Six Guineas, and a Second Prize of Three Guineas, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—Borders, Groups of Hardy Plants, Ferneries, Rock and Water Gardens.—A prize of Five Guineas, and a Second Prize of Three Guineas for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—Lawns, Old Orchards, Wild Gardens, Grass Walks, and Picturesque Drives.—A prize of Six Guineas, and a Second Prize of Three Guineas for the best ten most varied and distinct views of lawns and lawn trees: evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—Best Garden Fruits.—A prize of Five Guineas, and a Second Prize of £2 10s. for the best collection of not less than twelve photographs of garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—Best Vegetables.—A prize of Five Guineas and a Second Prize of Two Guineas for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—Cut Flowers, Table Decorations, etc.—A prize of Five Guineas for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—Vases, Fountains, Garden Houses, etc.—A prize of Five Guineas for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until the last day in October, 1897.

What to avoid.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

First.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

Second.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

Third.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

NOTICE TO ADVERTISERS.

In consequence of Her Majesty's Diamond Jubilee we shall be obliged to go to press early with the next number of Gardening Illustrated dated June 26th. Orders should reach us as early as possible in the week preceding to insure insertion. No advertisement intended for that issue can be received, altered, or stopped after first post on Friday, the 18th of June.

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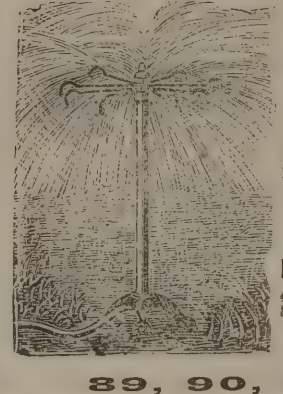

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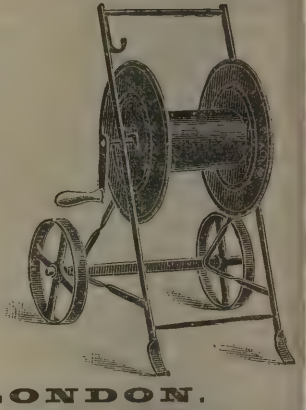

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CHRYSANTHEMUMS.

SEASONABLE NOTES ON CULTURE.

No time should be lost in transferring the plants, for whatever object they are cultivated, into their flowering-pots. If it is not convenient for a few days, or even longer, the plants ought to be freely supplied with weak liquid-manure to aid the plants in their limited rooting-space. The fault of allowing plants to remain too long in pots that do not provide adequate space for their roots is that a check is given to that free, uninterrupted growth so desirable to obtain the highest point of success. When Chrysanthemum-plants are deprived of pot-room the roots are almost sure to become parched and much too dry in the centre. This check causes the lower leaves to turn yellow and fall off. This defect may not show itself for some weeks afterwards, but comes at an awkward time, when the plants are in active growth in July, and when all the energies of the plants are needed to enable them to make that luxurious growth through the month named, and the succeeding one also. Pots 10 inches in diameter are a suitable size for plants to flower in that are intended to produce large blossoms for exhibition or for home decoration. Whether for one purpose or the other, the method of cultivation is the same. Weak-growing varieties, like Mrs. Alpheus Hardy, for example, will succeed in pots 2 inches smaller. Plants for the decoration of the conservatory or dwelling-house and for giving cut-blooms in quantity will succeed in 9-inch pots. For the latter purpose two or even three plants of the same variety are often put in one pot 11 inches in diameter. Such pots often produce a wealth of flower which is of the utmost service in filling vases in a cut state. Varieties like Elaine, Lady Selborne, Source d'Or, and Peter the Great are specially adapted for this method of cultivation, and are sorts that are in request where distinct colours are in demand. Perfect drainage of the pots is a detail to which all good cultivators pay special attention. The crocks or broken potsherds should be laid evenly at the bottom of the pots, and in such a manner that efficient drainage is secured. Over the drainage arrange some of the rougher parts of the compost to prevent the fine parts of the soil washing down. The compost for the final potting of Chrysanthemums is important, and although the after-attention is perhaps the more important detail, sound principles should be followed in potting the plants. Fibry loam is the staple of the compost. To every three parts of this add one part half-decayed horse-dung, half a part leaf-mould, and as much coarse silver sand and small knobs of charcoal as will keep the whole porous. The character of the loam—heavy or light—guides the cultivator in mixing the compost. For loam heavy in texture, and therefore retentive of moisture, a quantity of porous-making ingredients, like charcoal, road-grit, and sand, is necessary. With loam, the reverse in character, but little of these mixtures is needed. To every bushel of the prepared compost add 2 lb. of some well-approved fertiliser.

Before potting, the roots of the plants should be made thoroughly wet, as then water will not be required for two or three days, until the new soil becomes settled down into its proper position. After potting syringe the plants twice daily, which dispenses with the necessity of watering until the roots are commencing to run into the new soil. Ram the soil firmly into the pots with a blunt dibber, as so much depends upon the future welfare of the plants growing in firm soil. The growth under such conditions is matured as it progresses. When the soil is put into the pots loosely the roots ramble through it quickly, and the growth is soft and sappy. Firm, mature growth is the precursor of blossoms possessing much solidity of petal as well as deeply-built blooms. The latter are more to be aimed at than those remarkable for width, yet devoid of solidity—a cardinal point in a typical Incurved Chrysanthemum-bloom.

The plants should be stood in some sunny position where they will obtain all the advantages of exposure to the sun, air, and wind. Shelter ought to be provided from south-west winds, as during the end of August and the early part of September much damage is invariably done to plants exposed to the equinoctial gales we always experience, especially in the southern counties. Some plants exhibit strong tendencies to the formation of bloom-buds instead of growth at this season of the year. The Queen of England group is perhaps more addicted to this freak than any other, if I except, perhaps, Miss Anna Hartshorn and Viscountess Hambledon amongst Japanese varieties. Promptly remove all flower-buds from the point of each shoot with a view to encouraging a succession of growth which will result in vigorous shoots instead of abortive blossoms. The number of blooms each plant is intended to carry must at this season be determined. Three is the general number allowed when large blooms are wished for, also of the highest degree of quality. Limit the plant then to three shoots, as each growth will produce a blossom. The sooner the shoots are limited to the final number of three, the sooner, of course, will the energy of the plant be concentrated into the selected shoots. A careful watch should be kept for insect pests, such as green and black-fly specially. For both of these dust the parts affected with Tobacco-powder in the evening, and in the morning give the plants a vigorous syringing with clear, tepid water. In stubborn cases dip the points of the shoots in Tobacco-water, as when the leaves are curled inwards the powder does not always touch the necessary portion of the affected shoot.

E. Molyneux.

Flower-buds.—The time is not far distant when we shall be puzzled as to bud selection. Even thus early a number of sorts are giving crown-buds, which in some seasons I have retained to produce the desired exhibition blossoms, but these will not be selected now. Early July is an excellent time for crown-buds to come, because one may nip them out and allow another growth upwards with the certainty of obtaining a well-timed crown-bud about mid-August. Not to retain flower-buds which appear in July is, I think, advisable. These, indeed, do swell up and look most promising up to a certain time, then other little buds are noticed pushing out of them, and finally the hen-and-chicken monstrosities are developed. Occasionally one may get a well-shapen blossom by early bud formation, but without exception they are wanting in colour, and the florets are comparatively thin and devoid of substance.—S.

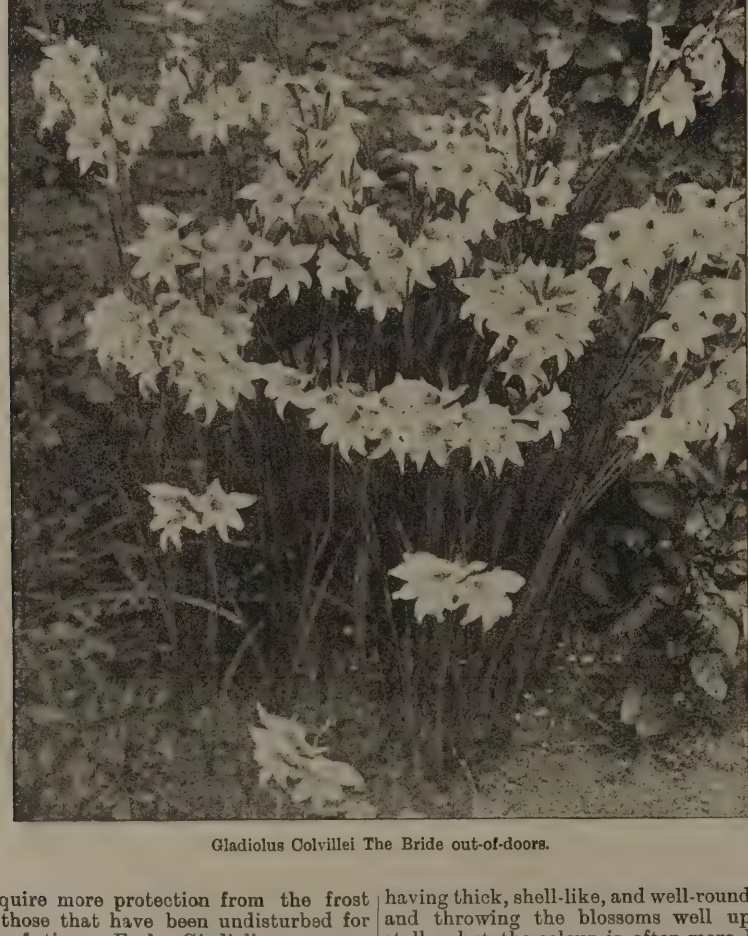
Stopping early Chrysanthemums (*H. J. Bates*).—Madame Desgranges, Lady Fitzwilliam, Ryecroft Glory, Harvest Home, Comtesse Foucher de Careil, and Mlle. Lacroix are each beautifully spreading and branching in their habit of growth, and we should not be in the least disposed to stop your plants, unless they are small and weakly, and do not appear to give promise of breaking naturally soon. When once they begin to branch out they will very quickly make headway and reward you with plants each carrying a fine crop of buds in the early days of the autumn. It is the later sorts which usually grow to a great height that so often need to be stopped, and this is done to make them bushy, or, in the case of very late sorts, to induce them to blossom earlier.

Carnations.—These plants, whilst so beautiful in gardens, and of such remarkable popularity as gathered flowers, seem to be in danger in two directions by suffering from over-popularity. The introduction of the Malmaison varieties, with their huge, irregular, and ungainly flowers, none too richly perfumed, has led to a demand for large-flowered sorts, and these almost always are associated with split pods, so that much of the special charm of the old Carnation is lost. No Carnation-flowers can equal in beauty or usefulness those of moderate dimensions, of fine form and broad petals, accompanied with pleasing perfume. Of such we can hardly have too many. The second element of danger is found in the newer practice of bedding out Carnations—one that is rather common. It cannot be said that Carnations are ideal bedding plants. Not only are they not continuous bloomers, such as bedding plants should be, but the need for stakes to support the stems equally all over the bed gives an air of formality which is far from pleasing. I think it is so much preferable to make either in mixed beds or borders blocks of some five or six strong plants of a variety, as in such case the flower-stems need not be tied up so stiffly or so singly as is found needful when an entire bed is filled with the plants. When plants stand singly in borders, and are the first year from the layer, it is a capital plan to layer a few of the outer shoots, and then top-dressing above them and the old plant in the winter with disused pot soil. Allow the entire clump to remain, and thus create a fine mass of bloom the following summer. Very old plants which become ragged should not be tolerated; and however grown, propagation by layering should be conducted regularly every year.—D.

Pæonies (*G. O.*).—These are increased [illegible] cuttings, and by grafting upon stronger [illegible] recent issue we gave a full reply [illegible] page 165.

EARLY GLADIOLI.

Gladiolus Colvillei albus The Bride is on all sides deservedly well known and appreciated, its ease of culture, purity of flower, and the cheap rate at which the corms can now be purchased having all contributed towards its distribution. Few flowers surpass this Gladiolus as subjects for indoor decoration, the tall, chaste bloom-scapes lending themselves readily to artistic arrangement. In the South of England, where the soil is not unduly heavy and damp, the corms may be left in the ground all the year round. The clump figured in the accompanying illustration has now been untouched for some years. Some growers prefer, however, to lift the corms after the leafage has died down and to plant again in November. This plan has certainly the advantage of retarding in growth until the spring, while the corms left in the ground will often by Christmas have thrown up leaves 1 foot or more in height, which are injured badly by severe frost. When planted, a mulch of leaf-mould or some other light material should be given, as newly-planted



Gladiolus Colvillei The Bride out-of-doors.

corms require more protection from the frost than do those that have been undisturbed for a length of time. Early Gladioli are grown well in the Channel Islands, and in the early summer large sheaves may be seen in the Guernsey market associated with Ixias, Sparaxis, and other Cape flowers. Amongst the best of the early Gladioli are delicatissima, Blushing Bride, and Salmon Queen, respectively white, flesh-coloured, and salmon, with darker markings; ardens, insignis, and Prince Albert, different shades of red or dark pink, the two former with darker and the latter with white markings. There is, besides, a large number of named varieties which are well worthy of culture. Those belonging to the nanus section are generally from a fortnight to three weeks earlier in blooming than those obtained by hybridising from G. ramosus. F.

...anula persicifolia alba grandiflora.—...gest of all the white Bellflowers, and is ...on this account, but for the wonderful ... are produced. In the ...me, and equally so ...d in praise of this

CUT FLOWERS FOR PROFIT.

With reference to this subject, a few notes may be of service to several of our readers. For a good many years past I have grown cut flowers to a considerable extent for sale, and find a ready demand, especially for the hardier outdoor kinds, of which a good bunch can be profitably retailed for sixpence or a shilling.

Among the hardy annuals Sweet Peas must stand first, I think. Everyone likes them, especially the pure white and delicate pink forms, such as Mrs. Gladstone and Princess Beatrice; and then they are so hardy, vigorous, and afford such a constant wealth of fragrant blossoms, which for making wreaths, crosses, as well as for the groundwork of bouquets, etc., are almost unequalled. This spring I sowed, almost on chance, two long rows of Emily Henderson and Mrs. Sankey, as well as others of Mrs. Gladstone, the Scarlet and White Invincible, Purple Prince, etc., and they have afforded bushels of exquisite blossoms, and paid, I think, better than anything else in the garden. Mrs. Sankey is decidedly the finest flower, having thick, shell-like, and well-rounded petals, and throwing the blossoms well up on long stalks, but the colour is often more like blush or pale pink than white; but Emily Henderson is quite white. Next season I intend growing Blanche Burpee, and also the Giant White kind, which, from what I have seen, is as fine a form as any of the Americans. I have also a deep fiery-scarlet kind that is very telling and useful. In spite of the dry weather (and we have had no rain here to speak of since April), and a very high and dry position, with light and rather shallow soil, the rows have kept on blooming wonderfully, and are still doing well, simply because they are cut almost bare most days—this is the great secret. The Everlasting Pea is another very useful and highly productive subject, the pure white form being a really grand thing, and the rich crimson kind is also superior to the common pink kind.

Other good hardy annuals are the blue Cornflower (Cyanus minor) (the rose and white forms are comparatively worthless), some of the finer Godetias, the rose and white Malope grandiflora, and best of all, the beautiful Chrysanthemum coronarium, a simply invaluable plant. We have these in three or four shades, such as white, cream, sulphur, and golden, and though we have been cutting heavily at the beds almost daily since early June, they are not exhausted yet. Some of the plants produce perfectly double and very neat blossoms, and these last better when cut and placed in water than any other hardy flower we have; often from a week to a fortnight, even in the hottest weather. The Sweet Sultans must not be forgotten; the yellow or golden form (Centaurea suaveolens) is a sweetly pretty flower, and stands well when cut, and the New Giant White is also an acquisition. These plants like a light, warm soil, and do much better when sown *in sitû* than if transplanted. Mignonette, too, is often useful, and always sweet. If kept regularly cut the plants keep on pushing up fresh growths and flowers, and our bed, on a scorching southern slope, is still quite green and deliciously fragrant.

China Asters in variety are, of course, grown in considerable numbers. I usually make two sowings—one under glass early in April, and another in the open ground a month or so later. These last, pricked out in June or July, come in after the others are over. We lift and pot the best plants, and cut the smaller ones. The Victoria has proved the most useful of all this season, only growing 12 inches to 15 inches high, while the Dwarf Chrysanthemum-flowered and other very low-growing kinds are almost too short for either pots or cutting. The "Queen of the Market" type I do not like. The stems are too weak and hang about, but the flowers are very early and pretty. The Comet Asters are very elegant and useful, the white form especially, and for cheap bouquets the Quilled or English Asters are good—very hardy and free. Stocks, too, are invaluable. If sown early and well-grown, the large-flowered Ten-week or German forms are really fine, either for pots or cuttings, but the East Lothian and Intermediate varieties produce finer spikes: these should be sown now in a cool frame or pit.

Zinnias are simply grand for cutting, the colours being so rich and bright, and the flowers lasting well when cut. The seed must not be sown too early, and the plants require rich soil and plenty of moisture. Phlox Drummondi, though showy, is not of much use for cutting, nor yet are the perennial forms—the blossoms drop too soon. Verbenas are much better, and succeed splendidly here—in fact, we can sow in the open ground early in April, and get good flowering plants before the summer is over. Gaillardias are invaluable, and easily raised from seed sown now, or in the early spring under glass. Another very useful hardy plant is Coreopsis grandiflora, with much larger and finer blossoms than those of C. lanceolata, and thrown singly on very long and stiff stalks. These bright yellow and orange-coloured flowers seem to be all the rage this season—here in the south, at any rate; and the perennial Sunflowers, both double and single, as well as Harpalium rigidum, the Doronicums, Rudbeckias, and others of this class take well. Another very useful flower for wreath and bouquet work is the double white Achillea Ptarmica "The Pearl;" this is easily raised from seed, even flowering the same season, and produces its neat double white blossoms in great profusion, and for a long period, while they also stand well when cut. The double white Campanula persicifolia is another fine thing for cutting, and a good form of the common double white Pyrethrum is by no means to be despised. This leads to the mention of the exquisite Pyrethrum uliginosum, and Chrysanthemum maximum also is good.

Then there are the beautiful Pyrethrums (P. roseum), both double and single-flowered, also easily raised from seed, and the white and yellow Marguerites, or Paris Daisies, which always seem to sell well. I had almost forgotten the double German Scabious, which are really excellent things, flowering freely the same season from seed (we have them now in bloom from seed sown in April); a grand form of these is called Snow-white, and the plants do well in pots. Carnations one can never have too many of, of course, especially of good white forms, such as Gloire de Nancy, Mrs. F. Watts, Mrs. Muir, and Mrs. F. Gifford, a good scarlet, like Horace or Danger, delicate rose or pink colours, as Ruby, Ketton Rose, the Burn or Burn

Pink (also known as Maggie Lawrie), and the old Pink Clove; good crimsons like Uriah Pike and the Crimson Clove, pure yellows, as Germania, etc., and orange or salmon shades, like Mrs. R. Hole, Carolus Duran, and the Pasha. But for cutting purposes good seedlings are decidedly better, or, rather, more profitable, than named kinds, producing at least treble the quantity of bloom, requiring less care, and continuing in flower longer. The Grenadin is a very early, showy, and useful type of Carnation, and the "Early White" is a capital kind to grow with it.

I could mention the beautiful fiery spikes of the Montbretias, Gladioli, Dahlias, the Goat's Rue (Galega), Double Lychnis, Geums, and many more, but time and space forbid. I must, however, add that we find the pure-white and Yellow Antirrhinums—not the Tom Thumb class, but that growing about 18 inches or 2 feet high only—extremely valuable for cutting, and probably more persistent and continuous in bloom than any other hardy plant.

B. C. R.

A DISTINCT LILY (LILIUM TESTACEUM).

From the uncommon tint of its blossoms this Lily attracts quite as much attention as any other member of the genus now in bloom, for the flowers are of a peculiar shade of nankeen or buff, which is but little represented not only among Liliums, but in the case of flowers in general. It is a hybrid between the Madonna Lily (Lilium candidum) and the Scarlet Turk's-cap (L. chalcedonicum), and while in some features showing a leaning towards the former and in others to the second, it is in some respects about midway between the two. The segments of this Lily are a great deal reflexed, nearly as much as in the Turk's-cap section, while they are borne in a somewhat open head, each blossom being disposed horizontally or nearly so. Against the peculiar buff tint of the flower the bright orange-red anthers stand out very conspicuously. The blooms possess a pleasing fragrance. The blossoms of this Lily expand about ten days later than those of L. candidum. The height varies to a certain extent according to the situation and other particulars, but where well established and under favourable conditions it will run up from 5 feet to 7 feet in height. These tall, stately stems enable the beauty of the blossoms to be well seen, for being borne in a horizontal manner, the prominent features are more discernible when thus elevated than they would be on short stems. This Lily starts into growth early, and when just above ground it might readily be mistaken for L. candidum; but it does not push up radical leaves in the autumn, as in the case of the Madonna Lily. Still, it is second only to L. candidum in putting in an appearance in early spring, the Japanese L. Hansoni treading closely on its heels. It is cultivated very successfully by some of the Dutch growers, from whom most of the bulbs planted in this country are received. Besides the specific name of testaceum it is also known as excelsum, peregrinum, and Isabellinum. Though the young foliage is very delicate, it is seldom injured by spring frosts or cutting winds.

H.

The Double Golden Cress.—This plant, Barbarea vulgaris plena, has been put into commerce in years past as the Double Yellow Rocket, much to the surprise of those who knew that there is no golden member of the family. Really this double yellow-flowered plant, which produces in May very compact spikes of brilliant yellow flowers at a height of about 2 inches, is but a variety of the American Cress. It is all the same a striking border plant.—D.

Lychnis chalcedonica.—The heads of blossom upon this plant are almost as vivid as in the "Geranium," but are moderated by an abundance of leafage that renders it far more agreeable in a mass. Perhaps the more showy plant is the typical species, the heads being larger and the flowers more clearly defined than in the double-flowered variety. The former may be had abundantly from seeds, several dozen plants being secured from a sixpenny packet of fresh seed.

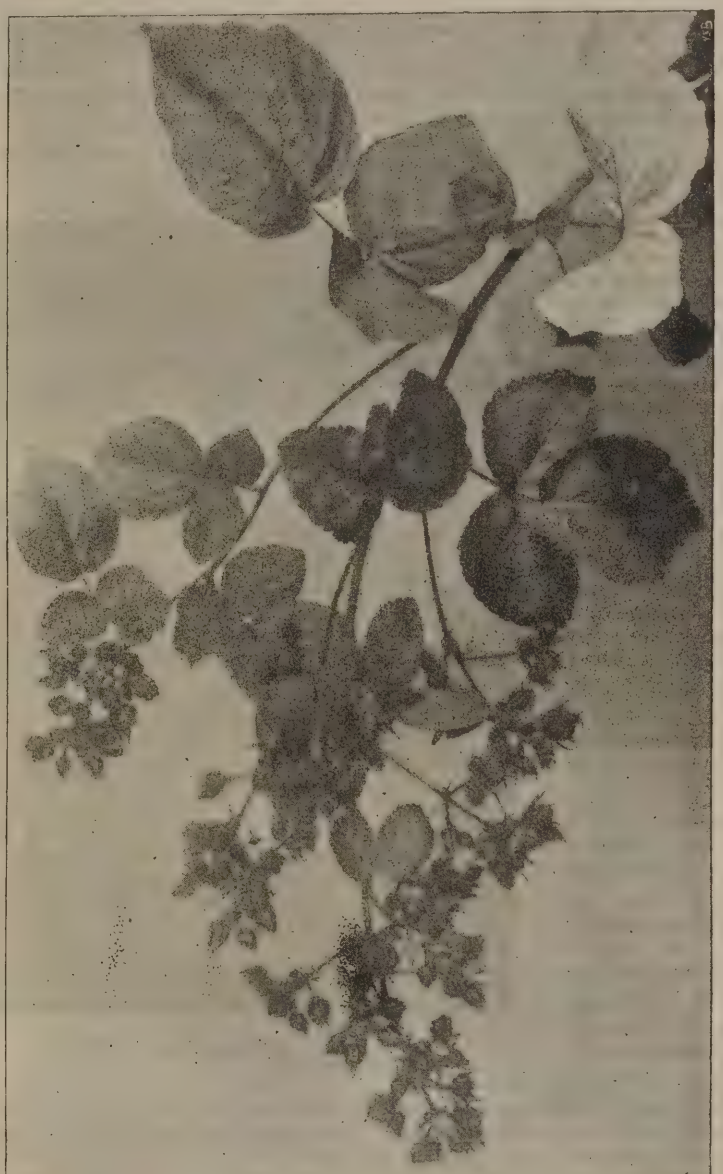
THE JAPANESE WINEBERRY.

This handsome Bramble is well worth a place in the garden, both on account of its attractive appearance and for the freedom with which it produces its pleasantly-flavoured fruit. The foliage is very ornamental, especially when the plants are in robust health, when they often throw up shoots 8 feet to 10 feet in height. The undersides of the leaves are almost white, being much the same tint as the lower sides of the foliage of Bocconia cordata, while the branches and fruit-clusters, as may be seen from the illustration, are covered with a dark-red, hairy, pubescence, that contrasts delightfully with the green leafage and its white reverse surface, as the shoots sway in the breezes. This Bramble is, as is shown in the accompanying illustration, a remarkably productive fruiter, and is most decorative when the sprays of fruit-clusters are studded with numerous berries ranging from pale yellow, where the red calyces have but just expanded, to the polished crimson of the ripe berries. The ripe fruit is agreeable in flavour, a certain sharp, brisk quality in the taste redeeming it from the insipidity with which many persons associate the Raspberry. On inquiry at a fruiterer's where it was displayed two years ago, I was told that there was a ready sale for the fruit, which was preferred by many of the customers to Raspberries for dessert, while it is very palatable when used for tarts. Last year, owing to the arid summer, well-nigh lost the Wineberry the reputation it had already gained, the fruit being a third of its usual size, and almost devoid of juice. Many individuals, tasting it for the first time, pronounced it valueless for all purposes, and I was informed that the sale had ceased to be remunerative. Doubtless in damp situations the berries retained their juiciness, but in the majority of cases it is probable that exposed and sunny sites had been selected for planting this Bramble.

In the hard winter of three years ago the long shoots of a line of plants growing on a hillside against a strained wire fence were killed by the frost, but, notwithstanding this, the bushes in question bore a heavy crop of fruit and fared no worse than did Raspberries and even the Hazels in the hedgerows, the majority of whose succulent new growth was cut back.

The Japanese Wineberry (Rubus phœnicolasius) was introduced in the year 1877, but, up to the present time, has not been widely cultivated. As a decorative plant there can be no question of its value, and I believe it to be quite as hardy as the Raspberry.

T.



Japanese Wineberry (Rubus phœnicolasius).

Tufted Pansies.—These are rapidly increasing in variety, and many new ones displace many old ones. Far too many, however, are pretty only when set up in sprays, and give poor effects in the garden. A very striking one of the belted section is Recorder. It has flowers of cream centres, over which are a few dark lines, and a broad and very clearly-defined margin of bluish-purple. The belting is as well defined as in a show Pansy. Another, having a straw-yellow centre, with a broad margin of claret, is Peter Barr. The creamy-white centre in the one with the darker belting makes it the more effective variety.—D.

HIMALAYAN RHODODENDRONS.

Exclusive of the many hybrid Rhododendrons now in cultivation, the Himalayan species are nearly all desirable subjects for the greenhouse or conservatory, where in early summer their flowers make a gorgeous display. Some of them will survive the winter in different districts of England, but it is when treated as conservatory plants that they are seen to the greatest advantage. As a rule, the first of this class to open its blossoms is

R. argenteum or grande, a species of quite tree-like habit with oblong-shaped leaves, each often more than a foot in length, and very silvery on the undersides. The flowers of this are borne in huge densely-packed clusters, and when in the bud state they are of a deep pink tint, but after expansion they are almost white, with the exception of a crimson stain inside just at the bottom. This Rhododendron will in a greenhouse temperature frequently open its earliest blooms before February, and the flowers last a long time in perfection. The equally large

R. arboreum is also an early-flowering kind and one of the hardiest of the Himalayan class. In this species the colour of the flower varies from pale rose to deep scarlet-crimson, and a specimen of this last-mentioned hue is remarkably showy when laden with its large globular trusses of bloom. A near ally of this last, or probably a variety of it, is

R. nilagiricum, which has beautiful deep pink-coloured blossoms. Among the larger kinds mention must be made of the rather uncommon

R. Nuttalli, the individual blooms of which are very massive, but instead of being arranged in a closely-packed cluster they are usually disposed in a horizontal tier at the end of a branch. Their colour, a kind of creamy-white, is not so showy as that of many of the others, yet the plant forms such a stately specimen, and the blooms are so massive, that it ought to find a place in the most select collections of Rhododendrons. These latter remarks will also apply with equal force to

R. Falconeri, a species remarkable for its large and handsome foliage. The flowers of this are when first expanded of a greenish tint, but afterwards they become pure white, with the exception of a dark blotch in the throat. The largest flowers of all the Himalayan Rhododendrons are borne by

R. Aucklandi.—In this the individual blooms are saucer-shaped, sometimes as much as 6 inches in diameter and usually white, flushed with pink when fully expanded, but while opening tinged with green.

Among the most select sorts must be mentioned three very bright-flowered species—R fulgens, R. barbatum, and R. Thomsoni. Of these

R. fulgens forms a much-branched, rather globular bush, that under favourable conditions produces its blooms in great profusion. The flowers, which are borne in rounded clusters, are of a blood-red colour, and almost as shining as if varnished. It is quite hardy in most parts of England, but it cannot be depended upon to flower as well in the open ground as it will under glass.

R. barbatum forms a much larger specimen than the preceding, though the flowers are somewhat alike. The foliage of R. barbatum, however, is very distinct, not only from that of R. fulgens, but also from that of any other Rhododendron, the leaf-stalks being plentifully furnished with long, rigid dark-coloured hairs.

R. Thomsoni is a rather more erect-growing specimen than either of the preceding, but it does not attain the dimensions of R. barbatum. In this the foliage is roundish, quite smooth above and glaucous beneath.

R. Hodgsoni, rarely met with (and for which I have seen R. argenteum doing duty), bears flowers of a purplish-rose colour. The species, however, with the whitest leaves is R. niveum, the young foliage of which is entirely covered with a dazzling white tomentum, but as the leaves get older it is confined to the undersides, where, however, it remains conspicuous. It forms a free, much-branched bush, with very dense heads of purple blossoms, not remarkably showy, but conspicuous against the silvery foliage and quite distinct from those of the other Himalayan species.

R. Dalhousiæ produces beautiful primrose-coloured blossoms, but a well-furnished specimen is rarely met with, its style of growth being long and straggling. In its wild state it often occurs as an epiphyte. It has been employed with advantage for hybridising purposes, as by crossing with free, yet more compact-growing species the massive flowers have been preserved and a better habit of growth obtained.

A Himalayan Rhododendron (R. Falconeri).

R. campanulatum has pale lilac flowers, sparsely dotted with purple or rose-coloured spots.

The white-flowered Himalayan Rhododendrons are met with far more frequently than those with coloured blossoms, and have all been largely used for hybridising purposes. Among these may be noted

R. virgatum, the blooms of which are in some cases almost white, and in others of a delicate rose tint. It forms a dense twiggy little shrub, very pretty, but by no means showy compared with its larger brethren. The same remarks will apply to

D. glaucum, with thimble-shaped, purplish-pink blossoms, and remarkable for the glaucous hue which overspreads the foliage. R. anthopogon, with yellowish blossoms, and R. lepidotum, with flowers variable in colour, complete the list of these small alpine forms.

R. campylocarpum is a sturdy growing bush, something in the way of R. fulgens, but with clusters of bell-shaped primrose-coloured blossoms. It is a very pretty and distinct kind, the arrangement of the flowers as they are borne on rather long stalks being very different from that of most of the others. The last to mention of these Himalayan Rhododendrons is a group composed of the species R. cinnabarinum, R. Keysi, and R. blandfordiæflorum. The smallest flowers of this class are borne by

R. Keysi, the peculiarly-shaped blossoms being red and yellow in colour. It is a native of Bhotan, from whence it was introduced as long ago as 1851, but it is still a rare species, though very pretty and distinct. The best known, however, is

R. cinnabarinum, which is hardy in most parts of England, though even then it frequently fails to bloom in a satisfactory manner. Its nodding tubular-shaped blooms are borne half-a-dozen or so together in a drooping cluster. They are usually more or less of a cinnabar-red tipped with orange, but in this respect there is a good deal of difference in individuals. In R. Keysi the colouring is much the same, but the blooms are smaller, while

R. blandfordiæflorum is more in the way of R. cinnabarinum. In favoured spots along the south and west of England and the sister isle most of these Rhododendrons do well, but in a good many districts of England the young growths are very liable to injury from late spring frosts. When treated as conservatory plants, the most satisfactory way to grow them is to plant them out as in the temperate-house at Kew. In preparing a bed for their reception, it should be thoroughly well drained. In planting the specimens their ultimate height and size should be borne in mind to prevent as far as possible the need for rearranging the plants after they have grown for a year or two. R. Dalhousiæ, which is a shallow and by no means vigorous-rooting subject, succeeds best if some broken charcoal and pieces of sandstone are mixed with the soil in which it is planted. The compost for Rhododendrons should consist of rough fibrous peat, with an admixture of sand, turfy loam, and leaf-mould. They will also do well in peat and sand alone, but whatever is used, it must be such as will remain sweet and wholesome for a long time. H.

TREATMENT OF A NORTH BANK.

After reading some of Mrs. Robert Jocelyn's papers in Gardening, I should like to take the liberty of asking her if she could give me any suggestions for a bank that I should prefer to look attractive? It faces nearly due north, and is surmounted by a house, which effectually keeps the sun off it after 11 a.m. The bank is about 30 yards long, rises about 6 feet in 14 feet, has a clay subsoil, and is divided by steps leading to the house. It is situated in South Yorkshire, where the atmosphere is not of the clearest.—C. B.

*** If "C. B.'s" bank belonged to me I should certainly plant it with Rhododendrons. Nothing can be more attractive than a good collection of these, and there are so many beautiful and free-flowering ones that it is difficult to know which to admit. The great thing for a good display of bloom is to get those which flower at the same time: and I will name a few which are neither very early nor very late flowering, and which are free-flowering, and have a good growth as well as splendid trusses of bloom: Alexander, Dancer, Barclayana, Fleur de Marie, Helen Waterer, Lady Frances Crossley, Lord Ongley, Marchioness of Lansdowne, Mrs. Charles Leaf, Mrs. Milner, Lalla Rookh, Mrs. W. Agnew, Pelopidas, Sherwoodiana, Sigismund Rucker, Sir Humphrey de Trafford, Lady Eleanor Cathcart, and Lady Grenville, are all lovely shades of reds and pinks, and Fair Helen, Mrs. Russell Sturgis, and The Queen are good whites. Marie Stuart is a very pretty shade of heliotrope. I have seen all these both as old and young bushes, and seen amongst large collections I considered them the best, taking all points, such as growth, trusses of bloom, etc., into consideration. But if more were wanted, I could mention a great many more, which are nearly, if not quite, as good.

While the bushes are growing, it is a very good plan to underplant the whole bed they are in with white Arabis, which makes it a sheet of white bloom before the Rhododendrons come into flower, and at all times covers the surface of the soil with a carpet of green foliage. This grows well on a bank in any aspect.

If there is no peat in the soil already, if some

were added it would be so much better for the Rhododendrons, and I strongly recommend this to be done if possible. But if strong transplanted trees are purchased in the first instance, they will grow quite well in any ordinary soil. Do not get very large bushes, only be sure nice compact, transplanted ones are sent to you.

If "C. B." would like the bank to be gay at three different times of the year and in three different ways, after planting the Rhododendrons and Arabis put in Crocus bulbs 2 inches deep and 3 inches apart everywhere, excepting where the stems of the Rhododendrons and Arabis actually occupy the border. They will fight their own way through the thick growth of the Arabis when that thick growth succeeds the young Arabis plants at first planted (I should plant them about 18 inches apart), and the Arabis on its part will hold its own against the Crocuses. After several years the Rhododendrons will hold their own so effectually they will nearly hide the Arabis and Crocuses, of course; but even then the peeps of them here and there which remain will be pretty, and for the first few years they will prove very effective.

Mrs. Robert Jocelyn.

ROSES.

Gloire de Dijon from Chepstow.—I enclose a small photograph of some Roses from my Maréchal Niel, not for any merit in it, as I could not take my camera near enough to get the flowers of any size, but I want your opinion on the flowers. The plant is in a greenhouse, and the first year nearly failed, making no growth and being badly mildewed. We pruned it heavily late in the autumn. It grew enormously, covering the roof of the house with long branches 20 feet long, and I have had off it 176 flowers, the greater number very large, and I think you will consider them well shaped. Do you not think it good, as last autumn it was one stem of 4 feet high, and miserable at that? It is in a hole in a paved floor, on made ground of rubbish, as well as I can remember. Please give me your opinion about it in Gardening?—G. Skirrow. [*The Roses were very fine.*—Ed.]

Shrivelled Rose-leaves.—In examining the Rose-leaves for insect pests, I find a great many shrivelled, like enclosed, and with no insect to be found. I should like to know if it is harmful to the plant to remove them, as if one may, it makes it much easier to examine the plants next day for any further damage?—A. D.

*** Leaves deformed in this way are of no use, and may be picked off at once. It is caused by extremes in temperature. If the present summer weather continues they will soon lessen

W. A. Richardson flowers of poor colour.—"G. O." would like to know how to deepen the colour of a W. A. Richardson Rose which has become nearly white, and how to kill fly on it when the flowers are out?

*** You cannot deepen the colour of a William Allen Richardson Rose. It is solely owing to cold weather late last month. Under glass we seldom get many of the pale flowers. Several Roses vary very much with weather changes. Cut off the most forward flowers, and syringe in the ordinary way. You should never allow the fly to become prevalent, but take early measures.

Fragrant Roses. — Kindly inform me which of the following Rose-plants are fragrant? I also beg to ask you to kindly name others (Teas) that are fragrant in place of those you find not so?—Grace Darling, Anna Ollivier, Bridesmaid, Cleopatra, Corinna, Dr. Grill, Homer, Mme. Cusin, Mme. Chedane Guinoisseau, Mme. de Watteville, Maman Cochet, Clara Watson? And in those you add please avoid the following: La France, Viscount Folkestone, Gloire de Dijon, and Mrs. Jas. Wilson.—R. B.

*** Bridesmaid, Mme. de Watteville, and Mme. Cusin are the only really sweet-scented varieties you name. The two first those you wish us to avoid are Hybrid Teas. Nine other really sweet Tea-scented Roses may be found in Socrates, L'Idéal, Catherine Mermet, G. Nabonnand, Goubault, Comtesse Riza du Parc, Devoniensis, Bouquet d'Or, and Rubens.

Reine Marie Henriette Rose not flowering well.—I have a Reine Marie Henriette Rose which I have had eighteen months; it has never flowered, and hardly grown at all. Can you tell me what would be the best treatment?—Amateur.

*** It is strange that this very strong grower should not thrive with you. It flowers upon last season's wood, and you must grow it strongly to see its full beauty. Manure and water freely. You do not say if under glass or not; if under glass it may be very dry.

A FREE ROSE GARDEN.

The accompanying illustration shows a view of Rose pillars in an Essex garden. In this we see some of the grace and charm of the Rose treated as a climber, which was at one time more common than it is at present. There are a great number of Roses that lend themselves to this treatment now more than ever, the old climbing Roses being always numerous, but they are now being backed up by a splendid series of long-blooming climbing Teas which are more valuable still, and much in want of planting in simple ways like this about gardens to break up the level, monotonous tone of gardens and the chess-board appearance they usually have. Delightful wreaths and garlands of this sort were very much more frequent before everything was cleared away for the flatness and hardness of bedding out, and this way of treating Roses ought to be practised more than ever. They should be trained abundantly over well-formed pergolas, covered ways, trellises, and fences. In countries a little warmer than ours it is delightful to see what can be done with Roses as noble climbers. In Algeria we have seen the Teas running up trees and over mounds in the lovelist profusion, and all the largest flowers of the finest sorts, seeming as free in that country as the Monthly Rose is in the West of England. In our country we have to be a little more discriminating by reason of hard winters, but we have many Roses which will stand the test of our hardest winters, and there is little difficulty in getting good effect from the Rose as a bold grower, calculated better than anything else perhaps to break up the hardness and monotony which are so visible in nine gardens out of ten.

A garden of Roses.

Rose La France de '89.—What a pity this splendid Rose should have been burdened with such a name! It is what rosarians would term a massive Rose, and yet there is a distinct refinement about its large shell-like petals. The colour is a lovely clear rosy-red, exceedingly brilliant, and the foliage is extra large and distinct in colour. Altogether this is a superb variety for the garden.

Reve d'Or not flowering.—I have a Rêve d'Or Rose planted against my house in a south-western exposure. Last year it only produced three flowers, and that not till the end of September. This year it has shown no signs of blooming as yet. It was last year, and is this, very prolific in leaves. This year it shows a tendency to mildew. This may be caused by the proximity of a large Scotch Fir. Can you explain how the Rose is so unprolific in blooms?—J. T. Bird.

*** The Scotch Fir has no influence upon the mildew. Changes of temperature are the sole causes in your case. Syringe with insecticide advised in our issue for May 22nd. You do not say how you pruned Rêve d'Or. Let it grow at will, and there are few Roses so prolific of bloom; prune it, and you get ample growth with scarcely a flower.

Curious Roses. — "C. B. M." sends curious abnormal Rose flowers. In one case a White Banksian Rose has its outer petals light green, and in another case there are two centres to the bloom. Such freaks, however, occur from time to time in gardens.

FRUIT.

GRAPES IN THE OPEN AIR.

Many amateurs fail with the Grape-Vine in the open, and blame our variable climate. To a certain extent such is the case; but much may be done to assist the plants in maturing a fair crop, and at no great cost of labour. Overcrowding or neglect to thin lateral growths is the chief cause of failure; but this is a fault that can be remedied. Another is allowing all shoots to grow from the start, and, of course, this is closely related to overcrowding—in fact, is the beginning of the evil. We do not allow every shoot to mature under glass. At any rate, if we do, the crop is poor, the plant soon gives out, roots collapse, and what is termed shanking follows overcropping.

Varieties.

One of the best white Grapes is the one illustrated—the Sweetwater. This, given a little attention in its earlier stages on a good aspect, will ripen well, and the quality be little inferior to fruit grown under glass. Some of the Frontignan varieties do well on a warm south wall. I know some amateurs who do not care for them, as the berries are not large, but the flavour is all that one can desire. I do not advise them in any garden, unless ample attention can be given them during growth. The Sweetwater will stand rougher treatment,

The Sweetwater Grape in the open air.

and may therefore have the premier selection, if a good white is required. The Chasselas Vibert is a Sweetwater variety, and also excellent on a south-east or south wall. It is a very refreshing Grape, and early also. This is a little thicker in the skin than the older Sweetwater, and does not crack so soon in wet weather, and bears finer berries. With us it is very hardy and a free bearer. Another white variety is Royal Muscadine, but this is not so reliable on cold soils, or if not in a favourable postion it cannot be relied upon like the Sweetwater. Of black varieties, the best of all is doubtless the Black Cluster, which rarely fails to ripen in the most unfavourable autumns, and is a very sweet fruit. It is a great bearer—indeed, I place this before all others for fertility. The Black Hamburgh is at times grown in the open, but it is only in favourable situations that it does well, and needs a favourable autumn to perfect the berries. A Grape less known is the Cambridge Black, a hardy Grape, good on an east wall, and always reliable; one of the best croppers for outdoor culture. If Grapes are grown for ornament the Parsley-leaved and Purpurea (the Claret Vine) are most ornamental, and well worth space for their beautiful colours in the early autumn.

Culture.

To get the best results remove a good portion of the buds in the spring, as each spur or shoot shows three, often more, buds, and only one is needed. Retain the strongest just as growth commences. By the removal of these useless buds the ones retained get more support, the branches form earlier, and the Vines have a better chance to perfect the fruits. There is a great gain in an early set, and the earlier berries are formed the finer they are, and size is important. Another point is training the shoots retained. The aim should be always to get better wood than the preceding year's. To do this only strong leaders and spurs should be retained—of course, having regard to all parts of the wall being fairly well furnished with new growths. To make my note clear, much may be done when training Vines to evenly distribute new wood annually, and, if possible, to lay in terminal leaders from these shoots. The finest bunches are thus secured, and by cutting away old wood yearly a good percentage of new wood may be retained. Another item is thinning the bunches, and open-air Grapes well repay thinning. One can often do the work piecemeal, and even if it is not done so neatly as in the case of indoor ones, one may, with advantage, thin out the inside of the bunches and a few of the outer berries at the sides, leaving the bunch the full length, and not cutting the shoulders. Feeding is best done when the berries are set, and few manures are better than liquid-manure; failing this, a good fertiliser; but do not feed when berries are full-grown. This is soon ascertained by cutting a berry open. The seeds will be firm and hard, and will then be fully grown, and feeding should cease. W.

Vine-leaves diseased (*Perplexed*).—Although the leaf sent did not reveal the presence of mealy-bug, the whitened marks were very suspiciously like the excrement from this pest, otherwise the leaf was a healthy one on the Vine named. If the Grapes have got past the flowering period syringe the Vines vigorously every day during fine weather about 4 p.m. Be careful to use clean water. The syringing may somewhat spoil the bloom upon the berries, but it is the only way to keep the mealy-bug in check until the autumn when the leaves have fallen. The constant disturbing of the insects through syringing is all against their spreading over the whole of the Vines. Pot-Vines, well supplied with roots, may with safety be supplied with weak liquid-manure six days out of seven every time they require water. Top-dress the Vines with turfy loam and some good Vine manure. If the pots are already full, pile up an additional rim 2 inches high around the pot with thin turf, filling the inside with finer soil and artificial manure.

Quality in Strawberries for preserving.—In our anxiety for big things, the Strawberry included, I trust we shall not lose sight of our good preserving kinds, as though these are not large, they are good, and possess merits the larger kinds are deficient of. So far I have not yet found any variety to beat King of the Earlies. This is a small fruit of delicious flavour. It is of dwarf growth, and, like most of this section, produces a better crop the second year after planting. I think this is superior to the well-known Black Prince, a variety largely grown thirty years ago, but not so good a cropper as King of the Earlies. Some lovers of Strawberries object to these somewhat dark fruits when preserved, preferring a brighter colour with more acid flavour, and for this purpose the Grove End Scarlet, an old variety, cannot be beaten. This is a small bright red berry, and when cooked it preserves its shape and is much liked on that account. The same may be said of Vicomtesse H. de Thury, one of the best Strawberries grown. It is a splendid fruit when preserved—in fact, if only one Strawberry could be grown for eating and cooking I would give this the preference for its all-round excellence. An American variety, Crescent Seedling or Little Gem, is a very fine type for early use and cooking. Many like the Elton Pine for this purpose, and I do not know of any kind with better flavour or colour. The above I have found the best for the purpose named. I usually allow the plants two or three years' growth before discarding them, and in the case of varieties like Black Prince the plants are only kept clear of each other between the rows, as I find they suffer less in seasons of drought.—W.

AUTUMN STRAWBERRIES.

In not a few large establishments where an autumnal supply of fruit is required, the culture of late Strawberries is a special feature, and by a variety of means nice fruits are obtained not only during August, but September also. Old gardeners had not much choice so far as late sorts were concerned, the only two true reliable varieties then available for autumn fruiting being the Elton Pine and Frogmore Late Pine. Now, however, their name is legion, although I very much question if the two above-named sorts have yet been surpassed, all points considered. Frogmore Pine, an excellent flavoured Strawberry, and a connoisseur's fruit, in fact, requires good cultivation, but this it well repays, as the runners, although sometimes produced too late to make large plants the first season after planting, yield excellent crops the second year, and on extra rich, well-prepared ground sometimes the third. The same may be said of Elton Pine, as the north borders on which these late Strawberries are always grown retain moisture much better than ordinary exposed plots. In order to secure good autumn crops a row of stock plants is necessary, from which all bloom-trusses are removed as soon as they appear, as the late date at which these sorts fruit, together with the necessity for netting the beds over to protect from birds, renders it difficult to obtain runners from bearing beds capable of making much headway before winter sets in.

The most successful grower of late Strawberries I ever knew used to peg the runners from his rows of stock plants which grew on espalier borders into the soil, his contention being that root dryness was not to be feared as when pots were used, and that the plants did not suffer from a little delay in planting, as rooting could still go on unmolested, and with careful lifting with a trowel, no material check was given. Deep trenching, except occasionally, and with a view to placing the semi-exhausted soil in the bottom, is not necessary, nor, indeed, is it good practice any more than it is with ordinary summer Strawberries, as, when the manure is buried so deeply, the roots do not reach it the first season, which is what is wanted, as mulching the surface with rich manure the second year will afford all needful nourishment, the Strawberry being, to a very great extent, a surface rooter. I choose a plot in pretty good heart, and dig one spit deep only, keeping a good trench and well treading in the same as the work proceeds. These late Strawberries are much improved both in size and quality if just at the colouring stage, and previous to putting on the nets, the runners are all removed. For a September supply, recourse must be had to planting out stools of early varieties which have been forced and gradually hardened off in frames. This hardening off is very important, as plants that are turned out suddenly from a warm house into open yards and thereby severely checked, cannot be expected to do double duty the same season.

A flat border is much better than a slanting one, retaining moisture better, and even then

attention must be paid to artificial watering, mulching also being very important. The soil must be thoroughly well rammed round the balls, and a slight basin left for the reception of water, which, when the fruit is swelling, must be of a manurial character. A word in conclusion as to sorts. Noble and Keen's Seedling would succeed well enough in September so far, but then being both soft-fleshed Strawberries, rot would set in in wet autumns. Probably Royal Sovereign would be excellent, having firmness as well as earliness in its favour. Mulching with clean litter and propping up the fruit to the sun are necessary. J.

Peaches unsatisfactory (*W. J. S.*).—The fungus on the leaves and fruit is partly owing to the roots being in too rich a rooting medium and partly to mildew, of which there are distinct traces. Mildew is more often caused by a direct draught of cold air early in the season than from any other reason. You do not say how long the trees have been planted. When planting Pear-trees either inside or out-of-doors, one of the greatest mistakes made is that of giving them too rich a soil to grow in. Ordinary garden soil, with fresh loam to start the roots in and a supply of manure afterwards, either in a solid or liquid form, is sufficient when the state of growth has been decided by the trees themselves. As far as the roots of the trees and the soil in which they are growing, you can do nothing now until the end of September, when they should be lifted, removing the concrete part. Give abundance of drainage to avoid stagnation of moisture about the roots. The soil in the border ought not to be more than 2 feet 6 inches deep, with 9 inches of broken bricks for drainage below. In the meantime syringe the trees with Quassia-chips, Gishurst compound, or soft-soap and sulphur, putting a handful of the latter into a three-gallon can of water, in which a lump of soft-soap the size of a Walnut has been dissolved. The former ought to be used of the strength named on the boxes containing the ingredients. Syringe the trees about 5 p.m., and next morning thoroughly cleanse them with tepid clean water. Do not syringe them again for several days. Avoid draughts of air, ventilating the house only at the top for a week or two.

Brown Hellebore for Gooseberry caterpillars.—I often see inquiries about Gooseberry caterpillars. I have not used anything but brown Hellebore for many years, and I never knew it to fail. I use 2 oz. to 5 gallons of water, well stirred when using the syringe. I thought this recipe might be useful to some of your readers.—C. Mills, *Billingshurst*.

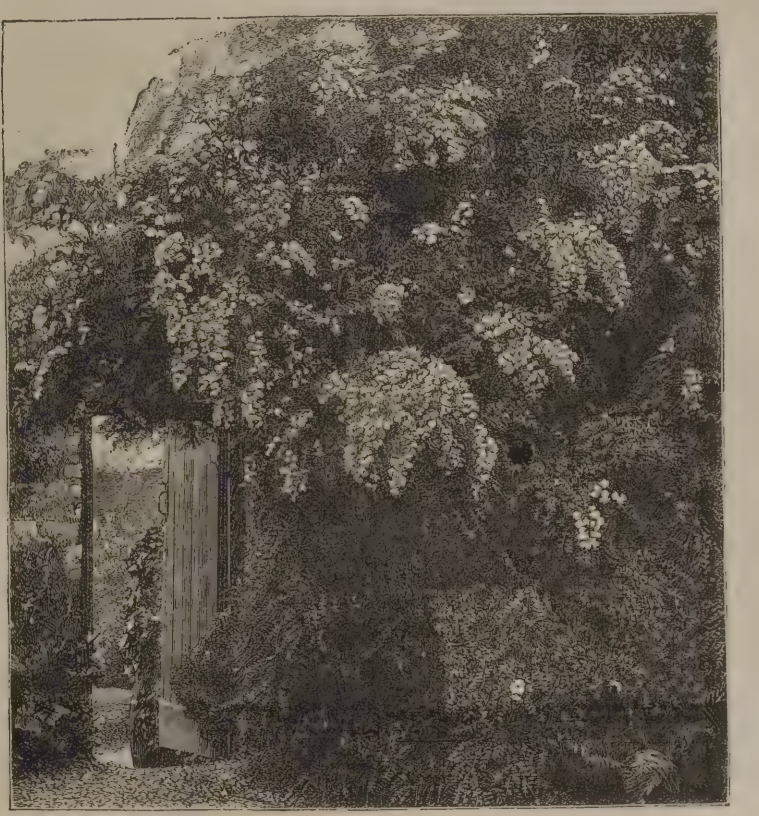
HARDY PLANTS IN POTS.

Among the hardy plants potted up last autumn for use at different times and for different purposes, were Daffodils, Campanulas, Ernest Ladhams and Her Majesty Pinks, as well as Carnations in variety, and it is not too much to say that batches of plants of this character are a wonderful boon to gardeners where the demand both for flowers and plants is large, and yet the supply of glass is limited. True, they cannot when used in this way be pronounced perfectly hardy, but the stacking away in cold pits or improvised frames is really more a question of saving the pot than the plant, and they may be packed as tightly as possible, using a bit of Fern between, and 2 inches of Cocoa-fibre or rough leaf-soil to protect the surface soil. Perhaps the best things are the Pinks above named, Carnation Uriah Pike, the white form of Campanula persicifolia (single), and the variegated forms of Funkia ovata. The contrast in the latter case between the really bright variegation and the very handsome spikes of lilac-coloured flowers is very striking. Francoa ramosa—one of the most graceful of pot plants all through the summer months—can be kept very well through the winter in a cold pit from which frost is just excluded, not that but it will stand a little frost, but the damp following after only a slight visitation is apt to cause a rotting at the collar. A small collection of Phloxes in variety for pot work will furnish a bright and enduring display, especially if the selection is made respectively from the early and late-flowering sections. Some of the Starworts are very well adapted for pots. I have used A. acris, A. ptarmicoides, A. dumosus, A. Linosyris, and A. ericoides, and there are doubtless others equally good. Among plants of fairly tall habit and single-stemmed that mix well with more bushy things are Galtonia candicans and the new varieties of Lobelia fulgens. In all cases where hardy plants used in this way exhaust soil rapidly—as the Polyanthus are of dense rooting habit, as Starworts, or moisture-loving, as Phloxes—they will require liberal feeding. So soon as they begin to move in the spring, mild doses of manure-water may be occasionally given, and it should be increased both in strength and frequency as the flowers are formed and developed. Cow-manure is about the best and safest stimulant. P. T. W.

TREES AND SHRUBS.

SPIRÆA FLAGELLIFORMIS.

While the different Spiræas include among their number some of our very finest flowering shrubs, they are so numerous that in most cases a rigid selection is necessary. If restricted, however, to a dozen distinct forms, S. flagelliformis must have a place, as it is a very beautiful free-blooming kind, and one that does not flower till many others are past. This Spiræa is in style of growth very different from most members of the genus, the principal shoots being more or less upright, while the growth is quite spreading, and the long slender shoots, which droop gracefully on all sides, are thickly studded for some distance with little flat clusters of white blossoms. When at their best the longest shoots form veritable floral wreaths. Though so long known in gardens and nurseries as S. flagelliformis, it is now considered to be synonymous with S. canescens, or at all events but a variety thereof. S. canescens, which is a native of the Himalayas, is a somewhat variable species, and therefore possesses a considerable list of synonyms. Names under which it may be met with are S. cuneifolia, S. flagellaris, S. hypericifolia crenata, S. nutans, S. ruscifolia, S. nepalensis, S. rhamnifolia, and others. It is, as a rule, at its best from the end of June onwards, and in good soil, where it does not suffer from drought, this Spiræa will continue to bloom for a considerable time. Like all the others, it needs to be planted in good deep soil that is not parched up at any time, for though it will hold its own and flower freely under adverse conditions, yet the contrast between a plant so situated and one more liberally treated is so great that the two may be taken as belonging to distinct species. It should, if possible, be planted where there is ample space for the development of its somewhat spreading branches, as a great deal of the beauty of the specimen depends upon the long arching shoots being allowed to grow unfettered, for they then dispose themselves in a very graceful manner. One of the most beautiful Spiræas of the family is S. ariæfolia, of which an illustration was given in Gardening of last week.



Spiræa flagelliformis.

BLUE FLOWERS.

Plants that produce red, yellow, or white flowers are very numerous, as all garden lovers know; but those that bear blue blossoms are by no means so plentiful, but still there are quite enough of them to furnish a large garden, if desired, and they present, perhaps, a greater variety of form in the blossoms than those of other hues. For forming close, neat patches of leaves and blossoms, scarcely rising above the surface of the ground, there are Gentiana acaulis for a good rich loamy soil, and four pretty creeping Veronicas for rockeries and dry soils, V. prostrata, V. rupestris, V. taurica, and V. repens, the last requiring little more moisture than the others. For dry soils or chalk Thymus azureus is a beautiful native dwarf evergreen creeping plant, scarcely rising from the ground. There are two species or varieties, one with very close-growing foliage and little round trusses of azure-blue flowers, with a white eye, and about 1½ inches high, the other a little more lax in growth, and taller, flowers purplish-blue, with pale blue eye, occasionally purplish-rose. For later flowering the dwarfer Lobelias are useful. Very early flowering bulbs are Scilla sibirica, S. amœna, S. bifolia, S taurica, and S. italica, Chionodoxa Luciliæ, and Puschkinia scilloides. Next come the Iris pumila cœrulea, and the blue varieties of our native Wood Hyacinth (Scilla nutans), Scilla campanulata, the Grape Hyacinths, Muscari botryoides cœruleum, M. atlanticum, M. armeniacum, and M. commutatum, and the Feather Hyacinths, M. racemosum, and M. Szovitzianum. Beautiful spring flowers are the blue Hepaticas, H. angulosa, H. triloba, double and

single. Amongst the florists' Anemones may be found some with blue flowers, mostly, however, of a purple or lilac shade, and amongst Hyacinths there are many blue varieties. Nemophila insignis sown in autumn makes a sheet of blue in spring, and also does well when sown early in spring. Lithospermum prostratum is a beautiful blue flower, and blue Pansies and Violets are a host in themselves. The Forget-me-nots are good blue flowers — Myosotis sylvatica, dissitiflora, azorica, and palustris semperflorens. Other good blue flowers under a foot high are Gentiana cruciata and Gentiana gelida, Campanula cæspitosa, C. turbinata, C. pulla, Aster alpinus, Anemone apennina, A. Robinsoni, and Prunella grandiflora. Of taller plants there are the Columbines, Aquilegia glandulosa, and A. cœrulea, also A. vulgaris, which produces an occasional plant with blue flowers. The purest blues are to be found in the Larkspurs; anyone fond of blue flowers should grow a large selection of the florists' section of these. The annual varieties also produce many blue kinds.

Lupinus polyphyllus amongst the perennials and Hartwegi amongst annuals are good sorts. The Campanulas are a blue family, sporting into white, rose, and purple-flowered varieties. Amongst the Pentstemons there are several good blue kinds: Pentstemon glaber, P. zananthus, P. Brandegei, P. azureus, P. Jaffrayanus, P. heterophyllus, P. speciosus, and the blue kinds of P. ovatus. There are many blue kinds amongst the Irises: I. reticulata, orientalis, longifolia, and the blue varieties of sibirica. Grand Celeste is a good blue English Iris, and there are many blue kinds among the Spanish Iris. Of Iris pallida, Augustus, azureus, and Celeste are beautiful blue varieties. Good blue border flowers are Gentiana asclepiadea, Linum narbonnense, Polemonium cœruleum, Tradescantia virginica, Commelina cœlestis, Allinum azureum, Centaurea montana, Libertia aurea, Plumbago Larpentæ, Mertensia sibirica, Lindelophia spectabilis, and Veronica subsessilis. Of the Aconitums there is a blue and white one, but as the plant is poisonous it should be placed in the garden with caution. Of bedding plants (so called), after the Lobelias, Salvia patens is by far the best. The Ageratums are free bloomers, but more lavender than blue. Of annuals or plants which may be treated as such, Anagallis grandiflora Phillipsi is a good blue half-hardy kind. Browallia elata grandiflora is also good. Of hardy annuals the best are Linum grandiflorum, Centaurea cyanus (the common Cornflower), Convolvulus minor, and Whitlavia grandiflora. Of a more lavender or purple shade of blue are Kaulfussia amelloides, Brachycome iberidifolia, and Nolana atriplicifolia; and N. lanceolata (these creep along the ground), Diliscus cœruleus, and Asperula azurea setosa. Fine blue-flowered bulbs are Camassia esculenta and Agapanthus umbellatus, both require a sunny, sheltered place in rich, well-drained soil. Stokesia cyanea and Platycodon autumnale may be recommended for the same position. Vinca major produces slaty-blue flowers in autumn and spring, and during mild winters will grow in any shady place, and flower well at the foot of a wall facing north. Ceanothus azureus is a good flowering shrub for a very sheltered spot. For the rougher parts of the garden our native Germander Speedwell makes a mass of blue in out-of-the-way corners and under trees on Grass where the sun gets at it. The Alkanets are strong-growing plants of the Forget-me-not family. Tropæoleum azureum is a hardy climber from the island of Chiloe, in South America. It does not seem much known, although introduced many years ago. Its native climate is a damp one. H. B.

A white Columbine.—I saw recently in a private garden at Reigate many plants blooming most profusely of a pure white single-flowered Columbine. It was only the garden form, but, whilst having good habit and large flowers, these latter lacked the long spurs which always are such ornaments to the flowers of the best species. But as none of these or their hybrids give us a pure white variety, it is gratifying to know that there is in cultivation, though I fear not in commerce, such a charming white as the one referred to. It is a pity Columbines, especially of the beautiful hybrids of chrysantha, cœrulea, and californica, are not common in gardens, yet they rank amongst the most pleasing of hardy flowers.—A.

OUTDOOR PLANTS.

THE LION'S-TAIL (LEONURUS).

Of the Leonuri, L. Leonitis (the Lion's-tail) is the best-known variety, throwing up spikes of bright red flowers during the summer. In the south-west of England it blooms profusely, but being a denizen of the Cape of Good Hope it succeeds but indifferently in the open air under

The Lion's-tail (Leonurus Leonitis). Engraved from a photograph by Miss Willmott, Great Warley.

less-favoured climatic conditions than are experienced in the moist atmosphere of the shores along which the slow tide of the warm Gulf Stream flows. Where, however, it will not thrive in the open, it will be found valuable if grown in pots for the greenhouse. Where it flourishes in the garden no association is better fitted for it than that of the finer foliage plants, which, with their grace of outline, show off its charms to the best effect. Others of the Leonuri are natives of Siberia, and one, L. cardiaca, is a British plant. L. Leonitis is easily raised from cuttings raised in heat during the early spring. S. W. F.

Christmas Roses.—What soil, position, protection during winter, and general treatment do Christmas Roses require to make them grow well for cutting?—E. B. S.

*** Where the soil is naturally sandy loam Christmas Roses thrive without any special attention beyond deeply digging and well manuring the soil before planting. A position facing east if backed by a wall is quite the right aspect. A cold-frame or hand-lights placed over the clumps at the end of October will afford all the necessary protection for keeping the blooms clean. Should the weather be hot and dry during May and June while the plants are making their growth, copious supplies of weak liquid-manure will be a decided advantage in promoting a free and luxurious growth. If the plants are neglected in this way the thick, fleshy roots suffer, and the plants generally decline in vigour. A mulching 3 inches thick of horse-manure, put out in April, will do much towards conserving the moisture in the soil. If the soil is not suitable, being of a stiff, retentive character, it should be removed to the depth of 2 feet, breaking up the bottom to aid the quick percolation of water from heavy rains. Replace the soil with other lighter in character, such as road-side refuse, leaf-mould, peat, and decayed vegetable-refuse. Mix all these ingredients with ordinary garden soil light in character. The first week in March, when the plants are commencing to make new leaves, is the best time to replant.

NOTES ON THE FLOWER GARDEN.

BEGONIAS.

Why is it that the pink shades in Tuberous Begonias are as a rule by far the strongest growers? A vigorous constitution and an upright habit are essential features in all Tuberous Begonias that are grown specially for outdoor work, ranking before any special features in the flower itself, for varieties that grow kindly and well and hold the flowers well up are, although the flowers may be small, much more acceptable than those with larger blooms of drooping habit and with perhaps a somewhat miffy constitution. Given a thoroughly good strain, sound judgment must be displayed in the planting arrangements to allow, on the one hand, for the perfect development of individual plants, and at the same time, if they are thinly set, to provide a good carpet, as a large amount of bare soil all through the season is not in accordance with good flower gardening.

PENTSTEMONS.

No one who has seen and admired the exceptionally lovely flowers to be found among the newer varieties of Pentstemons can fail to be well pleased at the prominent position they are taking in the summer flower garden. Whether grouped together in a large bed or in bold clumps on a dwarfer carpet, they are equally fine, and a prompt removal of the centre spike as soon as the flowers are inclined to drop leads to the quick development of the many side spikes, which, although not individually so fine give as a whole a splendid display. Occasional beds, either on turf or in the strictly formal garden, will be very acceptable, and in the latter case will break up the flat surface that often prevails. A suggestion in connection with their culture that may be worth consideration is that when used alone the various shades can be mixed together, but when planted in groups on the dwarf carpet decided colours should be employed in white, crimson, purple, or scarlet, as circumstances may require. I know of no better carpet plants for them than the dwarfest of the Tufted Pansies. Let me recommend, for instance, Newbery Gem, or the newer varieties Lord Mayor or President Carnot, on an undergrowth of Pansy Violetta.

PETUNIAS.

It is rather a pity that Petunias are not more frequently seen in the flower garden. There was a very fine purple of splendid habit that was grown some years ago that made an exceptionally fine display for large beds, relieved by occasional dot plants of the white-flowered Marguerite or some well-grown Eucalyptus globulus. The newer strains are certainly very fine in the individual flowers, but the majority are shot blooms, and where a glowing mass of colour is required, are not to be compared to a thoroughly good self. For large outlying beds batches of seedlings of a strong growing strain can be used, and Petunias possess the merit of being among the most enduring of annuals. For vases or window-boxes they are also exceptionally good, and if it is determined to use them alone without the aid of other plants, the centres and backs can be raised to the necessary height by the insertion of sundry twiggy boughs on which the plants will run. If seedlings are required, it is advisable to sow fairly early, not

later than, say, the middle of March, and the seedlings should be pricked off into frames or boxes as soon as they can be handled to ensure good plants.

Uncommon bedding plants—Centaureas.

Until flower-gardeners realised the truth of the advice that the desired end might be obtained by sowing the white Centaureas early and growing them on in this way, the acquisition of a big stock was not an easy matter. The best results from cuttings are obtained if they are inserted singly in 2½-inch pots in a compost of one half leaf-soil and one half ordinary road sand. They do best on a dry shelf in a cool house, and all through the winter only just enough water should be given to prevent shrivelling. For several years now the cutting system has been abandoned and I sow about the last week in January, growing on quickly and shifting as advised for Petunias as early as possible. It may not be generally known that Centaurea ragusina is very nearly hardy. Where the beds wholly or partially filled with it are not required for other things an effort may be made to save it. Give a good thick mulch of half-rotten leaves before the approach of severe frost.

Cuphea platycentra.

This is a very pretty thing, and, flowering as it does freely and continuously, it is a pity it is not oftener seen in the flower-garden. I remember many years ago a mixture of this and Heliotrope which had a very pretty effect, and it makes a capital carpet for such strong growing Fuchsias and Begonias in colours that will contrast nicely with it. It strikes readily from cuttings and will keep well through the winter.

Gazania splendens.

A capital dry weather and dry border plant that will grow and flower well under adverse conditions, although I am inclined to think its day in the flower garden is nearly over, for the reason that the predominating shade (yellow) to be found in its flowers is also to the fore in some of the newer Tropæolums, and that the latter are equally good dry weather plants. The Tropæolum flowers are always expanded (the absence of this characteristic is a drawback to the Gazania) and the Tropæolums are more easily grown.

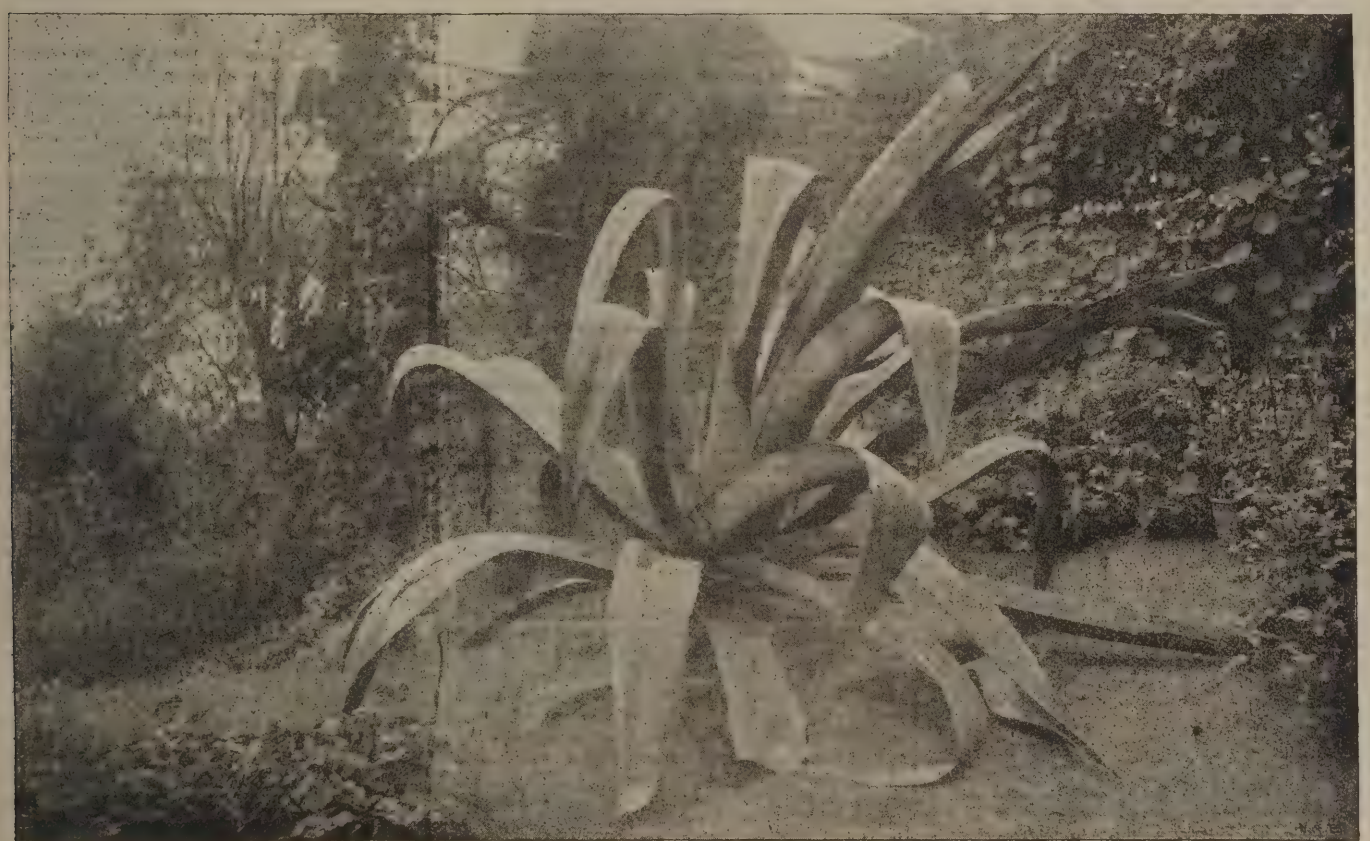
Maurandya Barclayana

possesses a shade to be found in hardly any other outdoor flowers and is valuable on that account. I remember in the old days of pile beds it used to be a great favourite for the outer row to hang down over the piles either used alone or with alternate plants of the white trailing Campanula. Like all plants of this character that are treated as annuals and obtained from seed, it should have a sufficiently long growing season to secure good plants. E.

THE AMERICAN ALOE.

In Devon and Cornwall this handsome Agave succeeds admirably in the open air, and, though valuable when planted in tubs and set in the open during the summer after a winter spent beneath the shelter of a glass roof—the sole method of cultivation possible in more northerly portions of the British Isles—it is only when established in the garden that the full value of these splendid plants is realised. The strong curves of the massive leaves are themselves a delight; the cool, grey-green, that in the torrid climes where this Aloe is at home seems but to radiate heat, and strikes no note of contrast to the prevailing monotony of the sun-scorched landscape, is never seen to such advantage as when thrown into relief by the fresh verdure, ranging from brightest emerald, through infinite gradations of tender green, to the almost purple of sombre Yew met with in our English gardens. Here, on the south-western coast, the eye falls upon the glaucous tints with a sense of satisfaction—of appreciation of the colour scheme in which it is such an important note. Many are the fine specimens of this Aloe and its variegated variety that I have seen growing along the southern shores of Devon and Cornwall, while at Tresco, in the Isles of Scilly, it flourishes in abundance; but never have I met with one more happily situated or of grander dimensions than that in the beautiful garden of Darwen Bank, Torquay, depicted in the accompanying illustration. Some may think that the American Aloe reaches the zenith of its perfection only when it has thrown up its tall, candelabrum-like flower-head, often 20 feet to 30 feet in height. Perhaps the saying that "familiarity breeds contempt" may, in part, account for the fact that its quaint inflorescence possesses few charms for the writer of this note, but, personally, I must confess that such final efforts in the specimen here alluded to—the "Swan-song" of the Aloe—would be a sight that I should reluctantly witness. Situated as it is, in front of hanging trails of Muhlenbeckia, and backed by the pink shafts of the Scotch Firs, through which gleam the waters of the beautiful bay, warm with the last caress of the Gulf Stream ere it leaves our island shores, it is an object of stately grace, with its huge sweeping leaves, 8 feet long and over a foot in breadth, that once lost could not be replaced except after a period of many years. Where such Aloes exist, on a site that would lose so much by their disappearance, it would be well to nip any attempt at flowering in the bud, and to so endeavour to preserve such distinctive features from destruction.

S. W. F., *Torquay.*



Aloe at Darwen Bank, Torquay.

Planting a north-east border.—Would you kindly tell me the best way of treating a border with a north-east aspect, situated between a high hedge of Laurels and the house? The soil is clay, and the border slopes considerably. It gets a good deal of the morning sun. I should like to plant it with hardy perennials, but I do not want anything expensive. Would German Irises be likely to succeed in such a position? Would you also be so good as to inform me whether it is advisable to leave Tulips in the beds all the year round? Or should they be taken up and dried when the leaves die?—F. English, *Somerset.*

*** We do not recommend German Irises for a border which slopes considerably. Nor, facing north-east, should we recommend perennials. Why not plant it with Rhododendrons, since they would grow well in it and like the aspect? There are so many lovely shades of crimsons, pinks, and whites. They can be bought very reasonably, and a good collection is most interesting. An under-planting of London Pride clothes the ground well and effectively while the Rhododendrons are young. Tulips can be left in the ground all the year undisturbed; but, if so, let the leaves die away.

INDOOR PLANTS.

CALCEOLARIAS, HERBACEOUS AND SHRUBBY.

These charming and free-flowering greenhouse plants are, as denoted by the head line, represented by two sections, the first-named (herbaceous) bearing by far the most showy flowers; the latter (shrubby) give a longer succession of bloom. The original species from which both have been raised came from Chili and Peru. Both can be obtained from either seeds or cuttings. The herbaceous kinds have, however, been so much improved in recent years that a good strain of seed may be relied on, if the plants are well managed, to afford flowers sufficiently attractive for all requirements, both in form and colour. The seeds of these (herbaceous kinds) should be sown about the middle or end of July in shallow pans, well drained, and filled with finely-sifted loam, to which one-fifth of leaf-mould and a little sand have been added. Make the surface of the soil smooth, and water lightly with a fine-rosed pot to fill up the interstices, otherwise the seed being very small will be liable to be covered too deeply. Allow a day before sowing the seed, and then sow it, but not too thickly. Cover the seed very slightly, and stand in a frame and shade the surface of the pans from the sun with a sheet of newspaper, so as to avoid the need of giving much more water until the seedlings are up. Immediately they appear above the soil, keep close to the glass, shading when the sun comes on them, and giving sufficient water to keep the soil fairly damp. Give some air in the daytime, and keep the atmosphere around them moderately moist. When they are large enough to handle, pick the little plants off 2 inches apart in pans or boxes, in soil like that in which the seed was sown, and treat as before, with the exception that owing to the sun's waning influence in autumn further shading will be unnecessary. When the leaves are about an inch long move the plants singly into 3-inch or 4-inch pots. Keep them growing through the winter gently, and for this purpose a night temperature of about 45 degs. will be sufficient. Give air daily in mild weather, and stand the pots on some fine gravel or fine coal-ashes (spread on the stage if in a greenhouse), as the plants do not like an over dry atmosphere around them Never allow the soil in which they are growing to get dry, and on the other hand do not overwater—a uniform moist condition is what is needed. About the end of February, or the beginning of March, move them into 8-inch pots, using the soil then in a somewhat more lumpy condition, and giving with this one-sixth of rotten manure in addition to leaf-mould and sharp silver-sand as before. With the natural increase of warmth on sunny days give a little more air, but draughts must be avoided or the leaves will be injured. Keep the night temperature about the same as hitherto. The plants should now move along fast. On bright hot days a thin shade should be used over the glass for awhile to temper the fierce rays of the sun, and the plants should be dewed overhead with clean, soft water from the syringe each afternoon when the house is closed up for the night. As the roots get well hold of the soil give weak sheep-manure or soot-water once or twice a week. Calceolarias are, when in health, gross feeders, and like liquid stimulants, if given as just stated in a weak state. Continue to treat in this way, and put a thin stick to each flower-spike as it gets long enough to require support. Keep on shading as required when the blooms are open, and during which time also give more air. When the flowering is over, those the seed of which it is desired to save must be well attended to until it is ripe, when it may be gathered, and the old plants can be discarded. Where the

Shrubby kinds are raised from seed, the treatment should be similar to that which has been described for the herbaceous varieties, but being less vigorous growers, they do not need so much root-room the first year as the strongest of the herbaceous sorts. Cuttings may be put in at any time during the spring or autumn—about March is a very good time. Take off for this purpose the young side shoots while the wood is soft, and they consist of about three joints to each shoot. Remove the lower pair of leaves, and put four or five of the cuttings together in 6-inch pots filled with sand; keep quite moderately close and shaded in a temperature of about 50 degs. They will root in two or three weeks' time, when give more air and pot off singly into 4-inch pots, drained, and filled with soil similar to that advised for the herbaceous kinds. The after treatment will also be similar, except that when the plants begin to move freely the leading shoots should be stopped to cause them to grow bushy. When the shoots thus induced to break are large enough each one should be tied out to a small stake so as to give each one support and space to grow freely. As soon as the soil in the pots is moderately well filled with roots, move the plants on into 7-inch or 8-inch pots, and give plenty of air. They will flower nicely through the latter part of the summer, and to help them give weak manure-water once or twice a week. After blooming the shoots should be well-shortened back, and the plants given ordinary greenhouse treatment through the autumn and winter. Early in spring give pots 2 inches or 3 inches larger in size—in repotting remove a portion of the old soil, and replace it around the roots with some that is good and rich. Tie the shoots well out as they advance, and treat in other respects as in the previous spring. This season they will make good-sized flowering specimens and will be very useful for conservatory decoration. They may be kept on for another season or two if treated as advised, but a stock of young plants should always be in hand. Calceolarias are not much troubled with insects, except green-fly, which is very partial to them. Fumigate slightly and frequently with Tobacco, and wherever possible destroy the flies by sponging or syringing. H. B.

ALLAMANDAS.

Allamandas are amongst the most beautiful of stove-climbing plants, well repaying any extra pains which may be bestowed on their culture. Their noble foliage, combined with the size and richness of the flowers, renders them indispensable wherever stove plants are grown. Moreover, although naturally of a climbing habit of growth, they may, if the growths are pinched, be grown in bush form, and prove most useful for conservatory or ordinary decoration. They are most at home when planted out at the end of a warm, moist stove, and the shoots trained along wires tolerably close to the roof glass, and unshaded. Allamandas will stand as much sun as Crotons, the leaves seldom scorching if the glass is of good quality. When shaded—as they sometimes have to be on account of other subjects which occupy the same house—the new shoots are long-jointed and soft, and bloom correspondingly scarce. Allamandas being gross feeders, a good holding loam, with a fair addition of decayed manure, is the best rooting medium, liquid-manure of medium strength being necessary every other day in the case of large specimens in pots. When grown on balloon-trellises for exhibition, the best plan is to stand the plants in a light, roomy place, and to allow the growth full liberty until the bloom-buds form, when it should be trained evenly over the surface. Although Allamandas may be propagated at any time when young shoots are obtainable, the best time is in spring, the plants then having an opportunity of growing into good-sized specimens the first summer. The cuttings strike most readily inserted singly in small pots in finely-sifted loam, leaf-mould, and silver-sand, and placed under a handlight or bell-glass in a gentle bottom-heat. When rooted, gradually inure them to more light and air and give a shift into 6-inch pots. A night temperature of 70 degs., with a rise of 10 degs. or 15 degs. by sunheat, will suit them well, closing early and syringing overhead each afternoon. The points of the shoots must be pinched out to induce the lower eyes to break. By the end of June these pots will be filled with roots, and a shift into others 2 inches or 3 inches larger will be necessary, this time breaking the soil into pieces the size of Walnuts and potting firmly. A few neat sticks will now be needed to support the shoots, which may again be pinched for the last time. The same treatment as regards heat, air, and moisture should be continued till the end of September, when less water must be given, and in October none given until the foliage shows signs of flagging. By the end of the month the foliage will commence to turn yellow, and during the period of rest a night temperature of 60 degs. will suffice, no more root moisture being given than will keep the wood from shrivelling. In January cut the plants back to the well-ripened wood and repot, first soaking the balls in tepid water and allowing them to drain for a day or two. They may be put into their flowering pots at once; these may range from 15 inches to 18 inches in diameter, as the plants will, under liberal treatment, grow into large specimens this season. Allamanda carthartica, A. Chelsoni, A. Hendersoni, A. Schotti, and A. grandiflora are all excellent varieties. The last, though smaller in the individual bloom, is the best for growing in bush form. J.

NEGLECTED PLANTS.

Fuchsia serratifolia.

This fine old Fuchsia now appears to be but little grown in our gardens, but surely if it were better known its great beauty and value as a winter-flowering plant would bring it once again into more general cultivation. Unlike most of the Fuchsias, this is an evergreen variety, and after the manner of that once popular old favourite, Fuchsia fulgens, it flowers on the terminal ends of the shoots. The leaves of F. serratifolia are of a peculiar metallic glaucous green hue, a tint that sets off the rich pendulous flowers to great advantage. This Fuchsia has not, I think, improbably gone out of favour by being treated in the ordinary way and grown as a summer-flowering plant, at which season, however, it is comparatively worthless, as it then seldom shows a blossom. With regard to its culture, cuttings put in and struck during the spring will make very useful plants by the autumn, and if kept during winter in a uniform temperature of 45 degs. to 50 degs., they will afford a continuous succession of bloom. In order to induce free growth, the plants should be potted on from time to time as required. The soil best suited for them is a mixture of loam and old spent stable-manure, and the plants should either be grown out-of-doors during summer in partially shaded situations, or in cold-frames where the lights can be drawn off at pleasure. As the corymbs of flowers are borne on the points of the shoots, they should not be stopped later than the end of June or middle of July, or they will not have time to develop fine heads of blossoms. The habit of the plant is naturally bushy, and it is better to allow it to assume its own natural form than to check and cramp it by stiff training. It is also seen to great advantage when trained under the roof of a greenhouse or conservatory, and with its long, pendulous branches allowed to hang down naturally. Under such conditions its bright red flowers are freely produced during the winter months. In a cool greenhouse in winter it is nearly or quite deciduous, and if rested then as other Fuchsias are, will, when started in spring, flower freely after the young growth is sufficiently developed, and will continue to do so during the summer and autumn. Many of the old species of Fuchsias are, as a rule, greatly neglected, yet they are very beautiful, and can even be enjoyed in some cases where there is no greenhouse, as this kind, in common with several of its congeners, stands the winter well in the open air if protected over the roots, and in spring throws up strong shoots so freely as to form a handsome mass, which flowers until frost sets in. Between this species and Fuchsia Dominiana several hybrids have been raised which for winter flowering have been found to be very useful. They are of compact habit, and therefore suitable for pot culture, in which state they can easily, if needed, be introduced into a rather warmer structure to open their blossoms than that in which they have been grown. Another species much resembling F. serratifolia in habit, but with larger leaves, and flowers borne in clusters, and even more showy, is F. corymbiflora. The elegant little F. microphylla and thymifolia, too, must not be overlooked, and no two flowering shrubs are handsomer than F. gracilis and F. coccinea, which grow out-of-doors freely on our southern coasts. B.

Two good Carnations.—In considering the value of a good Carnation, there are many

hings to note besides the colour of the flower, uch as growth, freedom, fragrance, and whether he calyx bursts. When paying a visit to Mr. May's nursery at Teddington recently, I was pleased with two kinds in particular—namely, Uriah Pike and Duchess of Fife. They were grown in enormous quantities for cut flowers. House after house was full of them, the plants being grown in pots, and out of this vast quantity one could hardly find a poor plant. The growth has strong foliage, abundant, blooms large, and produced in the greatest profusion, and of great substance. When market-men grow things in large numbers it is evidence that the variety is reliable. These varieties are by no means new, and moderate in price, and they should be grown by everyone. Uriah Pike is like an Old Crimson Clove in colour, and Duchess of Fife is a delicate rosy-pink, a pleasing shade. —J. C., *Ferde Abbey*.

THE KITCHEN GARDEN.

SPRING CABBAGE.

There is nothing gained by sowing too early, particularly where the ground has been well tilled and is in good heart. Select a piece of ground in the open, that the air may act on the plants from all sides, this being far preferable to sowing on a border that is sheltered by a wall. Before sowing see that the soil is made thoroughly moist to the depth of a foot, that it may not be necessary to water so heavily afterwards. In my opinion it is far better to sow in shallow drills about 6 inches apart than broadcast, as by so doing the seed is not only more evenly covered, but the plants are more easily kept clean. If the first lot of seed be put in at any time during the second or third week in August, the plants will be large enough for transplanting to their permanent quarters by the end of September, which, in the majority of cases, will be quite soon enough. When the seed is sown, if the weather is hot and dry, give the ground a watering, then cover with a mat, as this will prevent evaporation and so keep the soil in an even state of moisture. After four days the mat ought to be removed, for at this time of the year germination takes place quickly, and if covered when the young plants appear through the soil, they soon become drawn and are spoiled. When the first seed-leaf makes its appearance and if the weather continue dry, add a little guano to the water each time watering takes place. The plants will then soon be large enough for pricking out, which ought not to be delayed one day longer than is absolutely necessary, as they soon get spoiled. Each one should be carefully drawn after giving the bed a thorough soaking that they may leave the ground readily. They should then be pricked out about 4 inches apart each way, that a sturdy growth may be made.

The ground on which it is intended to grow Cabbages cannot well be too rich. With many it is the practice to plant on ground from which the crop of Onions has been taken, and this, no doubt, is a good place provided the soil is in good heart. Where the Cabbages are cleared off as soon as they are cut it may not be necessary to go to the trouble of digging light land. Here, however, there would be some difficulty in getting a dibber into the ground unless it were dug. It is, therefore, my practice to give the plot on which these are grown a liberal dressing of manure, then to dig it two spits deep, taking care in so doing to break it up as fine as possible. The distance allowed between the rows of early Cabbages must greatly depend on the quality of the ground and variety grown, or whether it is intended to grow any other crop between them. Some prefer planting every alternate row with Coleworts, in which case it will be necessary to allow a greater space between the rows; but where ground is fairly plentiful it is as well to plant the early Cabbages by themselves, and if late kinds are grown putting the Coleworts between these. The space allowed here is 18 inches between the rows and about a foot from plant to plant, and I find they have ample room to grow, as most of the early varieties make but few leaves. Before p'anting a shallow drill is drawn, and if the ground is at all dry water is run down this till the soil has become thoroughly soaked; the plants are then carefully lifted with a fork, so as not to destroy more roots than can be avoided and planted up to the first leaf. If the weather is very bright, a small pot is turned over each in the daytime, but removed in the evening before the sun goes down. In this way they soon take hold of the earth and grow away rapidly. When they are sufficiently established to do without watering, the soil between the rows is made level, which keeps them in position, so that none of the stem is exposed to the frost during winter. Early in March the ground between the rows receives a dressing of nitrate of soda, which after the first shower or two soon makes itself seen by the rapid progress made by the plants. The most suitable varieties for autumn sowing are Ellam's Early, Flower of Spring, and Little Gem. It is often difficult to get good Cabbage-seed. Unless special care is taken to keep the different varieties far enough apart they are sure to become crossed. Winnigstadt, the kind illustrated, is a good variety. H.

The Winnigstadt Cabbage.

Planting vegetables.—Planting will now be proceeding vigorously, and the soil being so warm and dry, more than ordinary attention will be necessary. I have found damping overhead in the evenings after bright sunny days do much to restore vigour. Drills when planting are of great benefit to the plants, as what moisture is given is readily conveyed to the roots. The drill also gives a certain amount of support to drawn plants, warding off winds which soon dry the soil round the roots. If the drills are thoroughly watered before and after planting, it is surprising how long the roots remain moist. Once the plants make new fibrous roots there is less fear of collapse. Autumn Broccoli, Brussels Sprouts, and autumn Cabbage should receive first attention, the Savoys, Kales, and Coleworts soon make headway, and make splendid growth as the nights get cooler.—W.

TREATMENT OF ASPARAGUS IN SUMMER.

When the season for cutting ceases many beds are neglected, but, in my opinion, that is the time the roots require extra food, moisture, and support. At this time of the year, even in ordinary weather, the beds require food, and though moisture may be provided by rainfall, the plants are benefited by liberal supplies of a good fertiliser. As is well-known, in many gardens large quantities of manure are placed on the beds in the late autumn at a season the roots are almost inactive. The roots are not always able to take the food supplied them, and without top growth it is useless to feed. I am aware it enriches the soil and renders it in better condition to support growth. On the other hand, it would do a great deal more good given as soon as cutting ceased, and in the case of old beds, large masses of manure destroy the roots instead of assisting them. If more food were given from April to the end of September much better results would be obtained. In the case of worn-out or impoverished beds, no matter how much food is given, it cannot give new life if there is no root action, but in the case of healthy plants, food given during the growing season, when the crowns are being formed, gives the help required and builds up better crowns. A heavy dressing of salt—say in the late autumn (November)—does more harm than good. The plants certainly require a certain amount of salt, but not when at rest, as, given then, it acts the reverse of what is intended, souring the soil and keeping the roots at a lower temperature than the surrounding ground.

I prefer giving salt from April to August, not later, and even then it should be well washed down to the roots. Another point often lost sight of is the state of the soil. In heavy clay soils the use of salt requires more care, and should not be applied earlier than May or later than August, and only in moderate quantities in showery weather. Many beds will have had little moisture since cutting ceased, and these are the beds which will feel the strain next season, especially in light soils resting on gravel. In many gardens the old system of raised beds is still in vogue, and in dry seasons these beds are the first to suffer and the most difficult to keep moist. Beds, or what should more properly be termed rows of plants on the flat, are much better off in such seasons, and where room is no object, a yard between the plants will give splendid results. With plants grown thus, irrigation can be carried out.

This is, I consider, the best means of promoting a free, strong growth, and no better use can be made of liquid-manures than for these plants. Where liquid-manure cannot be given, such fertilisers as fish-manure, guano, and salt may be given liberally and well washed in. Fish-manure is one of the best fertilisers. The proportion in which this food may be used depends upon the state of the soil. I would advise using it twice a month, in preference to strong doses with long intervals between. It is a safe manure when ample moisture is given. Guano is likewise valuable, but though applied in the same way as fish-manure, if of the best kind it need be used in smaller quantities. There are other foods, such as soot and other rich fertilisers, that can be used in case animal-manures are not procurable. It may be urged that Asparagus is a deep-rooting plant and not readily affected by drought. It certainly roots freely if well supported, but if neglected its roots soon decay. In the case of light soils, a mulch between the rows in such seasons as this is of great importance, especially

with young plants. I have used strawy litter for this purpose, and it retains moisture. Young plants in a richly-made bed are not in need of liquid like older ones, but they require more frequent supplies of water. Much may be done to support new growth at this season, as if twisted about by winds they cease to form the shoots or crowns for next season, so that it is well to preserve growths till they change colour. Any protection most handy may be employed, such as stakes and twine, or bushes thrust into the soil. W.

Transplanting Parsley. — Gardeners who have a hot, dry soil to deal with and need a good supply of Parsley in autumn and early winter might save themselves much disappointment resulting from failures from occasional sowings, especially where, as in many gardens, the seedlings are liable to turn yellow and fail or to be attacked by wireworm, by adopting the transplanting system. Parsley is always very slow in germinating, seedlings from beds sown in March and April not being large enough to thin out till the commencement of June. If at this date the young plants, instead of being cast away, are pricked out 1 foot apart on borders behind espalier trees or other semi-shady positions, the soil being fairly rich, good, well-furnished plants will result at the date above mentioned. In gardens where Parsley grows freely the necessity of transplanting is reduced to a minimum. A sowing for very early spring use should always be made during August, and be protected in winter by a frame. —J.

Storing vegetables.—Will any of your readers kindly tell me the best way to store vegetables for daily use in or near a kitchen or scullery so that they may be preserved and kept from the influence of light and be fresh and easy of access? The kind of bins or other contrivances to keep them?—V.

*** Our vegetables are stored in square recesses. There are two lots, one above another, on the north side of a scullery where there is no fire, and arranged thus the lower boxes are for roots, Potatoes, Carrots, and Onions, or heavy roots, but 3 inches from floor on wooden racks made to take away moisture. All boxes or partitions are closed in with sliding doors to keep dark and prevent drying, as vegetables so soon wither, and Potatoes get green and lose flavour. My advice would be to have the opening level with floor to sweep out dust or loose soil, and it is not necessary to have tiers one above another. I find Brassicas keep best on the second shelf or tier, and I have twenty-four boxes or receptacles, twelve on floor with bottom 3 inches from stone floor, twelve above for Beans or choicer vegetables, and two boxes are fitted with movable zinc trays to hold water. In these are placed French Beans, stalk end downwards, also Cucumbers, Asparagus, and such vegetables as require to be kept cool and moist. These boxes are of great use, as the vegetables stood in them can be kept fresh for days.—W.

Turnip Extra Early Milan.—Turnips are in constant demand in most households. As the late spring comes round and the old stored bulbs are useless, then comes the difficulty to meet the demand, and this is greater so in places where frame accommodation is limited and room cannot be found for sowing under glass. Thanks to the raisers of quick-bulbing kinds this is not such a difficulty as in former years. Having tried most of the varieties of Turnips grown, the one above named is the quickest to bulb I have ever seen, and deserves the name of Extra Early. I sowed seed of this kind on a warm border early in the spring, and commenced pulling nice useful bulbs at the end of May. One great point is the small tops made by the bulbs. As soon as they make a few leaves they commence to form bulbs. Earliness is their chief feature, as they must be used in a young state to be good.—J. Crook.

Sharpe's Victor Potato.—All points considered, I doubt if there is an earlier kind than this. I planted it in frames and had good tubers in ten weeks from the time of planting, and in the same time we had them from tubers planted in pots early in January. The first tubers were dug 28th of May from under a wall in the open air.—J. Crook.

GARDEN PESTS.

THE PINE-BEETLE (HYLURGUS PINIPERDA).

This beetle is nearly related to the Scolytus which attacks the Elms, and its grubs injure the Pines in much the same manner, but the beetles are much more destructive than the Scolytus, for not only do they make tunnels under the bark in which they lay their eggs, but each selects one of the young shoots of last year's growth, more often than not choosing the leading one; gnawing a hole in it about 2 inches from the top, it works its way into the middle of the shoot, and then upwards until it almost reaches the terminal bud, when it eats its way out again. The beetles always work upwards, for if they tried to tunnel downwards they would have much trouble in getting rid of their own droppings, and they would have to encounter the full flow of the rising sap; the hole which they make on entering is often almost closed with turpentine. Dr. J. Lindley made the following interesting observation in regard to this insect: he put one on to a shoot of Scotch Fir under a bell-glass. In about twenty hours after the beetle had begun to pierce the bark it had completely hidden itself, and had begun the tunnel up the shoot. On the fifth day it came out about an inch above where it had entered. The shoots which have been bored in this manner wither and eventually fall off. The growth of trees which are attacked by this insect is much impeded by the loss of its leading shoots, and when this kind of injury occurs year after year, no wonder that the tree languishes. Scotch and Spruce Firs are its special favourites, but the Silver and the Monterey Pines, the Larch, and probably some other kinds are at times attacked.

The beetles by their actions almost seem as if they tried to reduce the trees to a state most suited for their grubs to feed on. The latter generally only attack dying or dead trees or timber that has lately been felled. Were it not for these insects many an unhealthy tree would no doubt in time regain its former vigour; but one cannot look upon these insects as the author of that interesting little book, "Our Insect Allies," does, as real friends who kindly assist us in removing decaying trees. In uncultivated woods these and many other wood-boring insects no doubt are of great use in hastening the decay of unhealthy trees and preventing others which may have fallen from encumbering the ground for a long time to the detriment of their neighbours, but that is no reason why they should be encouraged or even tolerated in forests and woods where trees are grown for timber. When this beetle attacks small trees in plantations, the best method of destroying them is to cut off all the infested shoots and put them in a bag at once, and then burn them. Any shoots to which small lumps of turpentine are adhering should be examined, as they probably contain beetles. Among older trees this plan is not practicable, and the main thing to do is to avoid affording the females suitable places in which to deposit their eggs; any stumps, broken boughs, felled timber, or trees which are showing any want of vigour should be removed. Where these insects pass the winter is uncertain, but they probably hide themselves under pieces of loose bark, Moss, or rubbish. Wherever their winter quarters may be they reappear next April, and at once begin to prepare a place for their eggs. The female usually selects a dead or dying tree or freshly felled timber. Having made her way through the bark, she makes an upright tunnel just beneath it, in which the eggs are laid a little distance apart on either side. In about a month the grubs are hatched. They at once begin to feed, and gradually form tunnels or galleries more or less at right angles with the one formed by the parent insect. In about six weeks they are full grown, and then become chrysalides at the end of their tunnel. In July or August the beetles emerge and gnaw their way into the outer world. They then fly to other trees and bore into the shoots in the manner I have already described. There are sometimes, if not generally, two broods in the course of the year. The Pine-beetle is a small insect, scarcely a ¼ inch long. The entire insect is of a dark reddish-brown, or nearly black colour. It is cylindrical in form, deeply pitted, and covered with longish hairs. The forebody is rather conical, the feelers are short and clubbed, and the wing-cases cover a pair of long, powerful wings. The grubs are about a ¼ inch long. They are white, much wrinkled, and legless. The first three joints of the body are much larger than the others. The chrysalis case is, as usual with beetles, only a thin skin, enveloping the future beetle. G. S. S.

Destroying woodlice (*E. E. C.*).—The only way is to trap the woodlice. This may be done by laying bricks, tiles, or pieces of tile on the ground, allowing them to remain unmoved for a day or two. The woodlice will hide under them. Potatoes cut in half and slightly scooped out, laid so that the creatures can creep under them, make good traps. If you can find that they congregate, as they often do, at the base of a wall, pour boiling water over them.—G. S. S.

Caterpillars in garden (*J. W. Hancock*).—The grubs you sent are leather-jackets, the grubs of the daddy-long-legs, or crane-fly. They are most destructive pests, and are very difficult to destroy. They may, however, be trapped by burying slices of Turnips, Carrots, Mangolds, or Potatoes just below the surface of the ground, with a small skewer stuck into each to show where they are, or by laying pieces of turf, slate, tile, or board on the ground near the plants they are attacking, so that they may creep under them when they are roaming about, as they often do at night. Both kinds of traps should be examined every morning. When the parent insects are flying about on lawns, as they frequently do in large numbers, many may be destroyed by rolling the lawn with a heavy roller or using a mowing-machine.

Worms in Strawberries (*L. Shedden*).—Your Strawberries are attacked by the spotted snake-millipede (Blanjulus guttatus). They are very difficult creatures to kill, as few insecticides have any effect. When they attack Strawberries, as they have done in your case, the best thing to do is to clear away any straw, lawn-cuttings, or anything else which might give them shelter, and then prop up these Strawberries in some way, so that they do not touch the ground. Strawberries are sometimes raised on wire supports, which keeps them free from pests and from being splashed with mud in wet weather. Laying pieces of Turnip, Carrot, Mangold, Potato, or oil-cake near the plants may attract some of them away from the fruit, but they seem to be so partial to Strawberries that it may be difficult to draw them off. A strong solution of nitrate of soda or salt will kill them if it can be brought into contact with them.

The Celery-fly.—An acquaintance of mine recently stated that Quassia-extract was a remedy for the Celery-fly. I presume he meant that if the foliage was wetted with the liquid before any attack was made it would prevent the fly from piercing the leaf and laying the egg. This is feasible, although I think pretty frequent sprinklings would be necessary. When, however, the eggs are laid and the maggot hatches no insecticide is effectual, as the insect is located between the two tissues and cannot be reached. After many years' experience I am convinced that, when once affected, nothing can save the plants but careful hand-picking. If taken in time, a careful lad will look through several long rows in a day. This pest seems more troublesome in dry summers than in wet ones.—J.

Coleus pest-infested (*Coleus*). — The insects infesting your Coleus are green-fly and scale. The former you can kill with Tobacco-smoke, or by vaporising with Tobacco-water. The scale insects should be removed with a sponge and soft-soap and water.

Friend or foe? (*St. Mary's*) —The creature you inclose is a specimen of one of the centipedes (Geophilus longicornis), the luminous centipede, so called from its being luminous at certain times of the year. I believe that they are perfectly harmless in gardens.

Pests in Fern-house (*L. C. Stevens*).—The eggs you sent are those of a snail or slug. They were very much shrivelled when they reached me.

Holly leaves diseased (*J. S.*).—The leaves of your Holly are attacked by the grubs of the Holly-fly (Phytomyza aquifolia). The only practical way of dealing with this pest is to pick off the infested leaves and burn them. Unfortunately, in your case this method is scarcely feasible.

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ORCHIDS.

Odontoglossum Oerstedi.—A plant of this pretty little Odontoglot is now in flower, and small though the blossoms are, they are perfect in outline and in the purity of their segments. It is found at Costa Rica, but at a considerable elevation, so that a cool-house suits its requirements exactly. I like to keep these small plants well up to the light, though close shading is necessary at this time of year. The roots must not be overburdened with compost, small, shallow pans suiting them well. The plants must be kept moist all the year round, and the blossoms, which occur at various seasons, are sweetly scented, and last a month in good condition.—T.

Maxillaria grandiflora.—This pretty old Peruvian species is in flower, and apparently is not very constant in its season of blooming. The plant itself is handsome, with its large, healthy-looking green leaves, and the blossoms are produced on single scapes from the base of the pseudo-bulbs. They are white on the sepals and petals, the lip purple on the side lobes, the middle one yellow. It is an easily-grown plant, thriving in pots with good drainage, the compost consisting of peat and Moss, with a little loam fibre for the strongest plants. It should be grown in a light position in the cool-house, but shaded from bright sunshine. While growing freely large quantities of water are required at the roots, and the atmosphere must be kept very moist, but during winter much less moisture will suffice.

Oncidium incurvum.—A fine old plant of this pretty Oncidium is now in bloom, carrying twenty spikes, each from 4 feet to 5 feet in length. The individual blooms are small, pure white, with violet-purple markings. It thrives at the cool end of the Cattleya-house, and while in flower should be kept in a cooler and drier atmosphere to preserve the blossoms and ripen up the new pseudo-bulbs. It is best grown in pots, and the compost may consist largely of rough turfy peat, plenty of crocks and charcoal being added thereto. The flowers last a long time either cut or on the plant; but the plants must be kept well supplied with water while carrying them, otherwise the strain is likely to cause the bulbs to shrivel.

Cypripedium lævigatum.—This fine old species blooms at various times in the year, and the flowers last a long while in good condition. The foliage is long, deep green, and thick and fleshy in texture. The flower-spike attains a height of about 18 inches and produces several blooms. The dorsal sepal is white, striped with purple, the petals drooping, yellow below, sometimes tipped with rose and having several blotches in the centre; the pouch dull yellow. It requires more heat than most kinds, and may otherwise be treated similarly to the longifolium types. It is a native of the Philippine Islands, and was introduced by Messrs. Veitch in 1863.

Dendrobium formosum giganteum.—This may be considered the best of the nigro-hirsute group, and a really good Orchid when well grown. It is plentiful enough to be always cheap, and should be grown in the warmest house. The young growth usually starts in early spring, and the blossoms are produced from the apex of this, as well as from the older pseudo-bulbs. It is not unusual for this plant to flower twice in a year, but if it can be kept to an annual routine of growth, rest, and flowering, it is healthier and longer-lived under cultivation. It will be noticed that many of the plants that flower out of season start very weakly afterwards, and this may be accounted for by the fact of the energies of the plant being devoted to building up the blossoms instead of going to the new shoots.

Galeandra Devoniana.—Perhaps this is the most popular in this neglected genus, and I have seen it in flower recently in several collections. The stems under cultivation seldom attain a height of more than about 30 inches, though they are said to grow twice that length naturally. It is not, it must be confessed, an easy plant to grow; but if more care were taken to keep insects, and especially thrips, from it, there would be less difficulty in its culture. The best plants I have ever seen were growing in nearly full sun in a Pine-stove, heated partly by hot water, but with a large fermenting-bed in which the Pines were plunged. The moist heat generated by the latter is very distasteful to insects, and also helpful to the growth. This cannot, of course, be provided in Orchid-houses, but a good deal may be done by keeping plenty of moisture in the atmosphere, and by occasionally fumigating with one of the improved methods now so much used. If this is inconvenient, the plants should be frequently dipped in a solution of Tobacco-juice and afterwards syringed with clear water. Cool winter quarters are also beneficial, and as long as the temperature does not fall below 50 degs. by night, the plants are quite safe. The pretty blossoms of this Orchid are each 4 inches across, the lip white, with stripes of purple, the latter colour appearing on the sepals. It grows on the banks of the Rio Negro and other parts of South America, and was introduced in 1840.—T.

TULIPS AT MULLINGAR.

As Tulip-growing is being treated of in GARDENING at the present time, and as I have been fairly successful in their culture, it may be of interest to your readers to give my method of cultivation.

I grow them in flat beds about 4 feet wide, leaving about 6 inches between each bed; the alleys, however, not being sunken, but just level. I commence planting the bulbs about the 20th October, beginning with the single varieties. I start at one end of the plot and remove the surface of the prepared ground to the depth of from 4 inches to 6 inches, according to its quality and the size of the roots, and 5 feet broad. On this I spread some well-rotted manure to the depth of ¼ inch. This I lightly fork in, so that the bulbs may rest on clay. The bulbs are then planted with 3 inches between each, and in rows 5 inches asunder. In the case of very large ones I allow a little more room. I then cover them with the clay removed, and continue doing the same till the end is reached. Of course, I allow my bulbs to ripen every year. I have not yet lifted any of them, but intend beginning at once to lift the singles, as I require room for Begonias, of which I have a very nice collection. Now as regards the preparation. When the Tulips are raised, I trench the ground, taking up about 1 inch of fresh earth, and putting in the bottom about 4 inches of manure, not necessarily well rotted. I also leave half my garden idle during the summer every year, and fork it over several times. The other half I plant with Begonias, Gladioli, and annuals. I may also add that I alternate Hyacinths and Tulips every year, and give the same treatment to both. Further, I never cover my beds with anything, and never have a failure. This year I had about 6,000 Tulips, and out of these about 100 wee offsets—and, would you believe it?—one of these flowered! Fifty, consisting of four varieties, gave two flowers on a stem, and a dozen produced three. Some of the petals on the singles measured from the base to the tip 5 inches, and the doubles when fully open were mistaken for Sunflowers. In conclusion, I may mention that it takes imported roots, of which I purchase a few every year, three years to reach the standard of my own, both in leaf and flower. In proof of the former I am sending you two stems. I am also sending the little bulb which gave the flower.

R. DOWLING, *Monilea.*

Sowing seeds in greenhouse and planting bulbs (*M. A. P.*).—It is too early yet to pot bulbs of any kind. Early in August Lilium Harrisi would succeed and give a wealth of pure white blossoms at Christmas and onwards. Bulbs of Lachenalia pendula and tricolor, potted early in September, five in a 5-inch pot, would make a pretty April display; they are so easy of cultivation. Mignonette now sown, three seeds in one 2½-inch pot in a cold-frame, would grow into nice standards if all the side shoots were kept pinched until the desired height of stem—2 feet—has been obtained. One plant in a pot is sufficient. The object of sowing three seeds is to make certain of germination. Seed of single-flowered Primulas may now be sown in sandy soil in a well-drained seed-pan, standing the pan in a warm corner of the propagating-frame, keeping the pan shaded from bright sunshine. A square of glass over the pan will keep the soil in a moist state better than free exposure. Primulas sown now will bloom in November and onwards. Cinerarias sown now in the coolest part of the greenhouse, or in a cold-frame, will blossom at Christmas and prove useful. Balsams grow quickly in ordinary greenhouse, kept close to the glass in 5-inch pots, and well supplied with water.

THE RANUNCULUS.

A NEIGHBOUR of mine has a circular flower-bed, the centre of which is now filled with gay and attractive Ranunculi. They represent what are known as the Turban varieties, and all are self-coloured, ranging in colour from white (not a pure white) through shades of yellow, pale and deep rose, scarlet, crimson, etc. Perhaps it is the lateness in blooming of the Ranunculus which prevents it being employed in the spring garden as it would otherwise be, because it interferes with getting out the summer bedding plants, another difficulty being that it is always best to lift and store the roots as soon as the foliage begins to decay. Years ago the Ranunculus found a place in the calendars of operations in the weekly and monthly periodicals on gardening. Then, when the florist made a pet of it, the head of bloom was looked for in June and early in July. It was grown in carefully prepared beds, shaded from the sun in hot weather, and watered when it was dry. Some protection was needed from rain-storms, the dark-coloured varieties especially showing the effects of it. All the highly-bred varieties of fifty years ago have entirely disappeared; many of them were of delicate constitution and difficult to cultivate with success, but the more robust-growing Turban types are still grown by the Dutch and other foreign florists, and imported to this country as dried roots at the end of the summer; so there is no difficulty in obtaining them. Planting is done in February when the weather is fine and the soil dry enough, and as late as May a dried Ranunculus-root, with its mass of claw-like root divisions, is a poor shrivelled-looking atom, but when put into the soil it absorbs moisture and increases considerably in bulk. When dibbling in the roots they should be put at such a depth that there will be fully 2 inches of soil above the crown, even then the act of swelling causes some of the roots to be thrust up out of the soil. The Ranunculus is very useful for cutting from, as the stems are erect and rigid. Time was when the scarlet Turban variety was much grown in the market gardens about London for bunching for market. Since then the fashion has set in in other directions and there is danger of this fine early summer flower becoming almost forgotten.

Raising seedlings is an interesting process. Years ago I had some seed of a very fine strain sent me. The seeds were sown on the surface of a box of fine soil, then well watered after being pressed down into the earth, a covering of Moss placed over them, and the box stood in a cool, shady spot. By the autumn there was a good crop of plants; the box was then placed in a cold-frame and wintered in that way, protected from rain and frost, and in early spring the roots were carefully lifted and planted in a prepared bed. Some of them bloomed the following summer. The roots were lifted in the autumn, carefully preserved, and replanted in March, with the result that I had a good head of bloom of charming varieties.

Success is to be secured in the cultivation of the Ranunculus only by constant attention. It is proper and continuous treatment of the right character at the right time, which leads to success. That to grow this flower successfully causes trouble is indisputable, but our forefathers who grew it so finely spared no pains in this respect. Perhaps it is the fact that in these high-pressure, busy days the Ranunculus does need a good deal of attention, which has led to its having pretty well become a neglected subject.

R.

Golden Ball.—Some short time ago one of your correspondents asked the name of Golden Ball. I fancy the answer was wrong if Buddlea globosa was meant. It is a favourite flower for bees.—CHESTAL.

*** *The Buddlea globosa is the Orange Ball-tree, and the Golden Ball is a name for Trollius europæus.*

The Old Orange Lily (L. croceum) is very beautiful when planted in large groups amongst dark green evergreen shrubs. It comes in at a happy time. The umbellatum Lilies are over, and the general kinds have scarcely commenced to bloom.

ABOUT CHINESE PRIMULAS.

Where many of these are grown the earliest sown batch will have been potted off, the main batch of plants resulting from a secondary sowing being still in the boxes or pans in which they were pricked out early in May. These will now require attention, as from such plants which will flower during November and December far better trusses of bloom may be expected than from either the earlier or later flowering lots. Some gardeners in order to secure flowers in February and March continue to pinch out the bloom-stems from the time they show in autumn until the new year, but although good stocky plants may be obtained in this way the individual trusses are much inferior to those from plants which have never been pinched at all. Primulas are much like Stocks in this respect; pinch out the first formed or central trusses and you may get side ones in quantity, but individually they will be poor. I would much prefer sowing later, say in the early part of June, growing the plants on and flowering them in 4½-inch pots. Primulas do best in a fairly light fibrous loam which has lain for some time and been turned over several times during frost. It must be free from wireworm, as these pests quickly bore through the base of the crown and ruin the plants. A sixth part leaf-mould and sufficient sand or grit to keep the compost open should also be added. Although requiring a certain amount of shade, I do not hold with the old practice of growing the plants behind a north wall, preferring a south aspect and whitening the lights over to afford protection from excessive sun-heat. Primulas will stand and even enjoy more sun-heat than many are aware of, most of the plants for seed in nurseries being grown in low, span-roofed houses with the roof-glass whitened over. The finest lot of November-blooming Primulas I ever saw was grown in frames facing south, duly shaded, the lights being shut down tolerably early in the afternoon through July, August, and September, and the plants freely syringed. A good Primula grower of my acquaintance attributed much of his success to the use of pigeon's-manure in the soil, this being employed at the rate of about an 8-inch potful to a barrowload of soil. Good leaf-soil made from Oak and Beech he also valued. The manure was added when in a dry, powdered state, and had, he thought, the same effect as guano, which is very seldom obtained in a pure state now-a-days.

The old plan of potting Primulas with the crowns elevated, thereby necessitating the use of small wooden pegs to prevent the plant from swaying about, has happily now become extinct. Its advantages were more imaginary than real, lowering the ball as in the case of ordinary soft-wooded plants and making the soil tolerably firm around the crowns being attended with little danger from damping provided ordinary care is taken in watering. The young plants may be kept in a frame from June onwards, and if the early closing and syringing system above referred to is adopted, a little air may be given in the evening and left on all night. Primulas, if in a healthy state, are seldom attacked by insects, although if in dry, arid quarters green-fly will sometimes appear. As a rule, by the second week in October those intended for blooming in November and December will need removing to a greenhouse, as damp during the night is apt to injure the earliest trusses. A light, cool structure, free from aridity, suits them best. J.

Pinks.—Although large clumps of these sweet-scented hardy plants give large masses of bloom in the summer, and furnish a wealth of cutting flowers, yet when out of bloom they leave blanks in the border for a long time. It is so much better to propagate from old plants every summer through the aid of pipings, and which, pinched off early in July and set thickly into sandy soil where they can be covered with handlights or large panes of glass for a few weeks, soon root and give plenty of strong plants to put out into the borders in the autumn. It is such plants that give fine flowers in abundance the second year. Some of the common varieties bear lifting, dividing, and planting in the autumn very well. That plan, however easy, would not check propagation by the use of pipings. A dozen of the best Pinks suitable for border purposes once obtained may be perpetuated for generations if treated as advised.—A.

GARDEN WORK.*

Conservatory.

The Bermuda Lilies will soon be over, but will be followed by the auratum and lancifolium sections. Lilies should be largely grown for the conservatory; they are easily managed, and in the case of longiflorum and Harrisi, by forcing a few early and retarding others, the season may be prolonged. The same course may be taken with lancifolium. We have some plunged outside for late blooming, as the flowers are useful for cutting. The double Tiger Lily is very useful for culture in pots. I found this out many years ago when trying experiments with Lilies in pots. The double Tigers were a great success, and so lasting. And we do not want all our flowers to be white, though white and yellow seem now to be the fashionable colours in flowers. Place hard-wooded plants outside now in some sheltered place out of the wind as much as possible, and see that they do not want water, using the syringe freely in the afternoons of fine days. All the exhibition Chrysanthemums will now be in their blooming pots, and be ranged out in rows thinly, the tops of the stakes secured to a wire which is stretched along over the plants. We are in a windy district, and special precautions have to be taken, and even then sometimes on a windy night, if a stake or wire gives way, a row of plants are found on their sides in the morning. Plants for later blooming may be potted any time; there is plenty of time for them yet, but such kinds as Lady Lawrence should not be stopped more than once if good blooms are wanted at Christmas. Princess Victoria, Pelican, and The Queen are good late white sorts. We are growing a lot of late-struck plants. Lots of other plants will be flowered in 6-inch pots with one good bloom on each plant, and the foliage retained to the pot. We found them useful last year, and shall do more with them. The plants are now only just rooted. As soon as the flowering Pelargoniums are over turn the plants outside to ripen, and then cut them down and put in the cuttings. Move Cyclamens now to cold-frames. The earliest plants will now be ready to go into 5-inch pots. Use a little good peat and leaf-mould with sand enough to keep the stuff open and sweet, and when the time comes, help them with a little stimulant. Tuberous Begonias will be a special feature now. Something may be done with Balsams and Cockscombs and other plants of annual growth.

Stove.

Young stock are now growing very fast, and will take injury from overcrowding or being pinched up in small pots. For furnishing, 5-inch pots filled with Adiantums of sorts, Club Mosses in variety, the pretty Indian Grass, Panicum variegatum, and several other things in the Grass and Moss way, will be very useful and may be grown under the stages in the shade, where they will do better than if placed in a light position. Tropical Ferns are frequently grown in the stove and do very well there, as a rule, mixed with Orchids and Caladiums, but Crotons and Dracænas want more light to give colour. Cuttings of Crotons, Gardenias, and other stove plants will strike easily and quickly now in a close propagating bed. Old plants of Dracænas may be cut down and the stems cut up into single joints and planted in very sandy peat as cuttings. Plants established on soils will require a good deal of water now, but avoid overdoing it, as an overwatered soil soon gets sour. Shade there must be now during the hottest part of the day, but remove it as early in the afternoon as possible, and damp down.

Pines.

This is the season when Pine-growers usually overhaul their stock. The old stools from which the ripe fruit has been cut are deprived of their suckers, and then thrown out, as more space will be required for the fast-growing successions. These also will require larger pots, so that altogether a good deal requires to be done. Pines always require bottom-heat, and a plunging bed is necessary for the pots. A mixture of tree-leaves and tan is better than all tan. Where there is bottom-heat from hot-water pipes or tanks the plunging material is only required to keep the pots in position and to check evaporation, and therefore need not be renewed so often. After repotting, the water-pot must be used with care, as Pines will not make healthy roots in sour soil, and the leaves soon assume a foxey hue, and unless stock is scarce, foxey-hued Pines had better be thrown out.

Tomatoes Under Glass.

Free ventilation is necessary to keep the plants in health. When we see plants diseased, we may safely draw the conclusion that something has been wrong either with the soil or management, or both. To save watering so extensively we always mulch the borders, or if grown in boxes, as a good many of our Tomatoes are this year, occasional top-dressings of good soil are given, as Tomatoes are strong-rooting things.

Cold Frames.

All the movable frames should now be turned with the backs to the north to make them as cool as possible for the Cyclamens and Primulas. The Cinerarias will be better with even mere shade in hot weather.

Window Gardening.

Ferns and Palms will be appreciated in the room now, but neither of these should be exposed in sunny windows, and should not be allowed to get dry at the roots to cause the leaves to wilt. Anything which requires a larger pot should have a shift now. Plants not in flower, foliage plants excepted, will be better in the open air now.

Outdoor Garden.

There is always something to propagate or to transplant where a good collection of hardy plants are grown. The best time to divide the double White Rocket is as soon as it breaks when cut down after flowering. If divided then, and planted on a fresh bed, every bit will grow and soon get established. Pink pipings may be inserted now under handlights in a shady border. The old-fashioned florists that I was acquainted with in my young days excavated the soil 8 inches deep, placed a large Rhubarb-leaf on the bottom, and filled in with specially prepared compost of a light, fairly sandy nature, with a little clean sand on top. Into this the pipings were thrust, and it was rare to have a failure. It may not be necessary to go to much trouble to strike a few Pinks. The old florists had a reason for all they did, and they certainly could strike and grow laced Pinks. No time should be lost now in pricking off Wallflowers and other hardy plants sown in April to have strong, sturdy plants. Roses are doing well where the ground has been well prepared before planting. This is the best way to follow: Deepen and improve the land, and give the plants a chance to grow away from their enemies. The early planted Briers will soon be ready for budding, and new sorts of Roses should be started on as soon as buds are ready. The late rains have done much good.

Fruit Garden.

The summer pruning of wall trees and espaliers may begin now. Do not cut too hard back; leave at least four good leaves. This will allow an outlet for growth without starting back eyes. Some forty years ago the late Mr. Thompson, when at Chiswick, went fully into the matter, and as a result of his investigations it was recommended that the summer pruning of Pear-trees should be divided into three periods, with ten days' interval between. Thus the top of the trees and one-third of the space down was pruned first, then followed the middle portion, and, last of all, the bottom. The theory was that the bottom branches would be better nourished. To bring this effect out it must, of course, be carried on over a series of years, not intermittently. There are plenty of good Strawberry-runners now. Let all that are likely to be wanted for any purpose be layered in some way, and then cut off all the other runners, and as soon as the ground is ready plant them out. Strawberries like a deep, well-manured soil, but it must be firmed by treading or rolling before planting. A very good plan is to trench and manure a piece of land for early Potatoes, and as soon as the Potatoes come off add a further top-dressing of short stuff; fork it over, and set out the plants.

Vegetable Garden.

Tomatoes in the open air are now growing rapidly, and must be confined to a single stem by the removal of all side shoots. It is a mistake to plant in very rich land. Get the plants into sturdy growth, and a truss or two of fruit set; then begin to feed, first by a mulch of manure, and afterwards by the aid of liquid stimulants. Under glass a second crop may be obtained by allowing some of the young shoots to be left for training on after the fruits have been ripened, stopping them when one truss of bloom has been produced. Fill up all spare frames with something profitable. Cucumbers, Melons, Tomatoes, Capsicums, etc., may be used, and after these are cleared off in autumn the frames will come in again for Violets; and I have known a frame full of dwarf French Beans come in useful in the autumn, especially if there comes an early frost to cut off those unprotected outside. The Beans may be planted end of July or first week in August in early districts, and the lights kept off till required for shelter. Whenever frost is expected a very early kind of Bean should be planted. In sowing Peas now I should sow a second early kind with the late Marrow. Ne Plus Ultra is a splendid old sort for autumn, and when the pods have been picked off close a very good second crop is often obtained when the plants are not too much crowded and are well nourished. Get out Celery as fast as possible.

E. Hobday.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 28th.—Sowed Ne Plus Ultra, Huntingdonian, and Laxton's Supreme Peas. Finished potting November-blooming Chrysanthemums into blooming pots. Sowed herbaceous Calceolarias in cold-frame. Potted early sown Cinerarias from boxes, where they were pricked off. Sowed a few more seeds for late blooming. Shifted early Cyclamens into flowering pots. Moved Azaleas from cool-house to a sheltered position outside.

June 29th.—Top-dressed Cucumbers in houses. Finished thinning late Grapes, and dressed the borders with artificial manure—a mixture of nitrate of soda and good fertiliser—watering it in; afterwards mulched with cow-manure. Sowed Endive and Continuity Cabbage Lettuce. Planted out more Red Celery, and shaded with branches laid across the trenches. Pegged down Verbenas, Heliotrope, Petunias, and Ageratums in beds.

June 30th.—Planted Veitch's Autumn Self-protecting Broccoli. Sowed Walcheren Cauliflower and Rosette Coleworts. Planted out Savoys and more Brussels Sprouts. Layered President and Sir J. Paxton Strawberries on sods of turf, partially buried in the ground to save watering. Gathered early Strawberries on south border. Gave Strawberries a good soaking of water. Ran the scythe over beds of Alpine Strawberries to cut off early blossoms; they are wanted later. Planted Chillies after early Potatoes on warm border.

July 1st.—Discontinued cutting Asparagus from all beds; gave them a sprinkling of salt. Pricked off a lot of late Broccoli; the ground is not ready for them yet. Finished thinning long-rooted Beets. Planted out some of the best of the plants. Cut down a lot of early young pod Beans, from which the pods have all been gathered, and mulched between the rows with manure. If the plants are healthy we generally get a good second crop later on from these. Made up Mushroom-bed in a shady spot outside.

July 2nd.—Made a good sowing of such hardy Turnips as American Red-topped Stone and Chirk Castle Blackstone. Sowed early Horn Carrots, Parsley, and Chervil. Planted more Melons in frames. Cut down the earliest Pelargoniums and put in cuttings. Pricked off earliest sown Primulas. Put in a few buds of new Roses on the early-planted stocks. Put in a lot of Rose-cuttings from plants grown under glass. Weeded rock garden and top-dressed with loam and leaf-mould where necessary. Removed sublaterals from Vines under glass, and watered borders of late vinery with liquid-manure. Commenced summer-pruning Pears on walls. Thinned outside Peaches a little more, and mulched with old Mushroom-bed manure. Thinned the young shoots of Morello Cherries. Took off tops of Red Currants on which green-fly are appearing.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

898—**Flowers for Easter and Christmas decorations.**—I shall be much obliged if you will give me advice as to what kinds of plants with white flowers (Lilies, etc.) I can grow that will flower at Christmas and at Easter for church decoration? I have a greenhouse—unheated—and good garden, with sheltered south border. I think of planting beds of Pheasant's-eye Narcissus and La Candeur Tulips in September for Easter, but am anxious to have Lilies also, and something for Christmas.—A. T. H.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

899—**Lily** *(Green Dragon).*—We do not recognise your Lily leaf. It seems healthy. Keep it growing without repotting, and it will probably flower soon.

900—**Cucumbers diseased** *(A. L.).*—Due to too much moisture when the house was cold. Cucumbers require plenty of heat and moisture, and will not stand extremes or changes of temperature.

901—**Hydrangea cutting failing** *(Green Dragon).*—Probably your plant was not sufficiently well-ripened last autumn. It is well to afford two or three months of open-air treatment from end of July onwards.

902—**Transplanting wild Primroses** *(T.).*—Yes, the present is a good time to transplant the common wild Primrose. Some water and shade will be necessary to give the roots a start if the weather continues hot and dry.

903—**Cucumber-leaves spotted** *(Wm. Pink).*—We have frequently noticed this result from the application of cold water, growing in a too stiff or stale soil, and also from the lower roots having penetrated to some hot pipes, and so received a severe check.

904—**Unsatisfactory Peach and Nectarine-trees** *(Beginner).*—We can only suggest you allowed too much ventilation during the cold weather of mid-May. It would certainly be well to lighten your soil by the addition of stable-manure. See that the borders are not dry below the surface.

905—**Creepers for stove and greenhouse** *(A. P. Haig).*—Allamanda Hendersoni (yellow) and Stephanotis floribunda are the two most useful and showy climbers for the stove for flowering at the time named. Tacsonia Van Volxemi and Bignonia Cherere are equally good for the conservatory.

906—**Anemone The Bride** *(H. J. Bates).*—As your plants are still doing so well we should not be disposed to move them just yet. Should they, however, give evidence of ripening, lift them with a little soil attached, put into boxes, and place them in a cool, dry place for planting out again later.

907—**Propagating Heaths** *(R. Suttie)*—You can propagate the hardy Heaths from layers. Commence now, layering into a light compost of half sand. We note some you send are short growers. These can be increased by carefully placing some of the sandy compost well into the centre and around the clumps. Transplant early next spring.

908—**A mealy-bug eradicator** *(A. P. Haig).*—If the steam and ammonia from the manure were strong enough to kill the mealy-bug it would injure the young leaves of stove plants and Orchids. At this time of the year the best means of stopping the spread of mealy-bug is tepid water, applied with force by the hand syringe to plants so affected.

909—**Watering Cacti** *(R. C. G.).*—With the moist atmosphere you are now using for Cucumbers, the Cacti will require very little root-watering. It is obvious we cannot possibly give the exact proportions and times—so much in fact all depends upon weather and sun influence; but you are scarcely likely to keep the border too dry while growing.

910—**Sowing seeds in greenhouse** *(H. R. Pickering).*—You might raise Pansies, Polyanthuses, Wallflowers, and Forget-me nots to plant out for next spring display in the garden. These and hardy Dutch bulbs are about the best subjects to succeed those already in the flower-beds. In the house you can soon plant such as Early Tulips, Hyacinths, Ixias, Freesias, Lachenalias, Alliums, and other bulbs for winter use. Young Bouvardias, purchased now and grown on, also young Ferns in variety, Begonias, Fuchsias, and Pelargoniums would give an immediate display.

911—**Margaret Carnations** *(A. Robertson, Lanark).*—We have more than once dealt fully with Margaret Carnations. It is a good plan to sow seed in the autumn; pot on as soon as they can be handled, treating them generously when the days turn, when they will flower well in an ordinary greenhouse during early spring. We do not think you will succeed with those in a seed-pan now unless very young, when they must be potted on at once.

912—**Fruit for back wall of vinery** *(A. P. Haig).*—If the vinery is devoted to late Grapes, not an ordinary lean-to house, but with backlights which admit abundance of light to the back wall, Peaches might succeed, but it is not an advisable combination. It is difficult to name any fruit that will succeed along with Grapes. Figs sometimes do. Asparagus plumosus, Hoya carnosa, and Tea Roses sometimes grow well in such a position, and are useful in a cut state.

913—**Vine shoots** *(W. M.).*—If we understand your query rightly, you have layered a few of the sucker shoots, and these have made growth 7 feet to 8 feet in length, not the same shoot or branch that is carrying fruit. In that case you could remove at any time, but it would be better for the future cane, and also for the present crop of Grapes, to feed the young canes well and not sever them before the end of the year. Vines bleed very freely, and suffer much from loss of sap.

914—**Pæonies dying** *(R. W. P.).*—You do not say what species of Pæonies yours are. We have seen the herbaceous section growing freely at Brighton, and yours, if the same, should thrive under the conditions you name. The Tree or Moutan section is more delicate. Have you wireworms troubling them? This is a terrible pest among turfy loam when not carefully selected and searched before using. They are more active early in the season, and may be the cause of yours failing. We would lift one or two roots carefully and examine.

915—**Double-flowered Narcissus buds failing** *(T. H. V.).*—Especially in soil of so retentive a nature as clay, the double Narcissus very often refuses to open its blossoms the first year. The long-continued rain of March too, interfered with the satisfactory growth of the bulbs, which were doubtless somewhat at fault. Take up the bulbs when the leaves have died naturally down, store them in a cool dry place until August. Plant them where to flower, 4 inches deep, putting under each a double handful of sandy compost, filling up the space above the bulb also with the same material.

916—**Brugmansia** *(Geo. Loverock).*—Your Nepenthes question will be fully answered shortly. The Brugmansia does not flower satisfactorily owing to not being pruned back sufficiently at the end of the flowering season. To obtain a display of bloom the plants should be cut back to within a couple of eyes from where the leading branches originated or started at the beginning of each season. The old plants flower more freely than the younger ones. They are strong and vigorous in growth, and require a large amount of root-room, but when restricted in the growth and the root they flower much more freely. A liberal supply of water throughout the summer months is necessary, and watering with manure-water three or four times a week will greatly benefit them. Brugmansias are of a hardy nature, for they succeed well outside during the summer months, and look effective in sub-tropical beds, or even placed by themselves where they may be seen to advantage. But when they are for planting outside it is advisable to grow on for the first season in pots in a greenhouse, planting out the following spring. Aphides can be kept under by constant use of the syringe or even fumigating with Tobacco-smoke.

917—**Blue Iris.**—Will the common blue Irises or Flags thrive in damp ponds better than in the open ground, like the wild Yellow Iris, or not so well?—E. B. S.

*** *The common Blue Iris not being an aquatic in the same way that the yellow variety is, will not thrive wholly in water in the same way that the yellow variety does. In the ordinary garden border, where there is abundance of moisture, this Iris succeeds best.*

918—**Liquid-manure for Lilium auratum**—Please tell me what I can use as a liquid-manure for a Lilium auratum coming into flower? I can get fowl-dung, also horse and cow-dung. I have top-dressed the plant with very old cow-dung and water, with weak soot-water twice a week. The plant is growing vigorously.—ARCHIE

*** *Liquid made from any of the manures you name given in a weak state is good for this Lily. Soot-water given as you say twice weekly is also beneficial. Top-dress the plant again with fresh horse-dung if there are any roots to be seen on the cow-dung previously placed thereon.*

919—**Watering plants.**—Would you kindly tell me how many times in a week I must water Campanulas and Nicotiana affinis, and must they be shaded from the sun? Must they have water on the leaves? They are in pots in a kitchen.—W. LIGHT.

*** *You must use your judgment entirely about watering the plants. Water them only when required, never allowing the soil to get either too dry or too wet. A gentle dewing in the evening on the foliage will do no harm. Put the plants outside.*

920—**Removing seed pods from Azaleas.**—Is there any advantage or gain in growth obtained by cutting off the dead flowers or seed pods of Azaleas, a practice I always pursue with Rhododendrons?—CISSORS.

*** *A very good plan, as it certainly saves the plant.*

921—**Dividing Aspidistras.**—When is it best to divide Aspidistras?—A FRENCH READER.

*** *These may be divided now as well as any other time.*

922—**Moving Irises.**—Will you kindly inform me in GARDENING the proper time of year to move the large blue Iris and the small yellow and mauve kinds? I, unfortunately, put mine on a sloping bank, and find they do not flower there or thrive very well, so want to move them when the proper time comes.—IGNORANCE.

*** *Move them after flowering.*

923—**Holly-trees unsatisfactory.**—I should be much obliged if you could tell me why my Holly-trees, put in this spring (March), are losing all their leaves and seem to be dying, with the exception of one or two, which have not been treated any differently? I thought Hollies were very hardy. They have been planted under trees in Grass and also in the open.—E. STUART.

*** *Perhaps some insect pest has attacked them, but you give no particulars to assist us.*

924—**Treatment of old Asparagus-beds.**—Can any of your readers, or can you, advise what can be done to an old Asparagus-bed which has been neglected and is full of Twitch? Would heavy dosing with salt destroy the Twitch without harming the Asparagus? I never saw finer Asparagus than there was in this bed this year, though it was smothered with weeds.—W.

*** *The Grass you name is particularly long-lived and difficult to eradicate. You will only feed it by applying salt, and Asparagus must be fed. We have succeeded by cutting off the top as closely as possible after the Asparagus was ripened, then giving a shallow hoeing all over, and another dressing of leaf-soil and manure. Early in the year, at any time when new growths appear, cut off as deeply as you can without injuring the Asparagus crowns. When the latter push through, be more careful than before. By constantly worrying the weed, and especially by pulling out as much of the roots as possible, you may soon make an appreciable difference, and eventually kill it entirely. The only quick and safe plan is to lift and replant the Asparagus, when you can use stronger measures with the weed.*

925—**Primula poison.**—Would you name the remedy which was specified in one of your early issues this year, but which I have lost? Is the Primula obconica more poisonous at one season of the year than another, or are old plants worse than young ones? Is a similar poison found in any other kind of Primula?—R. S. V. P.

*** *Primulas, P. obconica especially, seem to greatly irritate some skins, but we are not aware that they are more troublesome at one season than any other. The following recipe for allaying irritation was given in* GARDENING, *Feb. 13th, '97: "Fifteen minims liquid carbolic acid, added to 1 oz. oxide zinc ointment, applying the same freely to affected places."*

926—**Destroying weeds on gravel paths.**—Can you recommend anything for destroying weeds on gravel walks?—AN AMATEUR.

*** *Any one of the many kinds of weed killers advertised in* GARDENING *will cleanse the gravel paths from weeds if properly done. Not only will the weeds be killed for twelve months, but the gravel will be also cleansed and made to look like new.*

927—**Arum Lilies in summer.**—What is the best to do with Arums during the summer? Is it well to cut them down?—GUILDFORD.

*** *The Arums will die down as the roots mature. Give ample water until they show signs of dying down. After new growth commences again, either repot or give a mulching of rich soil, with plenty of water as their growth proceeds.*

928—**Perennials for dry clay soil.**—"G. O." would be glad to know what perennials to grow for next year's flowering on a dry clay soil?

*** *If you manure well, few subjects will beat the Delphiniums, Herbaceous Phloxes, Antirrhinums, Aubrietias, Megasea cordifolia, Columbines, Dielytra spectabilis, Michaelmas Daisies, tall-growing Campanulas, Doronicums, Heleniums, Monarda didyma, Œnotheras, Potentillas, and Tritomas. You do not say at what date you most wish for bloom.*

929—**Saving seed of double Stock.**—Would you kindly inform me how I am to save double Stock seed from single-flowering plants, as I have a good strain, and would like to keep it if possible?—AMATEUR.

*** *Foreign growers make a practice of growing them in pots upon shelves close to the glass, with only sufficient water to keep them alive. This induces a weak and stunted growth, with more thorough maturation of seed, and these have given a greater percentage of double blossoms. Others reduce the number of seed pods and growth.*

930—**Moving old Gooseberry-bushes.**—Can Gooseberry and Currant-bushes of six to eight years growth be moved? If so, describe the *modus operandi*, and say when it should be done, for the benefit of—AN AMATEUR.

*** *Yes, Gooseberry and Currant-trees of the age named can be easily and safely moved. When the leaves are turning yellow in October, dig them up with a good ball of earth attached to the roots and plant them without shaking off the soil. Mulch the surface 2 feet around the stem with half-decayed manure. If the weather is hot and dry the following summer, well soak the roots occasionally with clear water.*

931—**Roses attacked by ants.**—Ants have attacked some of my Roses, half standards, eating the buds. I shall be much obliged if you will give me a remedy. In last week's number of GARDENING an insecticide, soft-soap and paraffin is mentioned. Will this answer?—E. P. T.

*** *Ants very often visit Rose plants to feed upon other insect pests, especially aphides. You could best prevent the ants from ascending half standards by placing a very little tar upon the stems.*

932—**Liquid-manure.**—Would the following combination for liquid-manure be proper—viz., soot-water, urine, and dissolved bones?—AN OLD AND CONSTANT SUBSCRIBER.

*** *It depends for what purpose you wish the manure. For fruit and Roses, also any coarse-growing trees, it would be valuable, but for Ferns and small greenhouse plants some of the concentrated manures advertised in our columns would be safer and more pleasant in use.*

933—**Box edge.**—Will you kindly give the proper time to (*a*) trim, (*b*) transplant?—A. B. C.

*** *We are about to publish a lengthy article, with illustrations of flower edgings, when your question will be fully answered.*

934—**Diseased Plum-tree.**—Leaves from a Plum-tree on a north wall. Soil sandy, but tree well manured. The leaves have a grey metallic lustre, and by-and-bye shrivel up.—PARK COTTAGE.

*** *Mildew; similar to that affecting the Peach, but Plums do not curl up in so short a time as Peaches. Syringe with soft-soap.*

935—**"Water Grass" treatment.**—Any hints as to treatment of "Water Grass" will oblige. When given me they were nice healthy plants but have gradually dwindled away, and all new shoots grow no higher than enclosed specimen and then turn yellow. Should they have much water and heat? At present they are in in conservatory (about 50 degs. in winter). — GREEN DRAGON.

*** *Your temperature seems suitable for Cyperus alternifolius. It needs plenty of water, and we think yours has been really seriously dry at some time. Cut down bad shoots and be more liberal with the water supply.*

936—**Destroying woodlice.**—My place swarms with woodlice. How can they be destroyed? The garden walls are old, of limestone, and need pointing, which would be difficult and expensive, as they are long and high, and covered with fruit-trees, with Strawberries at foot. They play havoc with all the fruit—Apricots, Peaches, etc.—L. S. D.

*** *Wash the parts of the wall not covered with fruit-trees with petroleum. Beyond this and setting traps of dry hay, slices of Potatoes and Carrots, killing the woodlice caught in such traps by throwing them into boiling water, nothing can be done to eradicate these pests until winter, when the wall could be washed.*

937—**Eucalyptus globulus seedlings**—I have sown some seed of the Eucalyptus globulus in a hot-bed and frame. A good many plants have grown up. I should be obliged for information as to further culture. I sowed the seeds in the beds with merely rich garden mould. How soon may I pot them, and what sort of mould and manure will be proper?—E. M.

*** *Pot as soon as possible. It is always best to sow these singly in pots, or, at all events, grow on from as young a stage as you can. The Eucalyptus objects to root disturbance very much. Give fairly quick drainage, and a compost of loam, leaf-soil, and well decayed stable-manure. Keep free from frost during winter, when you should secure some very serviceable plants next summer. They must have plenty of water.*

938—**What is an amateur?**—I am a member of a Chrysanthemum society, and up to the present time have exhibited in the amateur classes. I am also a grower of Carnations for exhibition, and have issued a list in which I state that the plants are not grown for express purposes of trade, but that my stock is limited, and I only offer for sale my surplus layers. From Monday to Saturday I follow my occupation as a clerk, and attend to the plants myself. In the circumstances does the fact of my issuing the list cut away my right to compete as an amateur Chrysanthemum grower? Should the committee debar me from doing so?—SUBSCRIBER.

*** *It is a knotty point, but societies have generally decided that persons growing for sale, even to the disposal of a few surplus plants and flowers, is barred from competing in the amateur sections. We do not see how it can be otherwise, it being obviously a very difficult matter to separate those who sell at all from a trade grower.*

939—**Propagating variegated Ivies.**—Would you be good enough to inform me the proper mode of propagating variegated Ivies—whether by cuttings, layering, or otherwise—and the proper season for doing so?—H. P. C.

*** *You can root Ivies from cuttings or layers. Most of the choicer variegated forms are grafted upon the common Irish variety or other stronger growers. We prefer them upon their own roots. Take off pieces of half-ripened growth, sever with a sharp knife just below a leaf, and insert in a sandy loam. Kept close and moist for a couple of weeks will ensure free rooting. You can layer at any time, and will soon secure healthy young plants if done now.*

940—**Diseased Peach-trees.**—Shoots and leaves from a diseased Peach-tree, growing on a north wall in sandy soil, well manured. This is the second year that the disease has shown itself. It is all over the tree. Should I destroy it?—PARK COTTAGE.

*** *Your Peach is affected by mildew, brought on by the extreme changes of temperature. Syringe with soft-soap, dissolved at the rate of 2 oz. to a gallon of soft water. A north wall is not a favourable position.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*M. B., Colwall.*—The pale blue flower is Nierembergia frutescens; the other is a Clerodendron, but we should like to know more about it. Where is it growing? It is difficult to tell kind from a single bloom partly faded.——*E. C. T.*—1, We cannot name a shrub from a leaf only; kindly send flowers; 2 and 3 are Pansies, but we cannot tell from single flowers none too fresh; Number 3 is, however, evidently Countess of Kintore ——*E. K. D.*—1, Geum coccineum; 2, Japanese Privet (Ligustrum japonicum); 3, Guelder Rose (Viburnum Opulus); 4, Crinum capense; 5, Yew (Taxus baccata). —— *Wychwood.* — The flowers were much withered, but are both Aubrietias—A. purpurea and a variety of it.——*J. R.*—1, Probably Red Valerian (Centranthus ruber), but flower much faded; 2, Veronica prostrata; 3, Woolly Woundwort (Stachys lanata); 4, White Jacob's Ladder (Polemonium cœruleum album); 5, Pteris cretica albo-lineata; 6, Please send better specimen; 7, Asplenium; kindly send fertile frond.—— *W. Gillie.*—Barbarea vulgaris.——*Fern Hollow, Eyam.*—Common Comfrey (Symphytum officinale), the blue one being var. patens. The other is Anchura sempervirens (Evergreen Alkanet).——*Lady L.*—Lilium monodelphum.——*Sigma.*—Plant is Farfugium grande, the Fern Pteris tremula. ——*Young Gardener.*—1, Potentilla insignis; 2, P. atrosanguinea; 3, Veronica gentianoides; 4, Campanula Medium (Canterbury Bells); 5, Polemonium cœruleum; 6, Solanum crispum.——*J. D.*—1, Thujopsis dolobrata; 2, Stachys lanata (Woolly Woundwort); 3, Shrivelled; 4, Campanula glomerata dahurica.——*Pat.*—1, Thalictrum aquilegifolium; 2, Aloe, but must send flower; 3, Farfugium grande; 4, Spanish Iris California; 5, I. Victorine; 6, I. John Fraser; 7, I. squalens Arnols; 8, Neglecta Virginie.——*An Old and Constant Subscriber.*—Aubrietia purpurea. You can sow seed during April and May, also root-cuttings of young growth at the same dates. They may be layered as soon as flower is past, and then divided and transplanted.——*M. Griffin.*—You must send in a larger piece of your Clerodendron before we can name the variety. C. Balfouri needs a temperature of 65 degs. to 80 degs.——*M. D.*—Both the same species of Orchid (Dendrobium nobile), but the larger flower is the finer in form and colour of the two.——*R. A. P., Boscombe.*—We are sorry you sent so many Roses; they had tumbled to pieces. 14 is the White Peach-leaved Bellflower (Campanula persicifolia alba). —— *Mrs. Parle.*—1, Silvery Cinquefoil (Potentilla); 2, Nepeta Mussini.——*E. M. T.*—Your Rose appears to be Niphetos, but a poor bloom. We could say for certain if you forward another bloom, bud, and a small portion of growth.——*Hemyock.*—1, Noisette Caroline Kuster; 2, H.P. unknown; 4, Quite withered; 5, H.P. Charles Lefebvre; 6, Every petal fallen off; 7, Tea Melanie Willermoz; 8, Tea, unrecognised; 9, Probably T. Mme. Lambard; 10, Probably Noisette Solfaterre; 11, Tea Souvenir d'Elise Vardon; 12, Tea Souvenir d'un Ami; 13, Tea Mme. Willermoz; 14, Noisette Lamarque; 15, Queen of Bourbons; 16, Unrecognised. Please send others again.

Replies to queries.—*Through going to press early, many replies to queries have been left over until next week.*

BEES.

SUPERING STRAW HIVES.

WHEN honey is being gathered in abundance, and the Bees are showing signs of want of room from the hive being full to overflowing, then is the time to put on a super or a crate of sections. It, however, requires some judgment in deciding the right moment for supering, for should the super be put on the hive before it is full of Bees, it will in all probability be discarded, and a swarm leave; but if it be put on at the proper time the Bees will ascend and at once commence work. The most suitable skeps for supering are those having a flat top, with a hole worked in it 3 inches or 4 inches in diameter; but should there be no hole in the top of hive it is wished to super, a piece of straw-work should be cut out with a sharp, strong knife. This can be done without much disturbance to the Bees if the middle of a fine, bright day be chosen for the operation, as numbers of the inmates of the hive will then be abroad in the fields in search of stores. Should the tops of some of the combs be damaged in cutting the hole it will prove an advantage rather than otherwise, as in making good the damage the Bees will be likely to extend the work up into the super. Supers may be of wood, straw, or glass, but section boxes have now nearly taken the place of the old-fashioned straw cap and bell-glass, although it must be admitted that nothing can surpass the beauty of white comb honey as seen in a bell-glass. When section boxes are worked upon skeps they are placed in a box-crate having a movable sloping roof, and at the bottom a hole to correspond with the hole in the top of the skep, and covered with queen-excluder, while two or three thicknesses of flannel or other warm material are provided for covering the tops of the sections to prevent the escape of the heated air. The section boxes are provided with comb-foundation, and the rows separated by thin wood dividers to keep the work from overlapping, as beautiful white comb honey can be obtained from the top of the straw skep as from the most expensive, elaborately constructed bar-frame hive. After the Bees have taken possession of the super, bottom ventilation should be given, if the weather be hot, by wedging up the skep from the floor board, about a quarter of an inch; this, causing a slight undercurrent of air, will enable the Bees to work with a greater comfort, and reduce the chance of a swarm leaving the hive, and the cessation of work in the super. Swarms may be supered three weeks after they have left the parent hive.

S. S. G.

Use of carbolic acid in examining hives (*Apiarist*).—Carbolic acid is now very frequently used in place of smoke to subdue the Bees when examining hives, removing full sections, and so forth. Two ounces of ordinary carbolic acid may be mixed in a quart of warm water. In this should be steeped a piece of calico large enough to cover the tops of frames or section rack. The calico, having been wrung out as dry as possible, may be placed over the sections. The Bees will at once beat a hasty retreat below, leaving the operator in safe possession of their stores. In examining a hive a large feather may be dipped in the carbolic solution and passed over the tops of the frames as the coverings are removed, and when a frame of comb is taken from the hive in searching for the queen, brood, or eggs, the feather passed near to a cluster of Bees will cause them to move away quickly, and leave that portion of the comb free for inspection. Should a hive be attacked by robber Bees, a cloth steeped in the carbolic solution, wrung out dry and laid upon the alighting-board, will usually put a stop to all warfare.

BIRDS.

Death of Goldfinch (*E. M. O.*).—This appears to be another case of pneumonia or inflammation of the lungs, the result of cold. Very many cage-birds die from this complaint, caused in most cases by sudden exposure to a cold current of air. Birds kept in an outdoor aviary are, however, far less liable to this than those that are kept in cages indoors. As a rule, cages are hung high up on walls of rooms, to be out of the reach of cats, and so forth; but in this position the air is often hot, dry, and exhausted, and on windows being opened, air at a much lower temperature rushes in, giving the birds a chill, which often ends in inflammation. Cage-birds are delicate creatures, and it is remarkable how soon they will become prostrate through a slight cold; one cannot, therefore, be too careful in endeavouring to maintain an even temperature wherever they are kept. Of course, fresh air must be admitted into the bird-room, and the safest and most effectual way of doing this is to let it pass through fine gauze wire or muslin fixed across the top part of the window.

POULTRY AND RABBITS.

Food for fattening Fowls (*R.*).—You do not say what kind of Fowls you wish to fatten. If you are growing chickens, some three or four months old, I advise you to place them on a nice Grass run, where they will have ample space to run about, and, at the same time, be unmolested by other and older Fowls. Such birds as these are much better fed in the open, or when penned in close quarters they do not take kindly to their food, and seem to fret a great deal. As regards food, the French poultry-fatteners generally use a mixture composed of one-half Barley-meal, one-quarter Maize-meal, and one-quarter Buckwheat-meal, the whole being mixed into a paste by the addition of milk. If the birds are crammed by means of a funnel, the food is made very thin. In Sussex, the food chiefly used is ground Oats mixed with milk, or gruel made from flour when milk is not obtainable. The Oats are ground in a way peculiar to the county—that is to say, the husk is not removed, but ground with the grain as finely as possible. During the last week of the fattening process, mutton suet is added to the food in the proportion of 24 lb. of suet to 120 lb. of meal, or one-fifth suet. If ground Oats cannot be obtained, and "R." does not wish to go to the trouble of preparing suet, he can secure very good results by using Barley-meal and Indian-meal in equal quantities, varying the food by an occasional meal of hard grain. If the Fowls have passed the age I have mentioned, it would be well to fasten them in small pens, where they can rest comfortably when not engaged in eating. Three weeks, at the outside, will be ample time for fattening, and less will do in the case of chickens.—R.

Soft eggs (*P. Amateur*).—It has frequently been pointed out in reply to similar queries that the cause of soft or shell-less eggs is a deficiency of shell-making material. See that this deficiency is made up. Let your poultry be supplied with lime in the form of pounded oyster-shells or egg-shells, crushed bones, or mortar-rubbish. Feeding with forcing foods often causes the production of eggs without shells.

GARDENING ILLUSTRATED.

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ROSES.

WORK AMONG POT-ROSES.

Because these are not now necessary for a supply of cut Roses we must by no means neglect them; indeed, now is a most important time with Roses in pots. Unless a good supply of matured wood is obtained we cannot possibly have a good crop next season, for no matter how carefully and skilfully we may cultivate, it is obvious that much of our future success will depend upon the condition of wood and roots at the commencement. I want to avoid some of the disappointments many correspondents experienced last season. To do this I must ask the tyro to give more attention to his plants from the beginning—not the beginning of forcing operations, but from the time our pot-Roses go out of their first and most useful show of blossom. They are too often allowed to grow in a haphazard fashion during the summer months, when heaps of flowers can be culled from outside plants. After the strain of forcing they need help from liquid-manures, a closer guard than ever against insect attacks, and far more consideration than they generally receive as regards erratic water supply and changes of temperature. To thoroughly ripen pot-Roses I would prefer them to remain under glass until the end of July or middle of August, six weeks or so of open air being ample. A slight shade is a great help, and with a little care we can avoid that sudden parching-up which too often occurs with pot plants fully exposed to the influences of sun and wind. The practice of drying off as a means towards ripening does not find favour with me. It is much too drastic a measure in many cases. Of course, we do not want to supply water so freely after growth has almost completed and there are evident signs of ripening; but it is quite another matter to keep the plants so dry that points of young growths flag.

Many repot their Roses when the bloom has passed; I prefer to grow them on in the same pots undisturbed, and repot when ripened, just previous to pruning and starting afresh. One can thus afford some new compost as a help to the coming crop. It is too general an opinion that pot-Roses must be thoroughly established in the soil before they can be flowered freely and with any degree of certainty. When not repotted too freely at this season, we do not get such unwieldy pots to handle, and so long as the bulk of the roots are undisturbed there is no sacrifice of any benefits accruing from their establishment in the soil. New soil around the roots means a much earlier and freer break of new roots, with a correspondingly early move of fresh growth. Besides, when a plant has grown in the soil, much of the sustaining properties are exhausted, and no amount of artificial feeding will have so beneficial an effect in the earlier stages as a little fresh compost, feeding this again after the roots have got well to work.

When pot-Roses are stood in the open do not select a position exposed to the full effects of midday sun. Nor do I approve of allowing the sun to shine direct upon the sides of the pots. If you will place your hand upon a pot that has received an hour or two of a July to September sun you cannot fail to understand how very parching such must be to the roots of Roses or any other plant. We half plunge all of our Roses when placing them outside. They are stood upon a concrete bottom, over which a good dressing of soot is first placed, a mixture of Cocoa-nut-fibre and sand being placed between the pots. This is cool, without being wet, and I am quite convinced is far better than the extremes of full plunging or none. If you turn a healthy pot-Rose out of its pot you will find its best and most promising roots at the bottom. The part plunging secures these against sudden drought. Always give a little extra attention to water supply during the first few days after removal to the open air.

Further notes upon their treatment will appear in season. What I wished most particularly to point out was the need for a little more care than is generally afforded our pot-Roses at this season of plenty from the open air, and when so many of our favourite winter and spring bloomers are too sadly neglected.

P. U.

PACKING ROSE-FLOWERS.

The time is fast approaching when everyone who has a quantity of Roses will desire to share these lovely flowers with their less fortunate friends, or it may be some beautiful specimens are obtained, and we desire to show our skill in their cultivation to a distant but ardent rosarian. Exhibitors are only too well aware of the fact that Roses cut between 9 a.m. and 4 p.m. on a very hot day are almost useless the following day, whereas those cut in the evening or early morn open out as fresh as it is possible to obtain them. Everyone loves a pure fresh Rose, and there is no reason why they should not be sent from one end of England to the other and be received as fresh as when they were cut. I have found from experience that Roses cut late in the evening—say from eight to nine o'clock, and in the morning from three to four o'clock—withstand the heat of a summer's day, a warm room, or a stifling exhibition tent far better than those cut at other times. Roses should always be put into water immediately they are cut, and if to be sent per post they should remain in the water not less than two hours to enable them to draw up a good supply to last them on the journey.

Small boxes only should be used to pack them in, and never more than one layer in a box. If a quantity is to be dispatched per rail crates should be made to hold these boxes, or they may be strung together in convenient lots. A very good sized box measures 18 inches long, 8 inches wide, and 3 inches deep. In packing the flowers to travel a distance I line the box with wax-paper, then put a layer of long Grass in the bottom of the box. The Roses are laid in the box one at a time, and when full another layer of Grass is placed upon the flowers, finishing off with wax-paper. It is almost unnecessary to say that the Roses should be cut young, certainly not more than half blown; indeed, some of the button-hole Tea varieties are best cut in bud, just when showing colour. They will then develop and improve in the water. Some varieties of Tea Roses, such as Maréchal Niel, positively improve in colour when cut young and placed in water. When an exhibition is approaching, I have often cut a specimen of this and other Tea Roses two or three days before the show. The flowers are kept in the meantime in a cool cellar underground, and I have been astonished at the way they have lasted.

W. E.

W. A. Richardson Rose-flowers of poor form.—I should feel much obliged if you could tell me the cause of my Rose W. A. Richardson coming such a bad form (as per enclosed specimens). It was planted four years ago against a trellis-arch, facing north-west, and has come bad each year. The subsoil here is of stiff clay. Nothing whatever shades it?—Alice.

*** We can only suggest that your position is too exposed to cold, and the flowers are pinched. You might improve by lightening your soil. Dig in some light stable-manure and soot next winter.

Deformed Rose-buds (*E. B.*).—Your Rose-buds were formed about the middle of May, at which time we were having very cold weather, so much so that many Rose-buds and fruit were entirely black with frost. This checked the outer part of your Rose-buds, but the centre still endeavoured to grow, and hence the abnormal condition of those sent. Shorten the shoots back a few inches and trust to a second crop; the buds formed in June will be free from this.

Canary-yellow Roses that flower well.—Will you give me the names of two canary-yellow Roses having the shape of Catherine Mermet that will open their blossoms well at the foot of a south wall 4 feet high? I may mention that Jean Ducher and Perle de Lyon refuse to open their flowers at all well, whilst W. A. Richardson and C. Mermet, Dr. Grill, and Mme. Eugène Verdier do splendidly.—T. Oliver Hughes.

*** There are no real canary-yellow Roses the same shape and size as Catherine Mermet; I wish there were; they would be as valuable as Maréchal Niel. I think if you try Caroline Kuster and Medea for pale yellows, Climbing Perle des Jardins and Mme. Chauvry for strong growers of a deep yellow shade, you will be pleased with the result. Jean Ducher is a bad one to open outdoors, but in a hot season is splendid. Perle de Lyon I only grow because of its exquisitely coloured foliage, and cut it for decoration before opening.—A. P.

Tea Rose The Bride.—I wish "H. S," who writes on the merits of The Bride Tea Rose, would tell me how he grows it so easily? My own experience has been contrary.—N. H.

*** I wrote of Rose The Bride more especially as an indoor variety, and as such, under varying conditions, I find it an excellent grower; so, too, is the other sort mentioned—Perle des Jardins. The latter is grown by cultivators for market by the thousand. I have recently seen several greenhouses filled with it, and it is considered

the most profitable variety known. Some of the plants, which are in pots, are a dozen years old, and they continue to blossom throughout the summer, up till Christmas. This and The Bride do remarkably well with us in the open. Our soil is a sandy loam, consequently suitable for Tea Roses. There is one item which may account for the failure of "N. H." Are the plants grafted on to the Brier-stock? This is an essential point with us, as we find a few only—Marie Van Houtte is one—of the more vigorous varieties of Tea Roses that do at all well when worked on the Manetti-stock.—H. S.

Roses with green centres.—Will you kindly tell me in your next number why so many Roses this year have green centres? I enclose two buds that you may see what I mean.—J. D. F., *Rotherfield.*

*** The cold and continuous wet weather experienced early in the season is accountable for so many green-centred Rose blooms this year. The plants received a check, consequently the formation of the buds in the embryo state was interfered with.

Box for exhibiting six Roses (*M. Welsh*).—The recognised size for a box to exhibit six Roses is 15 inches in length, and 18 inches wide (deep), 4 inches high in front, and 7 inches high at back, holes 6 inches apart, in three rows of two each. These are made with hinges which may be parted at will, and on which a lid is made to cover the bloom. The boards are usually arranged neatly with nice fresh green Moss.

Climbing Roses.—I want to grow a few climbing Roses in my greenhouse. The border is about 3½ yards long. I want to train them up one side of my span-roof. Can you tell me how many to grow in the border named, and what sorts? I want them specially for button-hole work. Yellows and tinged varieties preferred.—Enquirer.

*** Three plants will be ample. We would choose William Allen Richardson, Mme. Chauvry, and Mme. Abel Chatenay.

Banksian Roses.—My Banksian Rose, planted on a sheltered side of the house facing east, looks flourishing, but never blooms. Can you tell me the reason? It has been planted four or five years.—41st.

*** If your Rose wood does not get properly ripened it cannot flower. It may also be that you prune too hard. Never prune away ripened wood of the Banksians. This year we have seen some grand specimens, but your eastern aspect is not particularly favourable. It is difficult to say why a Rose does not flower without the slightest hint respecting the treatment given.

Tea Roses.—I have half-a-dozen Tea Roses, planted in the garden last November, which are in full bud and very promising, but I want to take them up and grow them inside as pot-Roses. Can I hope for success? When should they be taken up, and how treated?—Inquirer.

*** Lift your Roses in October or early November. They will be good for pots if free growers. You do not say the varieties, and this is a great point where pot-Roses are concerned. Pot into rather small pots, well drained, and use a compost of leaf-soil and turfy loam in equal parts. Stand on a north border and thoroughly water as soon as potted. Do not attempt to force them until January, when prune fairly hard, and give a temperature of 45 degs., rising to 55 degs. and 60 degs., as growth advances. You cannot move them this summer.

Rose l'Ideal.—This remarkable Rose is unique in the number of tints of its flowers; yellow and metallic-red predominate, these being variable in different localities and seasons. Like Wm. Allen Richardson, it belongs to the Noisette or cluster-flowering class. In other respects, too, it favours the charming Rose named, and should be planted to be trained against a wall or grown as a standard. Although l'Idéal was raised as far back as 1887, it is far from common, and one rarely meets with a large plant of it.—S.

Rose Souvenir de Mme. Sablayrolles is a Tea at present very little known, but it certainly will soon be in all collections. A cross between Devoniensis and Souvenir d'Elise Vardon should be a sufficient commendation of this variety to exhibitors. The habit is more vigorous than in Souvenir d'Elise, making good, stiff, solid wood. The buds before opening give one the impression that they are those of Gloire de Dijon or other similar kind. The colour is of a rosy-salmon hue, and yet a beautiful apricot tint appears to pervade the flower of this variety. The shape resembles that of Souvenir d'Elise, and we shall see this variety ere long in most exhibition stands.—A. Piper.

Rose William Allen Richardson.—To grow this most useful Rose successfully, certain special cultural details must be attended to. My experience is that it does best either on its own roots or budded, so as to form a low bush, the point of union being let into the soil at planting-time. Why so many fail with it is that they use the knife too freely, which it will not endure at any cost. It needs ample room and likes to be let alone year after year, all the pruning that is required being removal of any weak shoots and duly balancing any that may have taken the lead during the summer. It is one of the hardiest of Roses, standing an east aspect well and being very little subject to green-fly or other pests. It does very well on a wall provided there is ample scope for development, and the young growths are laid in annually at almost their full length, sufficient being retained to furnish the bottom of the wall.—J.

Rose Mme. Delville (H.P.).—Evidently a seedling from Alfred Colomb, this Rose partakes a great deal of the character of that well-known variety. What is most marked about this variety is the combination of colours, the prevailing tint being a deep rose, but the petals are reflexed and silvery, giving the flower a most unique appearance. The shape is globular and the size quite up to the exhibition standard.

Rose Viscountess Folkestone.—What a charming Rose this is. It is one of the earliest as well as most constant in flowering, colour flesh white. It belongs to the Hybrid Teas and is sweetly scented. The growth is free, but branching rather than rampant, and it is therefore unfitted for climbing. It makes a lovely bush or standard.

TREES AND SHRUBS.

EVERGREEN SHRUBS ON SLOPING BANKS.

On sloping banks where Grass would not grow or perhaps would not be desirable, some of the evergreen shrubs will thrive well, and produce a good effect with but little trouble after they are once well established. The formation of such a "bank" of evergreens is a simple matter; it is only necessary to plant thickly enough at the outset, and afterwards to keep the shrubs at the required height by regular pruning. Sometimes, however, such plantations are allowed to grow as they please, and then in a few years they become an irregular thicket, and the question arises how best to deal with them. The process is generally a summary one and consists in cutting the evergreens down to the desired level; if there be blanks to fill up, a ready way of doing so is to saw the stoutest and tallest limbs of the nearest large shrubs half through or more near the ground, and bend them down, pegging their points well into the ground with strong pegs. There is no danger of these broken limbs dying if a little bit of wood and bark be left at the cut, and they will soon root out just at the point where they are pegged down; and then a fresh and vigorous growth of young shoots will push out from the limb so treated along its entire length. I have seen acres of Portugal and common Laurel operated upon in this way with perfect success. Shrubberies of Laurels which have got too high and lanky may be restored in this way unless the bushes are very old or feeble. The Laurel is not, however, the only eligible plant for covering banks, and among others must be named the Ivy, which makes an excellent covering, thriving in any aspect, and growing on places where the soil is too thin or too poor to sustain a good Grass turf, or even on bare rock. It should be planted thickly at first, and trained over the surface to be covered for the first season. Afterwards it will take care of itself; but it should be cut close into the ground every spring with a pair of shears in order to keep it to an even surface. Nothing makes a denser or a greener earth-covering than Ivy so treated, and if the soil around the roots be not too rich, the leaves will not get very large; they look best when numerous and small. The great thing is to clip the Ivy well in about the beginning of April. It may then break out into bold leafage and shoot growth immediately afterwards. Another plant well adapted to the purpose in view is

Cotoneaster microphylla. Its pretty and numerous white flowers, its dark green, shining foliage, and in autumn and winter its never-failing crop of red berries, render it a general favourite for walls, and it does as well or better trained on the ground. It should be pegged down close to the soil, and when it has covered the allotted space, the more it is cut in reason with the shears the denser it will grow. The young growths will require to be cut back once or twice during the summer, taking care not to damage the berries, which will then be coming to maturity. Clipping, if done with ordinary care, will not hinder it from flowering and fruiting freely, but rather promote a fruit-bearing habit, as the topping of the young growths has much the same effect upon it as summer pinching has upon fruit-trees. Hardly less suited for banks than the above is the ever-green scarlet-berried Cratægus Pyracantha, succeeding with the same treatment as the Cotoneaster and growing much faster, but not bearing its bright scarlet berries in such profusion until it gets a few years old. Pinching back the shoots somewhat, however, and a not over-rich soil will promote early fertility, and when it does bear fruit freely there is no winter-berried plant which is so effective, for it is so very bright in colour. Next to these comes the popular Laurustinus, second to none as a flowering evergreen; it is also an accommodating subject, and will grow easily enough if clipped; but not to lose the flowers and yet keep an even surface it should be pruned just after flowering and at no other period, otherwise the little terminal trusses of blossom will not have time to form before winter, but, of course, straggling shoots may be cut out at any time. B.

The Black Broom (Cytisus nigricans).—The specific name of this Cytisus is said to have been derived from the plant turning black in drying, certainly in a growing state there is nothing black about it. If stopped occasionally when young it forms a freely-branched bush, that reaches a height of a yard or more, whose slender stems are clothed with trifoliate leaves, and terminated by a spike of bright yellow flowers of a hue distinct from that of any of its allies. In hot dry soils a bed of this species forms a very attractive feature from June almost till the autumn. It is a native of Central Europe, from whence it was introduced in 1730, and is thoroughly hardy. If a bed is planted with this species, one of the dwarfer-growing kinds may be employed for an edging. A very suitable one is the double-flowered form of the common Genista tinctoria, which blooms with great freedom and for a considerable time.

Double-flowered Bramble. — Be the season ever so hot and dry this Bramble will yield a wealth of its charming blossoms during the month of July and onwards. In the wild or semi-wild garden a suitable spot may often be found for it, and the finest example I ever saw was covering a high fence on the top of a stony bank. The flowers, which are borne in the greatest profusion, are individually a good deal in the way of some of the double Daisies, being composed of a great number of closely packed quilled petals of a very pleasing shade of pink. It is known in the Royal Gardens, Kew, as Rubus ulmifolius flore-pleno, but may be often met with as Rubus bellidiflorus. There is also a double-flowered Bramble with white blossoms, but it belongs to a different species, R. thyrsoideus flore-pleno, and taken altogether it is not so showy a plant as the other. The double pink form first alluded to will, if required, form a decidedly ornamental isolated specimen, if about three stout stakes are driven firmly into the ground and the shoots secured thereto. After this they may be allowed to grow at will, when a dense mass with the branches arranged in a very informal manner will be the result. —T.

Itea virginica.—This little shrub—a near ally of the Escallonias—is very seldom met with, and still more rarely in a flourishing

condition, as where the soil is at all hot and dry it fails to grow freely. After seeing it in this plight, I was agreeably surprised to meet with a bed of it at the back of the Palm-house at Kew, in which not only were the plants—little bushes of 18 inches or 2 feet in height—in the best of health, but also profusely laden with blossoms. The flowers are small, whitish, and arranged in simple racemes. True, they cannot be regarded as showy, but seen in quantity, as at Kew, they are decidedly pretty and attractive. The general appearance of this Itea when in flower suggests one of the Pepper Bushes (Clethra), but even the earliest blossoms of these latter are not yet expended. While this Itea finds a congenial home in one of the sunk beds at Kew, where the subsoil is cool and moist, in many gardens, it is true, a suitable spot could not be found for it. Conditions favourable to many of the smaller ericaceous plants will suit it perfectly. Flowering as this Itea does, during the month of July, when so many of our hardy flowering shrubs are over, it is thus additionally welcome.

A border of Sweet Rockets.

Transplanting Broom (*Bexhill Institute*).—It is now too late to replant the Broom, or to prune it either. The middle of September or the end of March it may be moved. Replanting a large plant of this shrub involves considerable risk, as the roots are not fibrous, therefore do not readily hold the soil together. It would facilitate the safe removal if you dug a trench around the plant in September next, 2 feet from the stem all round, filling it in again, well-watering the soil if the weather is dry. The following March the plant would be then more safely removed; the soil would be all the more likely to adhere to the roots. This is important, as less check is then experienced. When planting thoroughly soak both the old and new soil, treading it firmly. Mulch the surface with half-rotted manure to aid in retaining the moisture, as so much depends upon this in getting newly-planted trees and shrubs to start into growth the first season. Directly blossoming is past pruning should be done. While Broom does not take kindly to pruning, its tendency is to upward growth, and in consequence does not readily break into growth from the old and hard wood. Therefore prune as little as possible. Give the plant an open position, allowing it to grow freely.

DOUBLE ROCKETS.

Double Rockets are among those flowers to which the term "old-fashioned" is applied—a word which to the multitude conveys the idea of something superseded, on account of lack of merit, by newcomers of more brilliant attractions. To the select few, however, old-fashioned things have the charm of association, independent of their intrinsic worth, connected, as they are, with the less ostentatious beauties of the past and fraught with the fragrant memories of old times. The Rocket, however, although neglected, is quite able to stand on its own merits, and with its white spires of bloom and the perfume that on still, dewy evenings of early summer fills the soft air with exquisite fragrance, it possesses charms which are certainly not inferior to those of the gaudy, scentless Pelargonium, by which it and other old plants have been ousted.

Of yore, despite bars and bolts, the hidden daughters of Araby revealed to their chosen the secrets of their hearts, and oftentimes in like manner the unseen occupants of sequestered gardens waft, by the aid of their accomplice the wandering zephyr, sweet messages to the passer-by, and to one who loves flowers and can rightly interpret their language, Rockets, Clove Carnations, and clustering Rose silently, by their ambrosial breath, disclose their presence within the secluded walls of their sanctuary as surely as if their loveliness were visible to the eye.

Although grown to some extent in herbaceous borders, it is rarely, save in cottage gardens, that double Rockets are seen at their best. One such garden is now in my mind's eye. It is but a small plot of ground, yet it is filled with sweet old flowers. There the Rockets grow in masses; from the glaucous cushions of the white Pinks arises the delicate essence from the countless fringed blooms; Madonna Lilies lift their snowy spires; the Moss Rose and Sweet Brier exhale from flower and leaf their mingled fragrances; the Jessamine above the porch distils its sweetness from a thousand white stars, and the passing breeze is odorous with the scent of the blossoms that crown the tall Lilac-bush with a veil of rosy-lavender.

The double white Rocket (Hesperis matronalis alba-plena), though strictly speaking a perennial, does best if divided every autumn and given fresh soil. Treated in this manner, strong-flowering plants are secured and the stock is also rapidly increased. It is not necessary to replant each year in a different spot, removal of a portion of the soil and the substitution of some fresh compost being quite sufficient to encourage strong and healthy growth. The flowering season is a prolonged one if the precaution of removing the central spike as soon as faded be taken, the plants thus relieved producing a good show of bloom from the secondary shoots.

There is, besides the white form, a purple variety of the double Rocket, which is, however, far less ornamental. Such fragrant flowers as these should be in every garden, for perfume is almost as valuable an accessory to a blossom as are beauty of form and colour. F.

Forget-me-not from Ireland.—I send you a Forget-me-not which I raised in Ireland and have shown at the Botanic Gardens, Belfast. It is a new one, and I intend to name it Thompson's Diamond Jubilee Myosotis. It is perfectly hardy, and has been in flower since February out-of-doors, and is flowering still. I have one plant which has covered 3 feet each way. I send some of the foliage. The flower-spikes are 2 feet high at present.—Robert Thompson.

*** Thank you for your letter and specimen, but we think it is simply a large variety of the Swiss Forget-me-not (Myosotis dissitiflora), a variety known in England already. It is a very good plant, but we should advise you not to give it a name as you suggest, as the plant is already known.

Eulalia japonica variegata.—Looking at the ornamental character of this fine Grass, one cannot but help thinking that it might be utilised for floral decorations much oftener than it is, as well-grown examples in pots are highly ornamental, especially when pots 10 inches and 12 inches are used and the plants well established in them. The variegation is so marked and the habit of growth so distinct from that of other plants used for the same purpose, that it always finds admirers, and when grown in a cool-house it is available from early summer until autumn. I have found plants from 3 feet to 4 feet high very useful to associate with Fuchsias, Zonal Pelargoniums, etc., for forming groups in vestibules, front halls, and similar places. The plants give very little trouble; all they want is repotting once a year and moderate supplies of water when in active growth. It is a hardy plant, and, therefore, only requires sufficient protection during the winter to prevent the pots being injured by frost. I may also mention that this Grass is much valued in a cut state for decorations, as there is a certain amount of gracefulness in the bearing of the stems when suitably arranged.—J.

Lychnis viscaris fl.-pl. is just now in big masses, and is a strikingly beautiful hardy flower. It is an old garden favourite, still far too seldom seem. The flowers are borne in spikes about 4 inches long, and the extreme ones form quite a cluster. The variety is marvellously floriferous, and it is a capital thing to furnish cheap flowers for cutting. Those who want good red, white, and blue flowers in abundance should grow this Lychnis, Mrs. Sinkins Pinks, and autumn-sown Cornflowers. The Lychnis is easily increased by division, or cuttings put in at end of summer.—D.

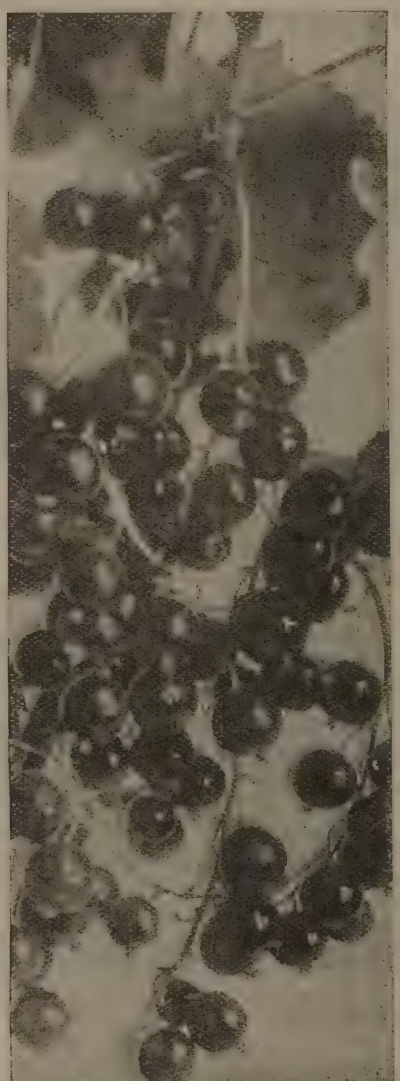
FRUIT.

RED AND WHITE CURRANTS.

In the anxiety for extra fine Apples and Pears bush fruits in many instances receive only scant attention, and nothing suffers sooner or to a greater extent from neglect than Currants. Given good culture, the length of time Red and White Currants will continue to yield heavy crops of the finest fruit is astonishing. One of the errors common in the culture of this fruit is leaving too many shoots on the young plants the first year from the cutting; consequently from the very start the free access of the sun's rays is hindered, the result being barrenness and disappointment. If the weather is open and free from severe frost the month of November is the best for taking the cuttings, and the prunings may be carried into a shed or greenhouse and cut into lengths averaging 15 inches. All eyes or buds on the lower portions must be removed to a height of 9 inches, from which point the first tier of branches will start. The cuttings should be inserted 4 inches deep in rows 1 foot apart, with the same distance between the cuttings, the ground having been previously well prepared. When growth commences, all surplus shoots not required for the foundation of the future tree should be removed, leaving four or five well placed ones to appropriate the whole of the sap. At the end of the first season's growth the young plants should be moved either to their permanent quarters or to some plot where they can enjoy more head room and reap the full benefit of sun, light, and air. The ground for Currants must be prepared with no niggardly hand. If of sufficient depth to allow of trenching, let this be done, and if the soil is at all strong and retentive of moisture avoid the use of rank or strong manures, rather working in a good percentage of very short littery material from the cow or pig-yard that has become well saturated with the urine, also any charred rubbish, road-scrapings, or wood-ashes which may be at hand. These last ingredients are really of more importance than the manure where the soil is strong. If large quantities of rich decomposed manure are used in such plots, the branches are liable through immaturity to partial or entire withering just when the fruit is half ripe, particularly in the case of the red varieties, these being naturally of stronger growth than the white sorts. Where the soil is light or sandy ordinary spit manure may safely be used, this being best incorporated, not by the usual process of trenching or deep digging, but by first taking out a good-sized opening at one end of the plot, and after spreading the manure over the surface, work it in regularly, throwing the soil forward into the opening referred to. By this means the roots of the young trees reap the benefit of the manure from the very start, and in a more natural way than when it is buried in a thick layer at a considerable distance from the surface.

As in the case of most other fruits, spring preparation of the ground and autumn planting are best, especially on sandy soils, the plot being trodden or rolled at intervals through the summer months, as a too open, porous root-run more often than not ends in a puny growth, this by midsummer becoming a prey to black aphis or blight. Six feet apart all ways is a good distance for permanent trees. If a dry summer should follow a good mulch of rotten manure will prove of much value, it being borne in mind that upon the kind of growth made the first season the success or otherwise of the trees depends. At each pruning exactly as many main-branches as are required for preserving the form and outline of the tree should be retained, all intermediate shoots being closely spurred in. The terminal growths, however, may be left some 12 inches or 15 inches long; by this free method of pruning twice the weight of fruit may be secured than by the haphazard crowding adopted by so many. A liberal dressing of manure should be spread about old trees in winter or early spring, and slightly pricked in with a five-tined fork, digging with a spade being ruinous. I have sometimes raked away the stale soil and exposed some of the surface roots, afterwards laying on them any old soil of a fairly sustaining nature, adding thereto a good sprinkling of some approved fertiliser. Market-growers and private gardeners who sell their surplus fruit should pick half the crop as soon as the fruit is coloured, thinning out the bunches regularly so that the air can pass freely through and around the remaining clusters; the fruit will then hang in sound condition for a considerable time if protected from birds, and will command a better price later in the season when Strawberries, Gooseberries, Cherries, and Raspberries are over. Good clean samples of both Red and White Currants will always command a good price in first-class shops.

Of all the red varieties, I prefer La Versaillaise. It certainly has not the best habit of growth, many of its branches taking a downward direction, but it is an enormous cropper, and the fruit is of the first size and quality. The Red Dutch (the variety usually grown) is a good free-bearing variety, the fruit bright red and briskly acid. Raby Castle—also called May's Victoria—is a great bearer and a good



Currant La Versaillaise.

grower. The Red Cherry, with large, juicy, deep shining red berries of a brisk acid flavour, is one of the best for garden culture. Of the white varieties, the White Dutch and the Cut-leaved White are the two best. J.

Peach-leaves blistered *(J. H. Hampden).*—Your Peach and Nectarine-trees are affected with a disease or fungus known as Peach-blister. The cold winds experienced during the early part of April and even as late as May are responsible for the attack. Trees exposed to east or even south-east winds almost always suffer from this defect. The winds alluded to seem to chill the tender, succulent leaves, checking natural growth, and setting up the fungus alluded to. The only remedy is to wait for warmer weather, and gradually pick off all affected parts, as they are absolutely useless. Their removal encourages a more natural growth. The trees would be improved by syringing with soft-soap and Tobacco-water. Thoroughly soak 2 lb. Tobacco-paper in 4 gallons of hot water, and dissolve 2 lb. soft-soap in hot water. This quantity will suffice for 50 gallons of water, used in a tepid state and with a fine-rosed syringe. It is not the quantity of the wash that is beneficial, but it is thorough wetting of every portion. When the nights are warm syringe the trees every afternoon about four o'clock with clear tepid water. This will encourage new growth. The Strawberries are from plants of an inferior variety, or they were affected by the recent severe frost which crippled so many plants in various parts of the country.

CORDON GOOSEBERRIES.

Few nurserymen have done more to popularise this form of Gooseberry-growing than have Messrs. Veitch and Sons. Their exhibits of single-stem plants, heavily laden with fruit, occasionally seen at the Royal Horticultural Society's meetings, have indeed been instructive object lessons. Many private growers and gardeners have profited by these lessons, and in many directions cordons are now grown. In one garden of a very high-class nature, I saw recently a quantity planted about 2 feet apart and tied up to stout stakes. In this case, however, the true cordon form was being rather departed from, as summer pinching was not practised, the chief pruning being done in the winter, and the plants were vigorous pyramids rather than cordons. That so trained they may do well there is no doubt, but these are not true cordons. In another garden, that of a lady amateur who is really her own gardener, I more recently saw true cordons, ranging from 3 feet to 4 feet in height, trained up to a stout wire-trellis. The plants were about 15 inches apart and kept hard pinched, so that there were no projecting shoots. These cordons were laden with fruit, and very fine it was too; a more successful example of such form of culture I have not seen in any similar garden. Not only do the berries come very fine, but they ripen thoroughly, and are both kept clean and protected from birds by throwing nets over them. It is, however, worthy of note that some varieties seem better fitted for the form of training than others, and to have a very equal growth; it is best, on the whole, to have these cordons grouped into strong and moderate growers, so as to secure uniformity. In this lady's case a few, stronger than others, had more than reached the top of the trellis, and rather than have them hard pinched back to the wire, I have advised they be run along the top wire horizontally, to help furnish where the more weak growers were lacking. The primary object of cordon-trained Gooseberries, however, should be to produce superior dessert fruit, and those who appreciate good, ripe, well-flavoured varieties will admit that few dessert fruits are more delicious or wholesome than are well-ripened Gooseberries. When grown in ordinary bush form all that can be desired of fruit in a green state can easily be obtained. Bushes, however, never give such nice table fruits as cordons do; and if a selection of the best flavoured — Warrington, Whitesmith, Green Gage, Golden Drop, Hedgehog, etc.—be planted, then is secured the very best results as to size and flavour Gooseberries can give. In preparing for Gooseberry cordon-planting it is well to fix on the edge of a garden quarter looking south, to trench the ground two feet deep, and add to it a moderate dressing of well-decayed manure and a thin sprinkling of crushed bones, all well mixed with the soil. The next thing would be constructing a trellis, which should be about 4 feet in height, composed of stout Larch posts at either end, and one other at about every 10 feet; but a trellis 40 feet long would do well with two intermediate wood supports. The wire should be stout, and galvanised or painted, and be run along at intervals of 9 inches. The cordon-bushes, obtained from a nursery at about 10 inches in height, might be planted at from 12 inches to 15 inches apart, close to the trellis and on the walk side, being for a time assisted by the aid of sticks. Planting would be done in October, and if the trellis has been fixed at 2 feet from the edge of the path, the cordon can always be attended to without appreciably treading the

soil. After planting, which should not be done deeply, the roots being neatly laid out evenly, first in the shallow holes and covered with fine soil, then gently shaken and pressed down with the root, a moderate mulch of long manure may be laid over the soil, and that will help to exclude severe frosts. Until the stems of the cordon become stout and erect it is just as well to tie the upright stems to these sticks, they in turn being tied to the wires. In a year or two these sticks may be removed. The great object of the grower of cordon Gooseberries must be to stock the stems full of fruiting-buds. That is done by allowing the leader or main top shoot only to grow freely, whilst all side shoots are pinched back to about three leaf-buds after they have made half-a-dozen leaves, and as the outer of the three buds will certainly push new growth later, such new growths should also be kept hard pinched, also all through summer as needed. That pinching not only keeps the fruiting-buds close home, but the base buds on the first spring shoots swell up and become stout bloomers the next spring. Winter pruning is limited to shortening back any growths that may tend to make the cordons broad or branching. It is easy by throwing fish-nets over the whole trellis as the fruit ripens to keep off birds, and when that is done the fruits will hang a long time and suffer little from cracking.

Black and White Grapes mildewed.—We have a greenhouse (not artificially heated) containing Black and White Grapes which have been badly mildewed for about a fortnight. The house faces the west. We keep Arum Lilies and plants in it, which are watered early in the morning only. We open at 8.30 a.m. and close at 6 p.m. The sun is not on the house before it is opened. Would any alteration in the above prevent mildew? What can we do to get rid of it now it has come?—A. K.

*** Mildew is generally caused in such a vinery as yours appears to be by the admission of air through both the top and bottom ventilators, also by leaving the door open, thus causing a draught, which is the worst evil Vines have to contend with. Except in warm weather, air cannot safely be given to the vinery both at the top and bottom at the same time. Your plan also of closing the house at a stated time—especially so late as six o'clock—is not good. Close the house when the temperature inside falls to 60 degs. If the Vines are the first object, then the plants must grow under the conditions suitable to the Vines. But little can be done this season to check the spread of mildew, certainly less to save the crop. Sprinkle flowers of sulphur over all affected bunches and leaves. Paint the stems of the Vines and the hot-water pipes also with flowers of sulphur mixed to the consistency of paint. Sprinkle sulphur about on the stages and paths, so that the fumes will arise and kill the mildew fungus. Keep the house warmer during the day, and close early at 70 degs. to aid in maintaining more heat during the night. Water the plants just sufficient to keep them growing, but syringe nothing; in fact, keep the air as dry as possible.

Apple Irish Peach.—This most excellent early dessert Apple cannot be treated as an ordinary espalier so far as pruning is concerned, as it fruits on the extremities of the previous year's growths, which I carefully thin out in summer, generally in July, leaving only the very strongest and tying them at equal distances over the wires in any direction. Their number can be still further reduced at the winter pruning, as it can then be seen which shoots have fruit-buds on their points and which have not. My opinion is that Irish Peach would do well in bush form in sheltered gardens having a deep, rich, and rather light soil. Its flavour last season, owing to the extra amount of sunshine when ripening, was delicious.—J.

Geum montanum.—For the past month this free-flowering border perennial has been full of its richly-coloured flowers of deep golden-yellow, and giving promise of a long-continued display. The flowers may be cut with long stems, and this makes them very useful for all kinds of vase decoration. The plants are easily managed, and are useful for planting in the rock garden.—D. B. C.

THE KITCHEN GARDEN.

NOTES ON CARROTS.

Many of the new strains both of the long and short sections that have been introduced of late years are really an advance both as regards flavour and colour, to say nothing of the more perfect symmetry and suitability for exhibition. Moreover, those having rather shallow soils to deal with may now grow Carrots to their hearts' content, there being so many fine strains of the stump-rooted section, whereas many of us can remember the time when there was very little choice in short varieties, the old Short Horn having to be grown by everybody. There might be a worse Carrot than this, but its chief drawback lies in its somewhat prominent core, which means waste, as cooks often discard it, using only the outside, which becomes soft much sooner when boiled, the centre, they say, spoiling the soup. It has a splendid constitution and keeps plump and sound much later in spring than some of the newer sorts. Market growers still cling to it on account of the weight procurable per acre, just as they do to the old Altringham and Long Red Surrey, which requires, of course, a deep soil to prevent crooked, ill-shaped roots. I have forced Carrots early for many years, and have tried most of the new sorts as they appeared. Parisian Forcing I believe to be the

Carrot Matchless. From a photograph sent by Mr. J. C. Tallack, Livermere Park Gardens, Bury St. Edmunds.

very earliest Carrot in existence In form and colour it favours the old French Forcing, and is probably nothing else than an improved form of that standard sort. When cooked it is of a sweet, nutty flavour. For a second early variety the popular Nantes is hard to beat if colour and quality alone are taken into consideration, but I have proved that a variety called Market Favourite, and which has been in commerce about six years, will beat Nantes by from ten days to a fortnight in coming into use, besides which it is of excellent flavour and has a very small core. One of the very best Carrots in the stump-rooted section for general use is Scarlet Model, which, although growing a trifle longer than the rest of its class, is just the Carrot for shallow soils and keeps sound for a long period. Coming to the intermediate section, it used to be thought that James's strain would never be superseded, but Matchless and the new Intermediate are certainly in advance of that popular market Carrot—at any rate, so far as appearance is concerned—though I fail to see the least difference in quality. Where old Carrots are required in quantity very late in spring, a few rows of both the Long Red Surrey and Improved Altringham may well be grown, as in my opinion they have no equal for keeping. A dry store is ruinous to Carrots, both firmness and flavour leaving them under such conditions. The best way by far to keep them is to clamp them in the same way as Potatoes, first covering them with a little rough litter or, better still, Bracken, and finally with a few inches of soil. A few roots can then be taken into the root-shed at intervals for use in severe weather. A Seakale or Rhubarb-pot, if inserted at the top of the clamp, will act as a air shaft, and can be stopped in very severe or snowy weather, if thought necessary, by thrusting in an armful of Straw or Bracken. I find Short Horn or stump-rooted Carrots do well on ground that has carried a crop of Peas during summer, for which it was well manured, this being ridged up during winter in order to get it well pulverised and sweetened by frost and wind, soot being freely sown broadcast once or twice where wireworm are troublesome, so that the rain can wash it in. J.

TROUBLES IN TOMATO CULTURE.

At this season one may note the number of replies through the correspondence columns of Gardening to those who have difficulties in the growth of the Tomato, which points to the fact that a plant so easily cultivated is not understood generally. I would like to refer to a few of these troubles, and in giving my own practice indicate how I guard against them.

Two span-roofed houses, each 100 feet long, are devoted to Tomato culture through the summer, so that I have plenty of scope to test any system. And in regard to the present state of the plants, they are clean; that is, free from disease of any kind and bearing a magnificent crop. The lowest bunches of fruits in some cases quite touch the earth, and the flowers continue to "set" as the trusses develop all up the stem. I would be pleased for anyone interested to see them.

First, then, as to the earliest fault—namely, failure to get the plants to produce fruits low down the stem. This is in most cases due to a slovenly way of raising the young plants. Seeds are sown thickly, and are allowed to run up spindly in the seed-pans or boxes before being potted singly, and when the latter takes place they are too often allowed to grow in a position a long distance from the glass. In such a position the young plants are suffered to remain a long time, until, maybe, they are a dozen inches or more in height. Then there is that mistaken idea that the growth must be starved in the pots until the first truss of bloom appears. These are all common errors. I make a point of

Sowing the seeds

in the boxes about an inch apart. The moment they may be conveniently handled (just as the first perfect leaf is coming from the two seed leaves) they are potted singly into 3-inch pots. This time would be early March, and in the moderate temperature of a greenhouse. I water them and put the plants at once on to a shelf near the glass. They quickly recover and commence to grow sturdily. In two or three weeks nice stout little plants about 3 inches high are obtained. They are then planted in their permanent quarters. It matters very little what soil is used up to this stage, so that I have not described any. The plants are carefully taken out of the pots and stood on the bed of earth about 14 inches apart along the sides of the houses to run up a trellis of wire fixed 10 inches from the glass. The manner of planting is important, because I try to get surface roots from the first, and keep them there instead of making a hole, then place a mound of earth around the ball of each plant. The plants grow quickly and short-jointed. In a week or so a little more earth is put about the roots; and so on periodically as the feeders come through the soil. I use the compost in which Chrysanthemums were grown the previous year. This is saved, the rubble used for drainage and all; the whole being mixed, so that my Tomatoes have a fair quantity of broken flower-pots, brick rubble, and the like, to grow in. My idea is that the soil shall be poor in the sense of being free from animal manure, and porous, so that a quantity of water may be given without becoming sour or clogged.

Rich soil

is the cause of no end of Tomato troubles. The plants in such grow rapidly and soft, taking to the eye at first on account of their large foliage and thick stems. We frequently hear persons remark with pride as to the size of the stems of

their Tomatoes, and I always await a different result when the results are weighed. Soil containing animal manures, and the consequent soft growth, is a prelude to that other trouble known as the spot in the leaf. This disease is called Cladisporium fulvum.

The soil is one cause. Others are partly ventilation and careless watering. It rarely comes in the very early stages of the plant's growth, because at that time fire-heat is usually applied in a limited manner to rear and start the plants. But I would give air in abundance from the first. This assists in the object I have named—a short-jointed growth. The roots are kept fairly dry in dull weather during the first stages, and, in fact, up to the time the first fruits set I do not give much moisture at the roots, nor, of course, overhead. Even now, when the plants are in full bearing, I am particular as to the time of watering. It is always done in the early morning, and although I could not allow the roots to suffer, I avoid, if possible, giving any water if the day is likely to be dull. A moist atmosphere any length of time is certain to bring the disease so common. This disease, I may state, is seldom so bad that the crop is entirely spoiled, but I have noticed the fruits do not become so solid as they would if the leafage were healthy.

In weather at all favourable, all air possible is allowed to get to the plants. Doors are opened, and at night the ventilation is reduced only for the purpose of keeping rain out, or in case of wind at a time when one cannot watch passing elements. The practice is carried out from the first.

Imperfect set of fruit

is one more common complaint. Now, if the plants be allowed to become so dry during the time the flowers are opening, they cannot set well. And, again, it is well always, even in the best of weather, to give the plants a gentle tap at midday for the purpose of distributing the pollen. I have found, too, that when the crop at the lower part of the stem is very heavy, it is not easy to obtain quite so satisfactory a crop about the fifth and sixth truss up the stem. But when the ripening fruits are taken off, then they go on freely setting again. At the period of the early fruit ripening I would give abundant supplies of water as well as stimulants.

The disease mentioned is the principal one. Yet there are others which affect the Tomato plants sometimes. The drooping disease is most deadly. When all appears going on well a plant suddenly droops and refuses to grow. It attacks the plants usually when about a foot high, and although I have not been troubled to any extent with it, an occasional case is seen. I at once pull the plant up and destroy it, then take away the soil in which the roots have spread, and renew this and put in another plant. Change of soil as well as change of seed are two items one must not neglect in case of disease. Wireworms sometimes destroy the young plant. The only thing to do to prevent such cases is to thoroughly look over the soil before it is used, but in my own instance I employ earth which has done duty before, so that there is little danger from this pest.

Stimulants.

A satisfactory crop cannot be properly finished without the aid of fertilisers. The leaves put on a starved, sickly hue by the use of clean water only. But I would not feed the plants before the fruits have begun to form. I use soot as a top-dressing. This is sprinkled on the surface once a fortnight, and a change is given by a similar top-dressing of some approved artificial manure. I consider, however, that the frequent top-dressing of earth that I give quite as important. This is done every two or three weeks, and provides a run for fresh surface roots. The soil need not be bulky; just a covering, that is all.

Thinning the growth

is often done in a reckless manner. I have seen the stems made quite bare of leaves before the latter have properly developed. How is it possible to obtain perfect fruits if they have not the aid of leaves to draw up nutriment and sustain root growth? I take out the laterals when quite small and train one single stem up the roof of the greenhouse. But thinning the main leaves is a different matter. These are allowed to develop fully in the first place. The under ones, which are comparatively small, are first taken away, but not those close to the bunch of fruit. These are simply shortened; about half of each leaf is taken away. This shortening and thinning is done gradually—that is, the plants are not allowed to grow into a thicket and then cut out wholesale. I would do nothing to check the growth in such a way. Go over the plants at least once a week, and shorten a few of the lowest leaves each time, and as the fruits ripen the whole leaf may be cut away. This practice is carried on right up the stem as the season runs on.

H. Shoesmith.

SCARLET RUNNERS AND FRENCH BEANS.

A sowing of Scarlet Runners should now be made to produce a crop up to the time when they are cut off by frost. To lengthen the season to its fullest, it will pay to find a well-sheltered spot for this sowing, as it frequently happens that a snap of frost comes early and severe enough to put an end to such tender things when these are fully exposed in the open, but which lets those in sheltered spots escape, and this is often succeeded by a week or two of quite mild weather, during which the more favoured runners keep on growing and bearing. By availing myself of the shelter afforded by a high and thick Beech hedge and sowing on the western side of this, I have at times managed to lengthen the season by a month, especially of those plants which have been growing immediately under the branches of high trees which have spread far enough across the hedge to cover some portion of the cultivated ground. Where no shelter can be had something may be done by sowing now on the market grower's system and keeping the plants pinched low enough to do without stakes, as such plants may be easily protected if necessary. Unless the weather changes in the meanwhile, it will be advisable to soak the seed Beans for a few hours, long enough to enable them to swell somewhat, and also to thoroughly soak the drills before sowing, as there is now but little moisture left in the surface soil to assist germination. In covering the seed, leave the drills not quite filled up, as this will be an assistance when water has to be given. Early-sown runners will now be ready for staking, and for this I prefer poles some 9 feet long, allowing one pole to each plant at about 1 foot apart. An arrangement of strings may be used, or the longest and stoutest may be divested of a portion of their smallest sprays and used in the same way as the poles if the latter are not to be had in sufficient quantity. Whatever kind of support is used, it is necessary to see that it should be strong and sufficiently well fixed to avoid a collapse later in the season when growth is heavy and winds high, and where second-hand poles are used, they should be mixed in with a sufficient number of new ones as a safeguard.

Watering.—It is always with a very great feeling of reluctance that I commence watering the ordinary vegetable crops in a time of drought, except as a means of applying manure to any special crop, for with limited means it is always a struggle. A time comes, however, now and then, when it must be begun, and once begun there must be no turning back or neglect of anything taken in hand. Few things are more often mismanaged or miscalculated than this matter of watering in the open garden in dry weather. Too much is attempted at the start, and after a few days, when the strain on the labour and the enforced neglect of other work begin to tell, watering is allowed to get behind, with the consequence that many tiny rootlets have been tempted to push out only to die later of want. These, if watering had not been begun, would have remained latent until the arrival of rain, and though the plants may have suffered in the meanwhile, they will recover again and do better than those which have been treated to just a few doses from the watering-pot. I have before advised the use of stable litter or some other kind of mulching for many of the crops, and it will be most advisable to get together any of such material as can be found and apply it wherever possible to any of the things intended to be watered and which have not been already mulched, as this will increase twofold the value of the water given; in fact, it is impossible without something of the sort to apply anything like a sufficient supply to some soils, and especially on sloping borders, where no sooner does the surface get damp than the water commences to run away on to the paths or first level surface that it meets, and little, if any, good is done to those things which are intended to derive benefit. Each grower must determine for himself what crops to take in hand, and base the extent of operations on the resources of labour and supply at his command. Among things which must not be overlooked are Celery, Leeks, and all newly-planted vegetables. Lettuces very soon get beyond the need of watering when root-action is set up after planting, especially where the plants are set hard against the south side of the hole made with the dibber and the soil closed in on the north side of the plant—a little matter this, but one that makes a great difference to the plants. Seed-beds of things for transplanting must be well looked after, and standing crops which derive much benefit from good heavy waterings—especially with a liberal addition of manure-water—are Globe Artichokes now showing their heads, Broad Beans commencing to pod, and Peas in all stages, old Cabbage beds intended for a second crop, also Cauliflowers, Turnips, Radishes, and Spinach. I have never seen much benefit accrue from watering any root crops other than those mentioned, or from watering Onions, and there should be no need to begin with these if the ground was well prepared before sowing. This is evidently going to be one of those seasons when the value of deep cultivation is apparent to all.

French Beans.—Another good sowing of the climbing French Bean should be made at the same time as the late runners, choosing a similarly sheltered position and treating them in the same way, and these will render a good account of themselves until killed by frost. It is a good plan with these to throw out a trench on a bit of deeply manured ground and sow as recommended for late Peas, except that the Beans will require more room in the row. Under the trench system and with plenty of room left for water, growth will be free and continuous and immense crops can be produced. If the size of the climbing Bean be an objection, it will be necessary to make a further sowing of some favoured dwarf variety. T

CONTINUOUS BEARING PEAS.

I think that after all the constant attention that has of late years been given to the improvement of early and second early varieties, a little should now be given to those varieties valuable for their continuous bearing properties. This is perhaps not so important with those who happen to have a large area which they can devote to Pea-growing, as sowings can be made so frequently as to prevent the possibility of a break in the supply; but in small gardens, growing many of those sorts which mature the whole of their crop almost simultaneously is decidedly a disadvantage, as it is often difficult, even with the most careful selection, to keep up the supply. Of course, there is not much choice in this matter so far as the very earliest round-seeded Peas are concerned, and all are obliged to grow more or less of these for the sake of earliness alone. Fortunately, however, there is more of a choice in the second early and successional sections, some varieties if well treated continuing to yield over a much longer period than others, and those who have proved the value of these as I have done will not hurriedly ignore them for newer kinds. One of the most valuable second early blue wrinkled Peas I have ever grown is Wordsley Wonder. It is of convenient height, from 2½ feet to 3 feet, is a prodigious cropper, filling its pods very gradually and remaining in an eatable state much longer than most sorts. This will be found invaluable in gardens of a warm sandy nature, as it is a capital drought-resister. The flavour is excellent. Laxton's Fillbasket belongs to the same category, its flavour in my opinion being quite equal to that of Ne Plus Ultra. If this Pea is well mulched and watered several times, and in sandy soils grown in shallow trenches, it will please even the most fastidious, perfecting its latest formed pods and furnishing pickings over a long period. A Pea of the highest merit, not only for its

continuous bearing habit and long-keeping qualities, but also for its dark green colour and delicious flavour, is Criterion. Tall sticks are, however, needed to support it, as in moist seasons and on good, deep soil it will grow to between 5 feet and 6 feet in height. Another Pea —of the Stratagem type and height, but excelling that grand old variety in the matter of continuous cropping—is Sharpe's Queen. A most prodigious bearer, with great length of pod and fine dark green colour, it is, in addition to being an exquisite table Pea, unequalled for exhibition. Sharpe's Queen, although apparently not generally known, is much grown in Lincolnshire and South Notts. Autocrat, which is classed as a late Pea, is one of the most valuable introductions of recent years, and certainly as a continuous cropper cannot be beaten. This fact, coupled with its convenient height and splendid quality when cooked, renders it indispensable for all gardens, whether small or great. I have sown Autocrat on a light, warm soil in a dry season with the second earlies, and by the aid of a mulching and watering with liquid-manure have secured grand yields, the bold, vigorous haulm retaining its freshness to the very last. Another splendid late variety is found in Sturdy, a 3-feet Pea, vigorous in growth and continuous in cropping, the very Pea for shallow and warm soils. Ne Plus Ultra, too well-known to need describing, is indispensable where sufficiently tall sticks are procurable, and Walker's Perpetual Bearer, of 3-feet stature, complete a list of second early main crop and late varieties sufficient for limited-sized gardens where continuous bearing is necessarily a consideration. J.

Sowing Carrots.—Where the main crop of Carrots is liable to be spoiled or injured by grubs, it is an excellent plan to make a sowing of a stump-rooted variety some time in the early half of June, and roots from such a sowing are valued by those who do not care for large Carrots, as they keep up the supply of small roots until those sown at the end of July or early in August in frames are ready for use. Until I was able to successfully combat the Carrot grub by the use of gas-lime in the soil, I depended largely on a June sowing, for I found that the produce from this sowing was not nearly so liable to be attacked as was the main crop, and the roots can be left in the ground and will continue growing well into winter without any fear of injury by frost, so that they can be depended on to remain crisp and sweet for a long time after being stored. By this time it will be possible to utilise for growing these a piece of ground that has already produced and been cleared of some early crop. This should be well forked over and broken down finely, and if at all dry, a thorough watering should be given some hours before sowing the seed, as this will encourage quick germination and a good start with the young plants. As big roots need not be expected from this sowing, it will not be necessary to give more room between the rows than was advised for the earliest outdoor crop—that is to say, they may be as close as will be convenient for the use of the hoe when required, and thinning need not be carried out with a heavy hand. I have found Model an excellent variety for the purpose, but any of the short and rather early varieties will answer as well. Thinning and hoeing of the main crop will by this time be finished, and should be followed by a good dressing of wood-ashes and wood mixed, as this will help the plants to make a clean growth.—R.

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MALMAISON CARNATIONS.

EVERYONE should possess a few of these beautiful flowers, which are now to be had in many shades of salmon-pink, etc., and are so fragrant for personal decoration; besides which they last well, either in water or as a button-hole. After blooming the plants should stand in the sunshine in the open air on a bed of ashes, with their pots plunged to the rim in this material. They should not be over-watered, keeping rather on the dry side during their time of rest. A little good top-dressing of leaf-mould, soot, and turfy loam is beneficial, and in October they should be lifted indoors, and wintered under glass, without more heat than a vinery provides. Shifted into a larger pot (without much disturbance of their roots, however) in February, they will quickly throw up flowering stems, and should be carefully and regularly supplied with tepid water, increasing the quantity as soon as buds appear. Carnations must never be saturated when moist, but at the surface soil should be allowed to become fairly dry to the touch; then give enough tepid water to run through the pot. The illustration is of a single plant, grown near the glass in a vinery; it is remarkably dwarf in habit, and very free. The stakes used for it are the new patent coil stakes, which are excellent. I. L. R.

Malmaison Carnations From a photograph by Miss Mitchell, Lustleigh, South Devon.

Lilium auratum macranthum failing (*M. Y.*).—The plant of Lilium auratum macranthum sent is suffering from a disease which is very prevalent among all the forms of Lilium auratum. Various theories have been propounded as to the cause, and one accepted by many cultivators, myself among the number, is that it is a kind of sunstroke which affects the Lily in this way. This theory is borne out by the fact that it is, as a rule, first noticed on one side of the stem, while the roots are still sound and active, but so quickly does it spread, that frequently in a few hours a thriving specimen is transformed into but a wreck of its former self. The sunstroke idea is substantiated by the fact that when a bed of this Lily is planted in a partially shaded position, the plants are, as a rule, not nearly so much affected as in a sunny spot, but even where shaded it must be admitted some individuals are apt to go off in the same manner. This fact has led to a fungus being put forward as the cause of the trouble, but although spores may be found in plenty, yet they may be but a secondary, and not the primary cause of the trouble. The treatment given to the particular plant as detailed could not have been improved upon, and should have resulted in a grand display of bloom, but it must be borne in mind that with experienced cultivators in this country many plants go off before they flower. The mortality is more prevalent in excessively hot summers than it is during a fairly cool season, and out-of-doors when showers and hot sunshine alternate with each other is the most fatal period of any. Beyond keeping the roots as cool as possible and the tops from direct sunshine during the middle of the day, little can be done to combat this insidious disease, and it is very probable that, given the same treatment as that detailed in the letter, another season might yield highly satisfactory results.—G. K.

DAY LILIES.

THE culture of Day Lilies is extremely simple, for, provided a good and moderately rich root-run is afforded them and the situation is tolerably moist, the plant will flourish to perfection and increase in size year by year. When the clumps become very large, it is advisable to divide and replant. Grown by water the Day Lilies are particularly effective, and even when not in flower the drooping leaves have fine form and soft green colouring to recommend them. Although the individual flowers are very evanescent, the spikes of sweetly-scented blossoms are valuable for indoor decoration, for as soon as one bloom withers another opens to take its place. The most general favourite is the yellow Day Lily (H. flava), the clear-coloured flowers being at their best at the end of May and commencement of June. The habit of this variety is not so robust as that of some others, and on this account care should be taken that it is not unduly crowded by neighbouring plants of stronger growth. H. Dumortieri (sometimes known as H. rutilans and H. Sieboldi) produces flowers of an orange-yellow shade, to which those of H. Middendorfiana are very similar. The copper Day Lily (H. fulva) is a vigorous grower, and in favourable positions throws up flower-stems to a height of 3 feet, which often carry as many as twenty blooms. The blossoms are of a dark fawn colour, and, associated with white flowers, are exceedingly attractive. In the Isle of Wight this Day Lily is grown in quantity, and the brown flower-heads rising among the dazzling spires of the Madonna Lily—a sight which towards the end of June may be seen in many a cottage garden—is one that is not soon forgotten. In the wild garden this Day Lily is also at home, and is well calculated to hold its own against encroachment. H. Kwanso foliis variegatis is a most ornamental plant, growing almost as strongly as the last-mentioned variety, with flowers of very similar tint. Its chief beauty lies in its variegated foliage, which is plentifully striped with white, some leaves, indeed, being almost entirely white, with narrow stripes of green. In different plants the variegation varies considerably, some showing but few white markings. This variation is also noticeable when a large clump is divided and replanted in different situations, the newly-made plants after a year or so affording very diverse markings. H. aurantiaca major is the largest and tallest of the Day Lilies, and when generally known will doubtless find a place in the gardens of most lovers of hardy flowers. F.

Pelargonium Galilee.—This is one of the Ivy-leaved section, noteworthy for its compact, densely-flowered trusses and its great freedom. The clear rose colour of the flowers is exceedingly showy, and, being a good double, is very useful for cutting.

Spanish Irises are amongst the most beautiful flowers in the garden now. Amateurs should grow them more freely, as they are easily managed. The flowers are distinct in form and delightfully varied in colour, from pure white to bronzy shades.

HOUSE AND WINDOW GADENING.

CARNATIONS AND PINKS FOR VASES.

NOTHING can be more beautiful or more effective for vases than these popular and very charming flowers, and just at present they are in such great abundance and infinite variety that an endless succession of pleasing arrangements can be secured with very little trouble, for these useful blossoms are very easy to arrange. In cutting Carnations for decoration care should be taken to select blooms on long stems, to see that the said blooms are quite fresh, and to exercise discrimination in the matter of the colours chosen. No foliage looks so well with them as their own, and the custom of using this need not become extravagant, as with proper attention to the ends of the stalks the slips may be made to last three weeks, or even more. The numerous varieties of the fancy Grasses are peculiarly well suited to mix with Carnations, especially Lagurus ovatus, Briza minima, Agrostis pulchella, A. nebulosa, and Eragrostis elegans. The use of flower-buds is also to be recommended, and these, as well as the shoots, can be taken from single seedlings, thus saving the choicer varieties.

In the successful arrangement of flowers for house decoration a great deal depends on the vase or pot. Broadly speaking, coloured glass vases are an abomination. Venetian and Bohemian glasses are, of course, exceptions, also certain examples in delicate shades of yellow and green. But the cheap and nasty articles in vivid reds, blues, and unhealthy-looking mixtures are quite fatal to the beauty of any flowers placed therein. In my opinion nothing can beat good clear glass or artistic pottery in subdued tints. For cutting, the singles are by no means to be despised, and a pretty combination consists of a pink and white single mixed with Germania. Another very favourite mixture is Uriah Pike, or a similar maroon-coloured flower, with Mrs. Leopold de Rothschild or a similar pink. As a rule, I prefer the fancy varieties to be arranged by themselves; the selfs are by far the best for mixed arrangements, and then the most elegant effects can be obtained by using two varieties only; three or more different kinds will almost inevitably give a garish effect. H.

Carnations as cut flowers.

Rhodanthe Manglesi in pots.—At one time the Rhodanthes were considered to be difficult plants to cultivate, but nowadays they are brought into Covent-garden Market in considerable numbers, and are very commonly seen on the costermongers' barrows in the streets of London. The plants are crowded together in 5 inch pots, and are, of course, a dense mass of bloom. The flowers are extremely pretty in a cut state, and from their everlasting character they may be dried and kept for a long time. Where they are required for cutting alone, however, it is not at all necessary to sow them in pots, or, indeed, under glass at all, but they may be sown in drills in the open ground, and where the conditions are at all favourable satisfactory results may be depended upon. Too much moisture is inimical to their welfare, and, on the other hand, if too hot and dry they will not thrive. The middle of April, or in some districts a little later, is a very suitable time to sow the seed, which, when the plants are required only for cutting, may for convenience sake be sown in drills about 15 inches apart. There are several forms in cultivation, but for general purposes I prefer the ordinary R. Manglesi and its white-flowered variety to any others. —H.

Keeping Lilac-flowers fresh.—One of your correspondents wrote a few weeks ago to inquire, apparently, why certain branches of Lilac wither as soon as picked, while others retain their freshness for a long time. He will be glad to learn that Lilac, and, in fact, almost all hard-wooded shrubs, can be kept fresh for many days if the bark is loosened for about 4 inches from the cut end of the branch. The water is then able to reach the wood itself. A small piece of the bark should be stripped quite off, and the rest can be readily loosened with a knife or the thumb-nail. I have often observed that a branch torn from a shrub lasts longer than one carefully cut. It is without doubt for this reason.—J. C. TEBB, *Shortlands*.

Fuchsia triphylla.—When well grown this distinct species is still one of the most charming of the genus. The peculiar colour is also by no means common among the numerous kinds that have been raised from time to time. To get it in good condition it appears to require more warmth than many kinds. The glowing cinnabar tone of its clusters of drooping flowers makes it one of the most attractive of pot plants. Dwarf growing and distinct, both in habit and blossom, are points that should render this fine plant much more popular than at present it appears to be.

Pink Albino—a new variety.—We have received from Mr. F. Gifford, Montague Nursery, Tottenham, flowers of this beautiful new Pink. It is exceptionally free and vigorous, the flowers sweetly-scented, pure white, with a broad floret, held well within in the calyx. Burst flowers are few and far between, and this is as important in the Pink as the Carnation. Pinks are so hardy and pretty in the garden that a new kind of merit is welcome.

OUTDOOR PLANTS.

BIENNIAL STOCKS.

ALTHOUGH we have now in commerce such very fine and beautiful summer Stocks, as well as intermediate kinds, there can be no doubt that the old biennial forms are still very popular, and are also, when good, very beautiful. The cultivation of these fine Stocks seems of late to have been much neglected, or else the plants have occasionally suffered so much from hard weather that many have given up their culture in despair. Yet there are some to be seen just now here and there in gardens, especially in cottage gardens, of both the Giant Brompton and The Queen or dwarf branching Stocks, and they present when well grown, not only great floral beauty, but also perfume in rich profusion. But of these old varieties there have come strains of such singleness that hardly a double can be found amongst hundreds of plants. I saw but the other day quite a big lot of the Scarlet Brompton in a Middlesex seed trial ground, every one having single flowers. I naturally wondered why so useless a Stock should be preserved, as it is in a garden sense quite worthless. Even where the Giant Brompton is seen in its very best double form, still the proportion of singles is fully as two to one, but that is for the variety a very fair average. Generally not nearly so many doubles now are seen, and the scarlet seems rapidly following in the track of the grand Giant White Brompton I used to grow several years since, but which in time became entirely single, and in spite of the efforts made in saving seed, specially from plants that had five and six-petalled flowers, yet not a double came. I fear now that the strain has become worthless, if not entirely lost. The Giant Cape or Emperor Stocks found in gardens, though very good, are not the Bromptons of old, neither do they seem to have very high-class double qualities, as singles seem even in their case to very largely predominate. Putting these out of the question, and reverting to the old Brompton and Queen forms, I have wondered whether the injury done through several successive winters to the plants, in destroying so many and weakening the constitutions of those which remained, has had anything to do with this reversion to single forms.

It is difficult to understand what process in plant life must take place to produce double flowers. Ordinarily they are termed abortions, though in many cases still capable of plant reproduction. In the case of the Stock that is not so, because the double flowers are after all but floral branches, petals having superseded leaves, and there are no floral organs whatever. It was ignorance of this fact which induced an old cottager, in whose garden I was recently looking at some fine Stocks, to say that he pulled out all his singles except those close by a double one, believing that through this intimate connection the single flowers became pollenised from the doubles. I did not attempt to disenchant him out of his comfortable belief. It would probably have been argument wasted. The decadence in double production found in the Queen Stocks is the more remarkable because these used to produce so large a proportion of doubles, especially the purples, locally known as Twickenham Purple, which has given as many as 80 per cent. of doubles. The scarlet and the white were always less common and produced more singles. Good stocks of these seem to be very rare certainly, and in spite of the defects mentioned, we have seen spring-blooming Stocks in much greater abundance this year than has been the case for several seasons, and of course due to the mildness of the winter. The fact should encourage efforts to get back to gardens these charming old favourites.

It is not too late to sow seed if done at once. Very gross or strong plants may suffer through frost, but then only strong plants will give those noble spikes of bloom, reaching up to some 30 inches in height, which Brompton Stocks can give under favourable conditions, or big bush plants of the Queen that are so attractive and so delicious when

in bloom. It is one of the great properties of the Stock to be always sweetly perfumed, even though the flowers may, as in the doubles, have no reproductive organs. Wherein the perfume lies secreted in such case, except it be in the petals, does not seem to be known. The best positions for wintering these biennial Stocks outdoors undoubtedly are where the soil is fairly porous and shelter, whether of wall, hedge, or trees, is furnished. The market-growers have found planting beneath their overhanging fruit-trees to be useful, though even there, if the summer has been damp and the winter is severe, plants have been killed wholesale. Very probably the introduction of such very fine intermediate, pyramidal, and Ten-week Stocks for summer and autumn blooming, forms now found in every garden and usually giving a very high percentage of doubles, has had something to do with the comparative neglect of the biennial forms. Such a giant branching Ten-week, for instance, as the variety known as Princess Alice, balsamiflora, and many other appellations, with its pure white bloom and great proportion of doubles, is a most attractive variety and merits universal culture. Still, I plead for the preservation of our old garden Stocks. A.

Dianthus barbatus magnificus.—A large mass of this margined with the creamy-white flowers of that dainty little Tufted Pansy Violetta is very effective, as may be readily surmised. Even alone the plant is very effective by reason of the fine masses of its crimson flowers, and in soil neither too dry nor exposed the plants have flowered splendidly this year. Being easily grown and readily increased, a large stock may soon be secured where this is desired.

Androsace lanuginosa.—This is among the best of midsummer alpines, very pretty and pleasing when it is represented by large examples, whose trailing stems flower freely on the rocky surface. It is surprising, too, how this plant rejoices in a temporary shade during the great heat. On very exposed surfaces and in shallow soil the growth is poor and the flowers inevitably so, but in a deep rooting medium, where the roots are comparatively cool, and where the plant receives slight shade, its silvery silken leaves and stems are very pleasing and its flowers charming.

COTTAGE GARDENS.

Year by year the picturesque cottages of rural England become rarer. In these days of threshing-machines good thatching "reed" is difficult to obtain, and the thatcher is no longer the prominent village worthy that he was of yore. Good thatchers are now rarer than good "reed," and few villages can in the present day boast of a resident belonging to that time-honoured trade. On all sides the white-washed walls are giving place to brick and stone, while thatch is being replaced by tiles or slates. It is only where the landlord is blessed with an artistic eye and a due appreciation of the placid beauty of an old-time English village that thatch is renewed on cottage, barn, or forge, as it is in the typical South Devon hamlet which has furnished the accompanying illustration.

A cottage garden. From a photograph by Mr. S. W. Fitzherbert.

Already have five representations of thatched cottages in this little village of Cockington, Torquay, appeared in the pages of Gardening, and there still remain others equally deserving of like fame. Each has its own distinctive charm of form and environments. Here the freshly-renewed thatch is bright yellow; here it is sombre brown; here the moss-grown eaves shine emerald-green or gold as the sunlight falls on them from varying angles.

Restful as are these sequestered dwellings, the gardens in which they stand, well retired from the winding village road, hold an even greater charm for the flower-lover. Most of the cottagers are gardeners in their leisure moments, and each garden reflects the particular taste of its custodian; but in almost all the value set upon fragrance is apparent. Perfume has been styled the song of flowers, and in every garden variations of this song are sung, mingling with the melodious bird-voices that ever haunt the spreading canopy of the overshadowing Elms. In one the old Double White Rockets grow in masses, scenting the air in such fashion that the passing town-dweller stops and marvels as to what manner of flower it is that steeps the evening air with such essence. In another the tall, white Madonna Lilies hold aloft sheaves of snowy spires, for nowhere does the Lily of the Annunciation find such congenial atmosphere as in cottage gardens. The dread disease that spreads havoc in its ranks elsewhere leaves inviolate the stately purity that adorns the precincts of these lowly sanctuaries. Three years ago, in one of the gardens of which I write, two flower-heads rose from a single bulb; now ten are white with bloom. White Pinks are everywhere, Climbing Roses cluster on the walls or wreathe chimneys with a wealth of flowers, and odorous Jasmine garlands the low porches. Great bushes of the Cabbage Rose and Maiden's Blush grow at will by the wicket-gates, and white-starred Woodruff, that scents the hedgerows with its faint perfume of new-mown hay, blooms beneath a spreading Apple-tree. In the spring giant Lilacs, often 9 feet and more in height, diffuse their fragrance afar, and the yellow-tasselled Laburnum hangs like an arrested shower of gold at the turns of the road. In the garden here illustrated the sweet-scented Tobacco-plant grows in profusion, and fills the twilight with its luscious breath. But it is in his great Christmas Roses (Helleborus altifolius) that the hale occupant of the cottage, who has long out-lived the threescore years and ten allotted to humanity, takes an especial pride; and, indeed, they flourish exceedingly in the deep red loam; and, as November wanes, the wide, white chalices, thrown well above the dark-green, leathery leaves, form a delightful picture. Other flowers are also to be seen in these gardens: here and there a tall Hollyhock glowing against a whitewashed wall, great Lyre-flowers, or "Bleeding Hearts" (Dicentra spectabilis), Purple and White Campanulas (C. grandis and C. latifolia), Blue Delphiniums and German Flags, Golden Rod and Perennial Sunflowers, Scarlet Lobelia and "Goldilocks" (Aster Linosyris), which grows wild not many miles distant, while large Mauve and White Clematises thread their way through

Laurel arches and spangle the glossy leaves with their great stars; and the Passion-flower has a double season of beauty—its summer flower-time and its more brilliant season, when in winter its orange-yellow fruits glow like lamps among the dark foliage. S. W. F., *Torquay.*

INDOOR PLANTS.

NEPENTHES OR PITCHER-PLANTS.

(IN REPLY TO GEO. LOVEROCK.)

YOU must not disturb the plant now, as it is too late in the season. Undoubtedly the plant requires a change of soil. But to get the foliage a better colour an occasional watering with a little weak soot-water, or even cow-manure in a liquid state, will be useful. The majority of Nepenthes are now grown in pots or baskets (especially made), and suspended at a distance of 2 feet or 3 feet from the glass from the roof with wire. It is seldom they are seen trained over the roof of a house, as they thrive and succeed better in baskets. The end of February or the beginning of March is the most suitable time of the year for potting Nepenthes, when it will be advisable for you to cut the plant down from the wood frame, and layer the shoots into pots or baskets. The shoots may be layered singly, or even two or three together if a specimen plant be desired for growing on. But the most successful course of treatment is to layer them singly, although four or five years will elapse from the time the plants are rooted until they arrive to a fully-developed plant. But during that time they will require to be headed back two or three times to gain a plant furnished with four or five shoots, and with plenty of pitchers. If pots are used care should be taken they are well drained, but if baskets are used in preference a layer of broken pots laid closely together over the bottom will suffice, so long as the soil will not wash through afterwards. Nepenthes require a light mixture of soil to thrive well. Peat, Sphagnum Moss, with the additions of a little charcoal broken into small pieces the size of a Walnut, is the most suitable compost for them. When the shoots are layered they should be kept constantly shaded and syringed two and three times a day to encourage them to root quickly. As soon as the plants commence to make new growth, sever them from the old plants, and suspend them to the roof, syringe liberally, and keep constantly shaded. It is not difficult to propagate in this manner if the plants are not allowed to get dry. A temperature of not less than 70 degs. at this time of the year is desirable, with a rise of 10 degs. or 15 degs. in the daytime; but during the winter months 65 degs. at night is sufficiently high, with a rise of 5 degs. or 10 degs. during the day. They should never be allowed to become dry, as it causes great injury both to the roots and foliage, and at this season of the year give water every other day. Shading must be continued for eight or nine months of the year. A roller-blind made of a stout material is most convenient for shading, as it can be rolled up and down as the weather permits. One reason of the plants forming pitchers sparingly, even when they are in a healthy condition, is through overshading or keeping the plants too far from the glass. There is only one exception, and that is N. lanata, which will thrive in a position further away from the glass. Another way of propagating is by cuttings made of pieces of the stem such as are available when the plants are headed back. The cuttings should consist of a couple of mature joints or a portion of the leaf to the upper joint. They root best when placed under a bell-glass, with a bottom-heat of 70 degs. to 75 degs., and kept close and moist. In a good open mixture of small crocks and sand they will strike freely. This way of propagating may be done at any time during the year, or otherwise when the cuttings may be spared. When struck they should be potted on into 3-inch or 4-inch pots, using a mixture of fibrous peat, Sphagnum Moss, and sand. Keep them growing in a brisk heat till the following spring, when a pot of 1 inch or 2 inches larger will be required. All that is necessary now is to keep them growing and allow more root room as the plants increase in growth. When they have attained a height of from 2 feet to 3 feet cut them back to within 8 inches or 10 inches; afterwards give the same treatment as before advised.

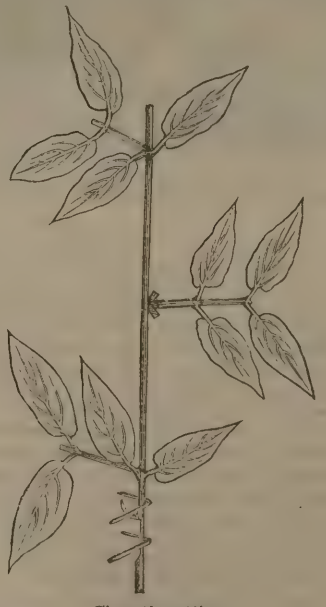
PROPAGATING FERNS FROM RHIZOMES.

ALL Ferns bearing rhizomes in the least approaching the form of our illustration are very readily increased by removing small portions, as here shown. Be careful to retain as many of the roots as possible. A good all-round compost is made up of turfy loam and peat in equal proportions, with a dash of coarse sand. If several of the rhizomes can be placed in a shallow pan and kept partly close for a time, with frequent overhead sprinklings, the result is not only more certain, but more rapid. The number of Ferns suited to this method of increase is too numerous to mention. Pot them off separately as soon as they have taken to the new compost.

Fern propagation by rhizomes.

PROPAGATING CLEMATIS.

SOME time back we promised a correspondent an article upon the above. The time is now seasonable. Although the majority—indeed, almost the whole—of these charming flowers are propagated by grafting, the stronger stock used often overcomes the graft. Nor does there seem any reason why we should run this risk of disappointment, when the Clematis is so readily propagated upon its own roots.



Clematis-cutting.

Select a shoot with side growths that have flowered. Cut off the bloom-pods and remove the side growths when a little more than half ripened. Our cut shows three of these as they appear upon the plant after the bloom-pod is removed.

Insert closely together in a 5½-inch pot, using a compost of loam, leaf-soil, and sand in equal proportions. Water well, and keep under a cloche or bell-glass until rooted. A temperature of 60 degs., with care to avoid any rapid rise beneath the glass from sun-heat, is most suitable. You can also use younger shoots, but these are more apt to damp off than those made as first recommended.

Another method is by layering. Take a shoot of growth, at least three parts ripened, and lay this down in the ordinary way. Beneath each pair of eyes, or each second pair, make a "tongue" by cutting half way through the growth, and slipping the knife up some inch or so towards the base of the eyes or joint. In this place a small piece of charcoal or sandstone to assist in keeping it open. Peg down upon a light compost of sandy loam, and cover over with a very little of the same. New growths will push up, roots be made, and the young plants can be severed after new growths are 6 inches or so high. Of course pay due care to ascertain whether roots are formed in sufficient number or not before removal. Some varieties root much more freely than others.

Achimenes as greenhouse plants.—These easily-grown plants have much to recommend them, especially to those who have a limited glass accommodation. When they are at rest they can be stored away in a dry position in the greenhouse or in a room where the temperature does not go lower than 40 degs. Many years ago Achimenes were grown extensively, and prizes offered for them at flower shows in the west districts; but they have now gone out of cultivation. Another reason no doubt is an erroneous supposition that they needed stove culture. No greater mistake could, however, be made, although they will succeed in a stove. To have them at their best this method of culture is not suitable, as when thus grown they are generally drawn and tender, and not in the least fit for decoration. I have found the best way is to start the bulbs in boxes or pans, filled with fine sifted leaf-mould, just covering them. Place them in a warm-house or Cucumber-frame to start them. When strong enough, or about an inch long, fill pots according to the size you want them with leaf-soil and loam, with sand sifted through ½-inch sieve. Well drain the pots, and put twelve bulbs in each 6-inch pot, then place them in a close frame, over a slight hot-bed. As they grow give them more air and shade from strong sun. When showing bloom place them in a greenhouse, staking slightly, when they will continue to bloom a long time, and are most useful to put in vases for house furnishing.—J. CROOK.

Magnolia fuscata.—This old-fashioned greenhouse shrub is very little grown, but one comes across a plant of it occasionally, often in some old conservatory or Orange-house. When in flower there is not much chance of its being overlooked, the fragrance being so peculiar and distinct that one looks for it at once. This fragrance alone makes the plant worth growing, the flowers being rather insignificant yet freely produced if grown in a clear light. It is easily grown in a greenhouse temperature, requiring a free root-run and substantial compost. If cultivated in pots a little of the surface-soil must be removed yearly, substituting fresh loam and a little of some approved fertiliser.

Nicotiana affinis.—Those who have plants of Nicotiana affinis a year old will find them very useful to grow in pots. I saw a plant growing in a pot in a cottage window, and it was covered with bloom. The perfume of the flowers is delicious.—ARCHIE LEY, *Bideford.*

Haberlea rhodopensis.—This pretty plant—so well suited for shady parts of the rock garden—is by no means frequent in gardens, a fact difficult to explain. For association with the Ramondias—as at Kew—it seems well adapted, and, indeed, in the tufts of leaves is not unlike these latter; but in its white and violet blossoms it is quite distinct.

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ON THE USE OF THE GARDEN AS A SHOW-GROUND FOR BUILDERS' SCULPTURE AND OTHER DEBASED FORMS OF "ART."

"In the last century there was a manufactory of garden images in Piccadilly; in fact, there were four. Mr. John Cheece, the owner, did a splendid trade in cast lead figures—gods and goddesses, nymphs and shepherds, Pan with his pipes, Actæon with his hounds, mowers, shepherdesses, and Father Time with his scythe; these sweet suggestive figures still linger rarely in old-world gardens, almost living by associations of the many that have loved them."—R. Blomfield ("Art and Life," p. 205).

It is clear from the above that there are men who think of the garden, not as a living picture of beautiful natural forms, but as a place to show off one of the most worthless phases of human art. In a northern country like ours a statue of any high merit as a work of art deserves to be protected by a building of some kind. The effect of frost and rain in our climate on statuary out-of-doors is very destructive, and the face of a statue of some merit put up only a few years ago opposite the Royal Exchange is now rotted away. The scattering of numerous statues of the order of merit, or of no merit at all, which we see in some Italian gardens, often gives a very ugly effect, and the dotting of statues about both the public gardens of Paris and London is destructive of all repose. If a place be used for the exhibition of sculpture, well and good; but let us not in that case call it a garden. In Britain statues are often of cast material, and those who use a garden as a place to dot about such "works of art" do not think of the garden as the best of places to show the work of Nature, and as one in which we should see many fine natural forms.

The earliest recollection I have of any large garden or country seat was one strewn with the remains of statues, but as my evidence as to effect and endurance might not be thought impartial, I quote Victor Cherbuliez, of the French Academy.

"It was one of those classical gardens the planners of which prided themselves upon as being able to give Nature lessons in good behaviour, to teach her geometry and the fine art of irreproachable lines; but Nature is for geometers a reluctant pupil, and if she submits to their tyranny she does it with an ill grace, and will take her revenge. . . . . The large basin no longer held any water, and the dolphins which in days gone by spouted it from their throats looked as if they asked each other to what purpose they were in this world. But the statues had suffered most; Moss and a green damp had invaded them, as if some kind of plague or leprosy had covered them with sores, and pitiless Time had inflicted on them mutilations and insults. One had lost an arm, another a leg; almost all had lost their noses. There was in the basin a Neptune whose face was sadly damaged, and who had nothing left but his beard and half his trident, and further on a Jupiter without a head, the rain water standing in his hollowed neck."

As to the artistic value of much of our sculpture, Lord Rosebery, in his speech at Edinburgh in 1896, said—

"If those restless spirits that possessed the Gadarene swine were to enter into the statues of Edinburgh, and if the whole stony and brazen troop were to hurry and hustle and huddle headlong down the steepest place near Edinburgh into the deepest part of the Firth of Forth, art would have sustained no serious loss."

The *Pall Mall Gazette*, commenting on this speech, wishes for a like rush to the Thames on the part of our "London monstrosities," and yet this is the sort of adornment that some wish us to adopt in the garden, where there is rarely the means to be found to do even as good work as we see in the cities. If the politician and the journalist ask to be delivered from the statues with which the squares and streets of our cities are adorned, our duty as lovers of Nature in the garden is clear.

In its higher expression nothing is more precious in art than sculpture; in its lower and debased forms it is less valuable than almost any form of art. The lovely examples of Greek sculpture in the Vatican, Louvre, or British Museum are the work of great artists, and those who study these will not be led astray by either Piccadilly goddesses in lead or New Road nymphs in plaster. If we wish to see the results of sculpture in the architect's proper work we have but to look at the public buildings in London where it is used, mostly to spoil any architectural grace such buildings should possess, as in the National Portrait Gallery, the Natural History Museum, the Home Office buildings, and the London University, and then we may better judge how far we may go in our gardens with such art.

Real artists in sculpture are not concerned with garden design, and sculpture is not the business of the builder or landscape gardener. A statue or two of any artistic value may be placed in a garden with good effect, never, however, forgetting that a garden is a place for beautiful life, not death.

It is not that we despise other arts than our own, as, if true art, they may charm and even help us, as in the case of a beautiful landscape by a man of genius or even a serious student of the actual beauty of things. Even a drawing of a tree or flower may be a lesson in form and beauty from our point of view; but all debased or conventional and mechanical art is as harmful in the garden as it is anywhere else. W. R.

SOLANUM JASMINOIDES.

The accompanying illustration shows the value and beauty of this flower when used in a bold way in a vase. S. jasminoides is the most charming species of the family; its flowers are pure white, abundantly produced, and the plant is fairly hardy. Where it does not succeed out-of-doors it may be grown in the greenhouse or conservatory.

Solanum jasminoides in a vase.

Inula Royleï.—When better known this handsome species will make a welcome and valuable addition to this group. The blossoms are of the largest size and of the deepest orange, the ray florets narrow and very numerous, in this respect somewhat resembling the typical I. glandulosa. The foliage of I. Royleï is large and broad, quite distinct from that of the species usually seen in cultivation. The plant is about 2 feet high and comes from the Himalayas.

Macleania punctata.—This is a very pretty greenhouse plant nearly related to the Thibaudias, and, like T. acuminata, it is of a loose, rambling habit, though it can scarcely be regarded as a climber. The long, slender shoots are clothed with dark green oval-shaped leaves of a leathery texture, while the flowers, which are borne on the upper part of the shoots, are each about 1½ inches long and tubular in shape, the major portion of the flower being red, while just at the expanded mouth it is yellowish-white. The blooms are of the thick waxy texture common to many of their allies, and they remain bright and fresh a considerable time. The genus Macleania consists of about a dozen species, all of which are natives of the Andes of America. Thibaudia acuminata, which is the best known of all this group, may frequently be met with in gardens. This plant, so long known as Thibaudia, is now regarded as Cavendishia acuminata, while a nearly allied genus is Proclesia. Some of these have the flower-clusters enclosed within large coloured bracts, which remain on for a considerable time after the flowers expand, and I am told by a traveller in the Andean region that some of them are brilliantly coloured and are then very striking. In this country these bracts are, as a rule, not particularly showy.

Gladioli in pots.—What a wonder it is that more of these are not grown in pots for autumn decoration, as it is just at a time when flowers are none too plentiful that the Gladiolus makes such a brave show. Where vivid colour is desired no variety is more suitable than the good old brenchleyensis, which, associated with greenery in the conservatory, has a most telling effect. The choice hybrids raised of recent years are also most elegant, the markings in some instances being marvellous. They are easily grown, a 6-inch pot accommodating one bulb, potting from March to May for succession and plunging in ashes in a cold-frame, exposing to air in fine frost-free weather, and entirely so after the end of April. If earliness is desired they will stand the warmth of a sunny greenhouse, the remaining portion being allowed to come on quite naturally. A compost of three parts good holding loam and one part rotten manure suits them well.—J.

Herniaria glabra aurea.—What a charming little plant this is when growing in a natural way, so that the growth extends irregularly over rough stones or rootwork. Broad patches look well in conjunction with Mesembryanthemums and Thrifts, these dwarf-growing plants having a subdued and quiet appearance that helps to set off the more showy Delphiniums or other tall-growing subjects. This variety is exactly similar in habit to the typical H. glabra, but the foliage is distinctly marked with yellow. Besides the natural appearance created by planting near large stones, the latter help greatly to conserve the moisture about the roots—a great advantage with small plants of this kind.

Spiræa Aruncus.—This fine old perennial in deep loamy ground or near the water's edge attains to a large size, and equally so the large feathery plumes of its creamy flowers. It is an excellent plant for isolation in the positions indicated.

Prunella grandiflora.—In a broad mass of this now flowering at Kew the rose-lilac spikes of bloom make a very distinct show. It forms a quiet and pleasing group that with advantage may be more frequently seen in half shady spots in the border. The plant is only a foot high and quite free flowering.

ORCHIDS.

MILTONIA VEXILLARIA.

This ranks among our finest Orchids, and when grown into specimen size and well flowered it is not easily surpassed. It possesses the good qualities in an Orchid of being a free-growing and free-rooting plant, and it ought to be seen in well-developed specimens oftener than it is at present. The season of flower also ought to commend it to those who have to supply cut blooms of high quality, as it comes in when the demand for good flowers is greatest, and the spikes of bloom are well adapted for giving a free and elegant finish to a vase of choice flowers. Even when not in bloom it is distinct in appearance from other Orchids, with its pale green and purple-tinted foliage.

In commencing the cultivation of this Orchid, healthy young plants with one or two good leads should be selected, as with good treatment they soon grow into large plants. A plant of this description in a 3-inch pot should be moved into a 4½-inch pot when growth commences. Clean pots and crocks and good drainage are necessary, and the compost should be nearly free from all earthy matter to ensure thorough porosity, as the roots are very sensitive to a stagnant condition surrounding them. A compost prepared in the following manner will keep the roots in a healthy condition: Select some light brown-coloured peat full of fibre, and thoroughly dry it over a furnace or in the sun. Break this up roughly, and remove all coarse roots and any black-looking pieces out of it. The whole should then be passed through an inch-mesh sieve, and afterwards the dusty portion must be removed with a fine sand sieve. After the latter operation not much but fibre will remain, and to two parts of this add one part chopped Sphagnum Moss. Before potting the Moss and peat must be moistened and then well blended, and a sprinkling of silver-sand may be added with advantage. The pots must be carefully drained to within a couple of inches of the rim and a thin layer of Moss placed over the drainage, filling up around the roots with the compost and pressing it as firmly as possible, so that the potting material cannot hold an excess of moisture at any time. The whole depth of compost over the drainage should not exceed a couple of inches, as there is much less risk of doing injury to the roots by overwatering in a shallow than in a too deep mass of material. As the plants increase in size and larger pots are needed, the drainage should be placed in a convex form under the centre of each plant so as to avoid the accumulation of sour matter in the centre of the ball, and the potting material should be used a little rougher than for small plants. As the normal season of growth with this plant is during the winter months, great care should be exercised in watering the plants at that season, not only as regards the roots, but to avoid any water falling into the centre of the young growths and the sheaths of the leaves. A nice degree of moisture at the roots should be aimed at, never excessively wet for any length of time and never allowed to become quite dry. The plants should be elevated to within 18 inches of the glass during the dull season of growth, and a moderate degree of moisture maintained in the house, but drip must be carefully guarded against. The temperature during winter should range from 50 degs. to 58 degs., and the nearest approach to these conditions will be found in the cool end of a Cattleya-house, or the plants may be placed through the house on light stands above the other occupants. Wherever placed the plants should always be close under the eye of the grower, so that their condition may be readily seen and attended to.

This plant is worthy of a small house being devoted specially to it during winter, and there are a few other Orchids that would find just the right conditions to suit them if associated with it. Among these are Odontoglossum citrosmum, O. grande, O. Phalænopsis, O. nævium majus, Cypripedium caricinum, and others that need a temperature intermediate between the Cattleya and cool-house. When the sun gains power in the spring a light movable shading will be needed, but it need not be so heavy as over the cool-house, as this plant will stand a considerable degree of natural heat without injury provided the house is pretty freely ventilated at such times. The more light and ventilation we can give the firmer will be the texture of the foliage, and consequently less liable to the attacks of insect pests. Thrips are often troublesome and not easily got rid of. The method I recommend for dealing with this pest is to have a large camel's-hair brush with the hairs nearly 2 inches in length. This can be run through the sheaths of the leaves very quickly without the least injury to the plants, and soon dislodges the insects. A weak solution of insecticide can also be passed through the leaves by the aid of the brush with less danger to the plants than the usual method of dipping them.

I have seen a good deal of injury happen to both the growth and flower-spikes from careless dipping. When the growths are nearly completed and the flowering stage is rapidly approaching the pots should be full of healthy roots. These are of a wiry nature and multiply rapidly amongst the drainage of the pots. When the plants have reached this stage the pots should be dipped in shallow pans of water—deep enough to cover the depth of the drainage for a few minutes occasionally to thoroughly moisten the crocks and roots attached to them, as no amount of surface watering will do it. This will increase the root action and give an impetus to the final growth of the plants and the development of fine spikes of bloom. When the plants attain specimen size they should not be allowed to carry their flowers too long, as it exhausts them and renders them liable to die off suddenly. A short rest in a cool temperature after flowering will do them good, but dryness at the root must be carefully guarded against. When growth commences again, any specimens that are getting bare in the centre should be carefully separated and repotted, retaining one or two good leads with each piece, shading them heavily, and watering carefully until they are established, when they should be placed under the same treatment as the established plants. When well-grown, few Orchids increase in size more rapidly than this, as a well-rooted plant seldom fails to throw double breaks from the bulbs the previous season. It may also be retarded to give a supply of flowers over several months during late spring and summer. R.

THUNIA MARSHALLIANA.

Taken altogether, this may be described as the most useful of the Thunias and a capital garden Orchid. The earliest flowers are now open, and where a good stock is grown the display may be kept up for a couple of months at least, due care having been taken to grow them in various temperatures with this end in view. The flowers are produced on drooping scapes from the apices of the stems before they come to maturity, and are pure white on the sepals and petals, with a golden-yellow-fringed lip veined with orange-red. The culture of this Orchid is very easy, provided enough heat is at command. The stems may either be potted separately or three or four in a pot, the former plan being on the whole the best, as it ensures simultaneous flowering; whereas, if grown several in a pot, one may be in flower before the rest. It is easy to group several pots together, by this means making a fine show. The stems at potting-time will be quite leafless and the roots quite dead. These should be mostly cut away, only a few of them being left to steady the stems, which should be placed with their base just resting on the compost when finished. The compost may consist of equal parts of peat, loam-fibre, and Sphagnum Moss, the last being as fresh as possible and chopped up rather finely. To this add a sufficient quantity of finely broken crocks to keep the whole mass rough and open, but add no sand, as in this rough kind of compost it soon gets swilled down among the drainage, choking it up and preventing its free action. Single pots may be of the 5-inch size, and a couple of inches should be allowed for drainage. As soon as the plants are potted up they should be placed in the warmest house at command and in a light, sunny position. Frequent syringing is of advantage, as it will cause the buds at the base to break more freely, but only very little water must be given at the roots until they are getting well out into the compost. When they reach the sides of the pots a full supply will be needed, for the growth is rapid and the plants gross feeders. A little manure-water made from well-diluted cow-manure and soot is helpful after the pots are full of roots and until the flower-spikes peep out of the top of the stem, when it should be discontinued. The atmosphere must be kept very moist and plenty of sunlight allowed until the flowers appear; while they are in bloom a shady position and drier atmosphere help to conserve the flowers. When these are over the foliage soon commences to decay and fall off, when the water supply must gradually be reduced, until in winter none is required. From November until they again begin to grow they may, in fact, be turned out of the pots and hung up in bundles in any out-of-the-way corner of the house. It is very important, however, that they are kept warm and dry, the temperature never dropping at this time below about 55 degs. T. Marshalliana is a native of Moulmein and was introduced about 1842.

Cypripedium Ainsworthi.—This was the first of the crosses effected between C. longifolium and C. Sedeni, and was raised by Mr. Mitchell, gardener to the late Dr. Ainsworth, of Manchester. The growth is very robust and healthy, and the spikes are large and produce many flowers of the distinct showy appearance characteristic of this set of hybrids. The dorsal sepal is very faintly tinged with rose on a white ground, the petals also white tipped with rose-pink. The pouch varies somewhat, but is usually some tint of rose, the open portion white, with many bright purple spots. It does well in an intermediate house if given plenty of water and a partly shaded position.

Miltonia vexillaria superba.—This beautiful variety well merits its name, the flowers being a beautiful deep rose, suffused with a warm tint of crimson on the sepals. The lip is lighter in ground colour, stained and lined with magenta. Although said to be an autumn-flowering plant, I saw it recently in bloom, the blossoms equalling the best forms in size and very freely produced. This Orchid likes rather warmer treatment than the majority of Odontoglossums, from which genus it has been separated by modern botanists, and if kept free from the attacks of thrips and liberally treated is as easy as most Orchids to grow.—T.

Vanda cœrulescens Boxalli.—This is one of the most charming of the smaller-growing Vandas, and a distinct and pretty variation from the typical form. The flowers, produced on erect scapes about a dozen on each, have nearly white sepals and petals with deep violet lip. The type has long been known, but this variety was introduced as lately as 1877 from India. It requires more heat than the larger-growing kinds, such as V. suavis and V. tricolor, and thrives well if planted in wood baskets suspended in a light position not far from the roof glass in the East India house. The plants require plenty of water when well established and growing freely, and even in winter must never be dried off entirely.

Promenæa citrina.—This is a pretty little Orchid when well grown. The habit is dwarf and close, the pseudo-bulbs being very small and producing from their base several scapes about 3 inches long, each bearing a single blossom. The sepals and petals are yellow, the lip yellow in front, the base having a large deep crimson spot and many smaller ones on the side lobes. It does well in a shady position in the cool-house, and if suspended from the roof so much the better. The roots like a compost of peat-fibre and Sphagnum, care being taken in mixing it that no part of it can become close or heavy, this being fatal to the well-being of the plant.

Oncidium luridum.—This species belongs to the bulbless section of the genus, and is a fairly common plant, I believe, in Jamaica and various parts of tropical America. The leaves are light green, occasionally spotted, and from the base of these the flower-spikes issue. These carry a large number of blossoms, the ground colour being a yellowish-green spotted with crimson or brown, some varieties being considerably brighter than others. The plants do well in the Cattleya-house and like plenty of light, basket culture suiting them well on this account. The compost should consist largely of Sphagnum, this material being more congenial to the roots than peat. Plenty of water must be given while growing, and though less is required in winter, the roots must not be kept quite dry,

as the leaves have not the power of retaining moisture to the same extent as the pseudo-bulbs.

Oncidium longipes.—This pretty little Oncid. is now in flower, the blossoms being freely produced from the last matured pseudo-bulbs. Each flower is about 1¼ inches across, the sepals and petals brownish, with a slight recurving yellow margin; the lip yellow with a dark purple blotch in the centre. It is not a difficult plant to manage if a little care is taken with it, but, like all small growers, it is easily checked by fluctuations of temperature or chilling draughts, especially in early spring. It does well in the coolest part of the Cattleya-house, or may be grown with the warmer section of Odontoglossums. A rather confined rooting space and a little closer compost than the larger growing members of the genus require suit it well. It is a native of Brazil.

Trichopilia tortilis.—This is a free-flowering and interesting plant, producing large blossoms that remain in good condition for several weeks. The sepals and petals are narrow and twisted, the colour brown, paling to yellow at the margins, the lip white with many spots of bright crimson. It does well in pots or baskets in the Cattleya-house, and should be given thorough drainage and a rough open compost, the roots being vigorous and requiring a large quantity of water while the plants are in active growth. T. tortilis is a native of Mexico and an old plant in cultivation, having been introduced as far back as 1838.

Callistemon Salignus. — The plant flowering at Kew under the above name is far more generally met with as Metrosideros floribunda, but I suppose the former is the correct name. There is certainly an element of doubt about the matter, for in the "Dictionary of Gardening" the flowers of C. Salignus are described as straw-coloured, and the season of blooming from June to August, whereas the specimen to which the specific name of Salignus is applied at Kew has the curious Bottle-brush-like inflorescence of a bright scarlet colour, and though now in full bloom I have seen the same specimen blooming freely during the dull days of December. It is really a very beautiful shrub, and one that may be induced to flower in a comparatively small state, but as a good-sized bush it is the more effective. This Callistemon is a good representative of the class of plants once so popular in our gardens, and now very rarely seen, while many of them are extremely difficult to obtain from nurseries. —H.

The scarlet trumpet Honeysuckle (Lonicera sempervirens).—As a good climber for a greenhouse it is questionable if any will give more satisfaction than this Honeysuckle, though it is, as a rule, not generally employed for this purpose, probably owing to the fact that it is quite hardy in many localities. Under glass, however, and particularly in a medium-sized structure, it is in every way satisfactory, as it will bloom, more or less, throughout the spring and summer months. The flowers are of a beautiful scarlet on the outside and yellow within, while the distinct glaucous foliage is also very pleasing. Insect pests trouble it but very little, and planted out in a prepared border it will grow away freely. It is a native of a considerable tract of country in North America, and is one of our oldest climbers from that region, having been introduced in 1656.

GARDEN PESTS.

THE PINE-WEEVIL (HYLOBIUS ABIETIS).

In my last paper I gave an account of the Pine-beetle; in the present one I propose to describe another beetle which injures Conifers, namely the Pine-weevil (Hylobius abietis). This weevil is very destructive to various kinds of Fir-trees, particularly Scotch and Spruce Firs, and Larches. Unlike the Pine-beetle, this insect does not burrow into the shoots of the trees, but it attacks the buds, the bark of the young growths, and even the roots when they are exposed, as they often are. They generally select the young shoots, and frequently almost entirely strip them of their bark. When a tree is injured in this manner it is sure to suffer considerably, as the passage of the sap is impeded, and the wood of the tree is exposed to the elements in a very unnatural manner, and the growth of the tree is necessarily much retarded. The females lay their eggs in the bark of trees which are not in vigorous health, in exposed roots, logs, stumps, etc. When the grubs are hatched they feed on the tender wood just below the bark; they make long winding galleries in doing so. When these are very numerous the bark is almost separated from the living wood, and air and moisture are admitted, which are the sure precursors of decay. Nearly all plants and trees which are not in a healthy condition seem to be more

The Pine-weevil.

readily attacked by insects and fungi than those in vigorous growth. It is supposed that the sap is then in a more attractive condition than it is when perfectly healthy. Due care should, therefore, be taken when planting trees that the soil and position are suitable to them, and every thing done that is possible to insure health. I am afraid that these points are often not considered in any way when trees are being planted, consequently there are many more unhealthy trees than there should be. The old proverb "A stitch in time saves nine" is particularly true when dealing with insect pests, for if once they get the upper hand they are very difficult to get rid of, in spite of all we can do. As soon as any of these weevils are seen in a plantation or wood, traps should be set for them by laying fresh pieces of Fir-bark on the ground, with the outer side upwards and well kept down with stones, or small bundles of Fir-twigs should be laid about, and the trees well shaken. The shaking will probably make the insects fall. Those that can then be found should be killed, the others will most likely crawl under the traps, which should be examined the next morning; the traps should be allowed to remain, and should be examined from time to time. No pieces of bark, broken boughs, etc., should be allowed to remain lying about in a wood, but should be collected and burnt. Sickly trees should be removed at once, as they are sure to be the first attacked, and then they become a source of infection to others. Stumps of trees left in the ground are regular nurseries for these weevils. Saw-pits near woods, if not likely to be used again soon, should be cleared up and all the rubbish burnt. With specimen and isolated trees it might be of some use to dress the stems with some application, such as soft-soap mixed with paraffin, sulphur, or Tobacco-juice, or the weevils might be shaken off on to sheets or tarred boards. Such birds as woodpeckers, the wryneck or cuckoo's mate, the tree-creeper, night-jar, and the titmice, are invaluable in woods, as the number of insects that they destroy is enormous. They and their nests should never be disturbed on any account. Some of the weevils pass the winter under Moss in crevices in the bark of the trees or in any shelter of that kind they can find, others emerge from the chrysalides in May or June. The eggs are laid during these months, and hatch probably in the course of a fortnight or three weeks. The grubs continue feeding under the bark until the following spring, when they become chrysalides, from which the weevils emerge in about a month. The Pine-weevil is by no means a small insect, as it is about ½ inch in length (the figure, of course, represents the beetle, much magnified). It is almost black. The wing-cases are ornamented with several bands and spots of short yellowish hairs, and with alternate rows of fine depressions and raised dots. The snout is slender, and about ⅓ inch in length. The feelers are of moderate length, the joint nearest the head being nearly as long as all the others put together, those at the end forming a club. The grubs are white, fleshy, and very much wrinkled. The first three joints are considerably swollen; each of the joints are furnished with a few stiffish hairs. The chrysalides are much like those of other beetles. G. S. S.

Madonna Lilies failing (*G. Vale*).—Your Lilies are attacked by the Lily disease fungus (Botrytis Douglasi). Cut away and burn all the diseased parts, and then spray with "Bordeaux mixture," which may be made by dissolving 1½ lb. of copper sulphate in a little warm water, and slake 1lb. of freshly-burnt lime, and make it of about the consistency of cream with water, then strain it into the copper sulphate, and add 11 gallons of water. Next year, as soon as the disease begins to show itself, spray with the same mixture, and then again in the course of four or five days.—G. S. S.

Plague of "black"-beetles. — "M. B. D." will be much obliged if the Editor of Gardening will tell her what can be done to get rid of a plague of a sort of black-beetle, that appears in the evening in immense numbers. They come in at the doors and run along the halls and passages. They have even been seen on the staircase. They are in swarms on the ground and on the walls near (outside) the door. The butler complains of their running over him at night. Keating's powder has been used. There are two small dogs and two cats in the house, and "M. B. D." does not like the idea of scattering poison about. She will be grateful to hear of any remedy. One of the insects is inclosed in a small box.

*** The beetle you sent was a specimen of one of the ground-beetles (Harpalus ruficornis); they are perfectly harmless, and even beneficial in gardens, except that they have a great partiality for ripe Strawberries; but they are, of course, unwelcome visitors in dwelling-houses, as they are very active. The only way of dealing with them is to trap them. This may be done by laying pieces of uncooked meat about, covered over with a piece of sacking or turf. The meat will attract them, and the sacking or turf will give them shelter. Lift up the traps every morning. Rolling the paths near the house of an evening might be useful. Gallipots sunk in the ground up to their brims and nearly filled with water would probably catch a good many.

Apple-trees infested with pests (*E. S. C.*).—Your Apple-trees are attacked by the caterpillars of the small ermine-moth (Hyponomeuta padella), a very common insect. Wash the trees with one of the following mixtures, using sufficient force to break the webs, so as to make certain that the insecticide reaches the caterpillars: soft soap 1 pint, paraffin oil 2 quarts, and 2 quarts of boiling water, churned or well beaten up together for a quarter of an hour, and then mixed with 15 gallons of water and kept well mixed; or 1 lb. of soft-soap, the extract from ½ lb. of Quassia-chips, well

mixed in 10 gallons of water; or the webs may be cut out of the trees. Care must be taken during the operation as the caterpillars are very likely to drop out as soon as they are disturbed. As soon as any of the moths are noticed, sheets should be spread under the trees and the branches shaken sharply, when the moths, which are very inactive during the day, will fall and may be easily killed. The moths will probably make their appearance about the end of this month or the beginning of next.—G. S. S.

Leaf-cutter bee (*H. H.*).—The only means that I can suggest of preventing the leaf-cutter bee from injuring the leaves is to trace the bee to its nest, which is generally made in wood, such as old posts or decaying tree-stems, but sometimes in the ground, and to hold a butterfly net over the hole and catch the insect as it comes out; but as soon as the bee has finished her nest she will not injure any more leaves, as she only uses the pieces cut off to line the cells with. We have never received any queries about Azaleas.—G. S. S.

Lilium Hansoni rotting off (*E. M. Day*).—Your Lilies are attacked by a fungus, probably the Lily disease fungus, but I am not quite sure as the disease was not very well developed. The best remedy is washing or spraying with Bordeaux mixture, which is made by dissolving 1½ lb. of sulphate of copper in a little warm water, then slake 1 lb. of freshly burnt lime, mix it with water till it is about as thick as cream, strain it, pour it into the solution of copper sulphate, and add 11 gallons of water. —G. S. S.

Strawberries infested (*H. H.*).—The beetles injuring your Strawberries are one of the ground-beetles (Harpalus ruficornis), a very common insect. In other respects they are quite harmless in gardens, and are even of considerable use, as they and their grubs feed on small grubs and other insects. I should remove any litter, or anything else under which they can hide, and if possible raise the fruit from the ground. You might trap them by laying pieces of uncooked meat about and covering them with sacking or turfs. They will be attracted by the meat, and they will remain under the shelter during the day, when they may be caught.—G. S. S.

CHRYSANTHEMUMS.

Growing Chrysanthemums in frame.—Could you kindly tell me through your query column whether a deep frame with or without bottom-heat could be used in any way to grow a few Chrysanthemums, as I have a rather large one, and could give it a good position?—Bert.

*** The cold-frame would do well for the early-blossoming varieties of Chrysanthemums—say, those that flower in October and the early part of November; but it would hardly do for later flowers, as there would be some difficulty in keeping out damp, which is often worse than frost to contend with.

Chrysanthemum pallens.—This is of the C. Leucanthemum type, but apparently a dwarf form that is very free flowering, and altogether more compact and neater in appearance than C. latifolium and others of this group. The foliage is less fleshy and the edges heavily serrated, while the pure white flowers appear singly on stems each about 2 feet high.

Campanula glomerata dahurica (Clustered Bellflower).—A mass of this plant during June and early July is handsome, and if only those in want of a good piece of bluish-purple colouring in their garden at this season could see a large number of plants massed in a large bed they would immediately be convinced of its great value. About 2 feet in height, rather under than over, with strong, erect stems, each carrying a dense cluster of flowers, will give the reader some idea of its character. Isolated plants do not appear to lend themselves so much to a striking effect, hence the reason for advocating planting in masses.—B.

Iberis Garrexiana is a very charming snow-white form of the perennial Candytuft, in which the foliage is long and narrow, while the flowers are of the purest white. Whether for rockwork or border or for cutting, this will not easily be supplanted. Like most others of its tribe, this species may be raised from cuttings of the half ripened shoots late in the summer months.

FLOWER SHOWS AND SOCIETIES.

NATIONAL VIOLA SOCIETY.

The exhibition at the Royal Botanic Gardens, Regents Park, W., on Saturday, July 17th next, promises to be of a very interesting character, special care having been taken by the executive to make the show a thoroughly good one, as well as representative. There are in all some twenty-nine different classes, sixteen of which are open to all, the remaining thirteen being exclusively devoted to the amateur element. In the open classes, gold, silver, and bronze medals are offered for the premier classes, liberal money prizes also being offered to the remaining competitions. Tufted Pansies play an important part in making up the show, and there is good reason for believing that the enthusiastic section of amateurs in this society will make a very fine display on the occasion. In order to emphasise the value of Pansies as bedding plants, a special prize is generously offered for a collection of six growing plants, the selection being confined to a certain number (a goodly list) of the best tufted sorts, and in these the public will see how eminently suited for garden decoration these plants are. The subscription is 5s. per year only, and Mr. A. J. Rowberry, The Crescent, South Woodford, Essex, is the secretary.

The National Rose Society Annual Show takes place Friday (July 2nd) at the Crystal Palace.

BOOKS.

"HOW TO GROW BEGONIAS."*

Much has been written of late about the Tuberous Begonia, but there is room for a little book from Mr. Farini, who has for years given the flower constant attention, raising new varieties as well as achieving success as a grower. The book will interest greatly all those who wish for information about the plant. It is well printed, but the illustration on the cover of a double variety is scarcely beautiful. We hope raisers of new kinds will remember that mere bulk is not what we desire. Not a few of the later seedlings are ugly and coarse.

AQUARIA.

Gold-fish in bell-glass (*W. C. G.*).—Your bell-glass is rather too small for the number of fish. You must, however, furnish it with some well-washed sand and an aquatic plant in order to make it a success. The objection to a glass globe is that it does not expose a sufficient surface of the water to the air in the proportion to its bulk; do not, therefore, fill your bell-glass with water, but allow as large a surface as possible—that is, if it be of the ordinary globe shape. The sand and plant ought to be provided and the glass supplied with water some days before the fish are introduced. Use clear river or pond-water if possible, and do not change it often. Merely add a little from time to time to make up for evaporation. Carefully remove all decayed vegetable matter from the plant, which may be renewed from time to time. It is important to have a healthy aquatic plant with the fish as it gives out oxygen for their use. A water-snail or two would keep the glass clear and prevent an undue proportion of confervoid growth accumulating upon it. Then as to food for the fish, you should give them now and then a little finely-crushed vermicelli, but never more than they will consume at the time of feeding. They will soon learn to take this eagerly. You may also give them now and then a few tiny worms and a little lean meat cut fine. Place your bell-glass where the fish will obtain a fair amount of light, but avoid a position where the direct rays of the sun would fall upon the water, or, at least, provide something to shade it during the hottest part of the day. Flowers or Ferns placed between the bell-glass and the window will form a pleasant shade from excess of light. Too much light encourages the growth of the conferva upon the glass.—S. S. G.

Geum miniatum.—This is one of the most brilliant of hardy flowers, the bright, single, orange-scarlet colour being very conspicuous in the hardy border. Commencing to flower during May, it continues on throughout the summer. It is a first-class plant, especially for small gardens.—D. B. C.

* Published by Messrs. Sampson Low, Marston, & Co., Fleet-street, London. Price two shillings.

GARDEN WORK.*

Conservatory.

A few of the hardiest specimens may be taken from the stove or other warm houses to the conservatory now. The flowers of Bougainvillea glabra will last longer in the conservatory. Acalypha macrophylla and some of the Anthuriums will do under the same conditions now, and will give room for opening out the growing specimens in the stove. The conservatory may be kept a little closer at the end where the stove plants are grouped for a time. Nearly all the hard-wooded plants will be better outside now, but the same cultural care should be given to the plants as they received in the house. Avoid too much crowding in plant-houses now. There is some excuse for a crowded house in winter and spring, but damage is soon inflicted upon growing and flowering specimens in a crowded position, and, besides, plants ripening growth or resting after flowering will be better outside. Hydrangeas after flowering should be cut back. Pelargoniums place outside to ripen. When the wood has acquired firmness cut down and put in cuttings. The African Hemp (Sparmannia africana) is a useful winter-flowering plant. Cuttings soon root in a close frame, and small plants will flower in 5-inch pots, although large specimens are more effective. But some pruning is necessary after flowering to put them into shape. To insure plenty of flowers the growths should be ripened outside for a month or two. Solanums for early decoration are best grown in pots in cool, well-ventilated pits, but most of ours are are now planted out in a specially prepared bed. The flowers set better outside, although the berries are rather later in colouring, but they come in well for the Christmas decorations. Pleroma elegans is a distinct and effective plant when well done. The large purple-blue flowers are distinct, and a well-bloomed plant never fails to attract attention. Must be potted in good loam and peat, made porous with sand, and the growth should be made in the intermediate-house. Leave a little air on at night now, except in wet or windy weather. Give liquid-manure to plants capable of assimilating it; but it is useless to weak or sickly things, and is not required by fresh potted plants. Clear soot-water occasionally is good for Camellias and Azaleas now setting their buds, and gives a dark green colour to the foliage. Azaleas infested by thrips may be cleared by dipping, or syringing with water in which a little soot-water has been mixed; but it must first be clarified by lime.

Stove.

The nights are too cold yet to let out fires, though where the collection is small and not specially valuable, with care in ventilation a good many of the ordinary stove plants may be grown without fire-heat now. Gloxinias and Streptocarpi may be grown without artificial heat now, and most of the winter-flowering stove plants which are propagated annually, including Begonias, Justicias, and plants of a similar character, will do in a close pit, but fires will still be required for Allamandas, Ixoras, Crotons, and stove Dracænas, but when the nights get warm less fire will be required. The atmospheric moisture should be in proportion to the fire used. A dry atmosphere is usually the prelude to insect attacks and thrips. Red-spider and bug are difficult to exterminate by ordinary methods, but a plant badly attacked is never quite the same afterwards, therefore watchfulness is necessary. By the middle of July some of the early-flowering Dendrobiums and other Orchids may be moved to a cooler, drier house to ripen their pseudo-bulbs. They do very well under the shade of Vines where the top growth is not crowded.

Ferns.

Tropical Ferns must still have a little fire-heat on cold nights, but let fires out bright mornings; bank up early if it is wished to avoid the trouble of relighting. The propagation of Ferns may go on all the year round, if necessary. Most of the common market Ferns are raised from spores, which are sown as soon as the spores are ripe in a close, shady spot. We raise most of ours in a close frame, fixed in a shady corner of Fern-house. To obtain stock of such Ferns as Adiantum Farleyense and others which do not produce spores freely, it is better to divide young plants than old specimens, the crowns of which may have become debilitated by overcrowding. Do not overshade, especially if the fronds are required for cutting.

Mushrooms.

Good spawn will run anywhere now where the conditions are suitable, but in hot situations the Mushrooms will be maggoty. Beds still in buildings should be stimulated by liquid-manure. A little salt in the water will be beneficial. If beds are made in buildings now, the temperature must be low. A cellar under ground will be the only suitable place, but only open-air beds made on the north side of a building will do well for the summer beds. Use fairly fresh manure, and mix one-fourth of good loam with it. Blend all well together, and when warm turn over and make up the beds, which need not be very small, as large beds, if convenient of access for covering, usually do best. Regulate the temperatures by coverings of litter or rushes. No water will be required for the first month; then sprinklings may be given to soften the surface and let the Mushrooms through. Spawn may be inserted in lawns and pastures now.

Pits and Frames.

The earliest Cyclamens will now be ready for 5-inch pots, and should be placed in cool-frames, lightly shaded from the hot sun. Dew them over with a fine rose every afternoon to encourage growth. Primulas and Cinerarias will do well under the same conditions.

Window Gardening.

Give weak stimulants to Fuchsias, Zonal Pelargoniums, trailing Campanulas, and Begonias. These and Musk will make a bright show in the windows. Ferns and Palms must occupy a position out of the midday sun.

Outdoor Garden.

The budding of standard Briers may be done as soon as the bark works freely. The buds which remain dormant

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

till next March generally make the best plants, and to prevent the buds starting the shoots in which the buds are inserted should not be shortened. But anyone anxious to obtain a Rose or two from the early budded plants will, of course, shorten the shoots to 8 inches or so at the time of budding. Pink cuttings will strike freely now under glass. Young plants produce the best flowers, and should be struck and finally planted out in beds in September or early in October. Save seeds from the best Pinks. Seedlings produce a great many flowers, and something worth perpetuating may be obtained. The same remark applies to Tufted and other Pansies, but it is of no use to grow inferior varieties to save seeds from Centaurea montana rubra is a charming thing for cutting just now, but the white and blue varieties are poor things in comparison. Mulch beds of Asters and Stocks to obtain fine flowers. It is necessary to obtain seeds of the best strains to have good flowers. The rockery must be kept free of weeds. A little old leaf-mould, mixed with sand, will be useful round choice things now. All dead fronds should be removed from hardy Ferns, as they are no longer required for protection. A collection of Hart's-tongues in a cool situation are always interesting. They will grow in good loam, mixed with lumps of sandstone. The different varieties of Polystichum angulare proliferum may be propagated from the fronds in a shady situation. These make handsome plants for pot culture.

Fruit Garden.

When the black-fly attacks Morello Cherries, the insects usually appear on the ends of the shoots first, and if dipped in a mixture of soft-soap and Tobacco-wash before they scatter, the trees can be cleansed cheaply. Sweet Cherries may be treated in the same way. The breast wood of the early Cherries may be shortened to let in the air and sunshine to ripen the fruit. Peaches have suffered in some gardens a good deal from blister. Pick off the blistered leaves, and wash with insecticides to thoroughly cleanse the trees. Sunlight-soap will be found useful dissolved in warm water, from 1½ oz. to 2 oz. a gallon. Soft water is best, though, of course, boiling the water will soften it. Continue the selection and layering of Strawberry runners till a few above the actual requirements are secured. All surplus runners should be cut away. Old beds of Strawberries not required should be grubbed up, and the ground planted with Broccoli or some other crop. Secure the grafts in newly grafted trees by tying sticks up the stems to attach the grafts to. If this is not done some of the grafts may be blown out. The Pear-slug, or, rather, the saw-fly, its parent, generally appears at this season. Lime, either dry or in solution, is the best remedy. Give liquid-manure to Melons swelling off crop. Give a crack of air early in the morning. Do not throw water close to main stem. It may generate canker, and the best feeding roots are not there. Sprinkle the foliage and close early on bright days. Tie in the young wood, so as not to shade the fruit in late Peach-houses. Go over late Grapes with the scissors a second time to take small berries, if any.

Vegetable Garden.

Plant Veitch's Self-protecting Autumn Broccoli, and any Winter Greens not yet set out should be seen to. Sow Walcheren Cauliflowers on warm border, and afterwards lift into frames. Mulch Vegetable Marrows and ridge. In windy districts peg the growing shoots out. If the weather is dry, these and any other crops which require moisture should be watered copiously. Celery, for instance, is a marsh plant, and bolts if checked by drought. Celery for the July shows is best blanched with clean sweet hay; paper will do. In making a selection of vegetables for exhibition, Peas, Cauliflowers, Tomatoes, and French Beans carry weight if well grown and not too old. Vegetable Marrows are often shown too old at the local shows in the country. Really good White Potatoes, either Kidney or round, are better than coloured. Judges who know anything about quality often stretch a point in favour of known good kinds. Cucumbers are frequently too old. On the other hand, Globe Artichokes are very often too small and poor. Top-dress Tomatoes in cool-houses. They will require more nourishment now. Train up the young shoots of early Tomatoes from which the bottom fruits have been gathered. A good second crop will be the result. Tie up Lettuce to blanch when nearly full grown. Sow Endive freely; give each plant a square foot at least. The Green Curled is the best variety for general culture. Sow Turnips after early Potatoes. Gather Peas and Beans before they get old.

E. Hobday.

Work in the Town Garden.

Boxes should often be overlooked, and spent blossoms and decaying flowers removed. The soil should never be allowed to get too dry, and when watering is done let it be thorough. In the borders and beds of the surrounding garden planting of the more tender subjects should be finished. Dahlias may be placed in position, and plenty of room given for each plant to develop. Many plants, such as Carnations, may now be lifted out of the frames and planted in position, but a good ball of earth must be attached to the roots to do this successfully so late in the season. Mixed beds of Fuchsias, Double Zonal Pelargoniums, Calceolarias, Nicotiana affinis, Stocks, Asters, Petunias, with Lobelia and Mesembryanthemum for edging, may be planted with a reasonable prospect of success. For a later autumn display a selection of early-flowering Chrysanthemums may be planted, those of this type of the plant being the only sort suited to this purpose. Give each plant quite 2 feet of space, and this should be filled up by the time the flowering season comes round. These are ideal plants for a town garden. The greenhouse will need constant attention at this season, ventilation, shading, and watering needing constant watchfulness to keep things in order. Should any plants become very dry, stand the pot in a pailful of water, by this means ensuring the soil getting thoroughly saturated. Flowering plants will need shading during the hottest part of the day, their season of flowering being very much prolonged by this act of thoughtfulness. Azaleas, Camellias, and other hard-wooded plants may be placed outdoors, selecting a nice warm place for them. This will give more room for other summer-flowering plants, such as Zonal Pelargoniums, Fuchsias, Nicotiana affinis, Tuberous-rooted Begonias, and other plants known to possess the necessary quality of a town garden subject. Coleuses, if given the warmest position in the greenhouse, and a sunny one, add very much to the brightness of this structure.

D. B. Crane.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 5th.—Sowed Lockie's Perfection and Improved Telegraph Cucumbers. Commenced potting Strawberries in fruiting pots. Planted out several old plants of Coprosma Baueriana for the purpose of layering the shoots. Pricked off Wallflowers, Canterbury Bells, Foxgloves, and Sweet Williams. Shifted Cyclamens into 5-inch pots. Potted off from boxes Chinese and obconica Primulas. Sowed Ne Plus Ultra French Beans. Tied paper round earliest Celery to begin the blanching.

July 6th.—Finished thinning Peaches and Nectarines on walls, and nailed in young wood. Commenced the removal of the breast wood from wall-trees. Potted off rooted cuttings of Gardenias and other stove plants Pricked off seedling Ferns in boxes. Gathered spores of Pteris tremula, P. major, and others, and sowed them in pans of good loam made firm and damp. Sowed Bath Cos Lettuce for autumn, also Green Curled Endive. Sowed Machet Mignonette in 5-inch pots for autumn-blooming.

July 7th.—Dressed inside borders of late vineries with manure from a poultry-farm. Sowed Myosotis dissitiflora on shady border for early spring blooming. Sowed Campanula pyramidalis. Sowed several kinds of dwarf Peas, including Ladas and American Wonder. Put in cuttings of choice laced Pinks under hand-lights. Sowed French Breakfast Radishes on shady border made rich by old potting soil.

July 8th.—Made up several Mushroom-beds in shady spot in open air. Only the longest litter was shaken out of the manure. Commenced budding Standard Briers. Filled a light full of cuttings of Euonymus radicans variegatus. Transferred a lot of Achimenes to baskets for conservatory. Pegged down trailing plants on flower-beds, and put stakes to those of erect habit. Transplanted beds to fill vacancies and make new bed.

July 9th.—Planted Walcheren Cauliflowers on north border. Gave a mulch of manure to Raspberries and several heavily-laden fruit-trees. Gathered Dymond Peaches from second houses; fruit fine and splendid colour. Planted out Roses struck from cuttings taken from plants forced early. Teas predominate; the bed had been well prepared and lightened with old potting stuff. Potted late-flowering Chrysanthemums.

July 10th.—Cleared a south border of Noble Strawberries from which the fruit has been gathered. Three years is the extreme limit of duration of our Strawberry-beds. Pruned the young shoots from Laurels on bank; must be kept low, as they are used in a hot position instead of turf. Placed scrim over ventilators in vinery where Grapes are ripened to keep out flies and wasps. Shifted winter-flowering Zonal Pelargoniums into blooming pots—6-inch pots being the limit; many are in 5-inch pots.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

941—**Moving Poppies** *(41st).*—Poppies are bad to move at any time. Far better sow more seed where required. Move the Irises early in September.

942—**Diseased Carnation** *(Cyclops).*—There is nothing radically wrong with the plant. It is certainly not diseased, but, unfortunately, Carnations are prone to fail in this way. The plant would probably have recovered.

943—**Watering Vines with house-sewage** *(Dolphinton).*—House-sewage is a good stimulant for Vines, provided it is well diluted. When applying it to the inside border, open the ventilators, admitting air also to allow the noxious fumes to escape.

944—**Planting perennials under Fir-tree** *(T. Shortlands).*—Perennials will not make much progress under Fir-trees, owing to the want of light. Remove 2 inches of the surface soil, replacing it with other, deeply digging the remainder and adding manure liberally.

945—**Sample of soil** *(Amateur).*—You do not say to what purpose you want to apply the soil of the sample sent. If you mean it for your garden, it would do well mixed with that stiffer in character. The sample sent, if used by itself, would require considerably enriching with manure.

946—**Ants overrunning garden** *(Lady A. E., Devon).*—Ants are most difficult to eradicate from a garden when once thoroughly infested with them. Repeated dressings on the surface and about their haunts is the best remedy. Try and find the nests and pour boiling water into them.

947—**White-leaved "Geranium"** *(A French Reader).*—Your White "Geranium" is a freak commonly known as a sport. It may grow in the garden for some time, but it will most likely die eventually, as these sportive subjects seldom live long. It is of weak constitution.

948—**Pruning wall trees** *(Banaher).*—July is the proper time to commence pruning the breast shoots from wall fruit-trees—or, in fact, from any other fruit-trees. Cut all superfluous shoots back to within 3 inches of their base. Do not cut the leading shoots or any required to fill up gaps.

949—**Yucca-leaves withered** *(On Yon Bonnie Banks).*—The withered leaves of the Yucca are caused by defective root-action. Carefully dig the plants up, trenching the soil 18 inches deep, adding some decayed horse-manure, and thoroughly water the roots if the weather be hot and dry afterwards.

950—**Fern-frond turning black** *(E. B.).*—The cause of decay is defective treatment in some way which causes the growth of a fungus in the places turned black. Has the plant been recently potted? If so, was there anything especial put in the compost? Have you given the plant a strong dose of manure-water, or anything out of the ordinary way?

951—**Diseased Laxton's Noble Strawberry** *(S. H. S.).*—The fungus is undoubtedly that of mildew. This Strawberry is very often attacked by this pest. In your case it is no doubt aggravated by the frost recently experienced, which checked the swelling of the berries. Nothing can be done to avert its progress beyond picking off the affected fruit.

952—**Treatment of Vegetable Marrows** *(T. Shortlands).*—If the weather continues showery no manure-water will be necessary. If, on the other hand, we get a hot and dry summer, a thorough soaking of manure, or even clean, water once a fortnight will be of great assistance. Nothing more is required beyond keeping the plants free from weeds.

953—**Lemon and Oak-leaved Pelargoniums** *(A French Reader).*—It is purely a matter of taste whether these "Geraniums" shall be grown in the open or in the greenhouse. They will succeed either way. If planted in the garden they are not so easily lifted afterwards for the house in winter. Why not strike cuttings and have some plants indoors and in the garden also?

954—**Currant-trees blighted** *(W. T., Timperley).*—Your trees are infested with the Currant-tree fungus, brought about by the recent cold weather and the bad condition of the roots. Syringe them thoroughly with soft-soap and Tobacco-water in the evening, picking off the worst leaves. At the end of October replant them, if not too old, in a fresh site, deeply digging and manuring the soil.

955—**Tuberose flowers turning yellow** *(V. V.).*—The cause of the Tuberose blossoms turning yellow instead of expanding properly is either owing to weakness of the bulbs, or a want of light and air at the time of expansion. The temperature and close atmosphere of a vinery is a suitable place for these flowers up to the time the bloom-buds form. Then they should have cooler quarters.

956—**Heating conservatory** *(A Twenty-Year Reader).*—From the details you give of the existing and proposed houses we should think a 4-feet boiler would heat the 2,000 feet of 4-inch piping very well if the pipes are laid correctly. A rise of 1 inch in 12 feet for the flow is sufficient. There should be no dips in the pipes. As to fuel, we find anthracite cheaper than any other. No doubt this coal and coke is also economical.

957—**Use of fresh cow-manure** *(H. H.).*—Fresh cow-manure is much better than old for making liquid-manure. One bushel put into a tub holding 50 gallons water will last fully one week, even if you draw off all the water daily. Perhaps the frost injured the Strawberry blooms, since they are barren. If this is not so, dig them up and plant Royal Sovereign and Sir J. Paxton next September. The former is an early sort.

958—**Growth of Cucumbers in small house** *(C. Chantler).*—During the summer bottom-heat is not necessary for Cucumbers. No; rub the fruit off at first. Do not allow the plants to bear too freely at first. If you have time to pick the male blooms off all the better, but it is not necessary. Peat Moss-litter is what is used in stables instead of straw; it is the refuse from peat. Do not give your plants too much water at the roots. Examine the soil 1 foot deep before.

959—**Unfruitful Pear-tree** *(Harold).*—In some localities certain varieties will succeed against a wall, while not 20 yards away in the open as pyramids fail entirely. Such results are mainly attributable to the cold nature of the soil during winter and spring; the wood does not mature properly Try some stimulating food about the roots, such as half-rotted horse-manure, also soakings of liquid-manure in the summer. Are the roots near the surface? They ought to be.

960—**Salep** *(G. Roy).*—This is prepared from Orchis bulbs, chiefly from O. mascula. It comes to us chiefly from the Levant and from India. It consists of a peculiar kind of gum termed bassorine starch and phosphate of lime. In some respects, according to Dr. Thomson's "Domestic Medicine," it is more nutritive than either Sago or Arrowroot, and consequently is better adapted for the convalescent than for the sick. It is prepared by dissolving the powdered Salep in hot water, with assiduous stirring, and adding to the solution sugar and milk. Prior to the introduction of Coffee, Salep was much used as a diet beverage in this country, and it might still be employed with advantage.

961—**Vine seedling** *(Puzzled One)*.—The Vine is a useless variety like many other seedling fruits. Throw it away and plant a strong one-year-old cane of Black Hamburgh next February.

962—**Tomato Chemin Rouge** *(Tomato)*.—Tomato Chemin Rouge is a medium-sized fruit, smooth in the skin, a very good cropper, but is liable to crack, and is perhaps more prone to disease than many other sorts.

963—**Elderberry** *(K. Y. W.)*.—We do not know whether you mean green or purple fruit, or green or purple leaves. Sambucus nigra is generally used for medicinal purposes. What properties are you alluding to?

964—**Good keeping Turnip** *(E. M.)*.—In the South of England the Green Stone Turnip is generally used for cattle. Swedes keep better than the White Globe Turnip; but all roots give more or less taste to milk and butter.

965—**Asparagus failing** *(Regular Subscriber)*.—The roots were too old to move successfully. They felt the check too much, hence the cause of weakly growth this year. The treatment was correct as far as the planting went.

966—**Tomatoes not ripening properly** *(Boyla)*.—Perhaps the variety is addicted to irregular ripening, as you appear to have treated the plants correctly; gave them quite enough stimulating food. Try less another season of this particular variety.

967—**Variegated Elm** *(Springmore)*.—It may be that the specimen variegated Elm pointed out to you is the largest in England, but as to its being the only one, that statement is quite erroneous. There are many forms of variegation, probably a dozen or more, and any good general nurseryman can supply.

968—**Persian Lilac not flowering** *(K. Y. W.)*.—We cannot account for the failure with Lilac, if under the same conditions you succeed in flowering the white variety. The plants do not mature their flowering eyes sufficiently; but why we cannot say from the little information given. Azaleas enjoy a sunny position, and both the Ghent and Mollis varieties are deciduous; but unless flower-buds are set in the summer, you cannot have bloom the following spring.

969—**Flower-beds** *(T. G. A.)*.—Pæonies and Lilies would certainly look well in the centre bed, but if you like blue, Delphiniums in variety would be very showy. You do not say how large your beds are, and we are in a difficulty as to what size plants to recommend. You could have many colours in Tuberous Begonias, Zonal and Ivy-leaf Pelargoniums, Pansies, and the general run of bedding plants, that would be gay all the summer; or Pompon Dahlias, Gaillardias, etc.

970—**Tomato plants diseased** *(W. Sands)*.—The plants are infested with the Tomato disease (Peronospera infestans). Cut off all affected leaves and shoots. If the main stem is diseased pull the plants up also. Keep the house dry and warm by making the hot-water pipes quite hot. At the same time admit air at the top. Sprinkle flowers of sulphur over every part of the plant so infested; also scatter sulphur about the house. The fumes will check the growth of the fungus. Cease watering the plants for a time.

971—**To get a good Strawberry-bed** *(S. Gaunt)*.—The runners may have been taken from an unfruitful stock, hence the plants not bearing any fruit. We should try them another season, as the vigorous growth they appear to have made may be the cause of the plants not showing any blossoms. It is most unusual for young plants not to show fruit the first year, although it is wise to pick it off so as to encourage the plants to grow larger, so as to give double the return the following season.

972—**Size of stand for exhibiting Carnations** *(M. Welsh)*.—For exhibiting six Carnations blooms the stand should be in length 11¾ inches, and width, 7¾ inches. The stand should be constructed that there be three rows of two holes in each, these holes being 3¾ inches from centre to centre, and 2½ inches from centre to outside. The stand should be constructed of deal ⅜ inch thick, and painted a deep rich green. They may be rendered still more attractive by being neatly varnished.

973—**Clematises after flowering** *(D.)*.—There are such a vast number of Clematises, and several distinct classes or sections, each of which need different pruning to secure the best result. We imagine yours to be one of the patens or of the Florida types, both flowering in late spring upon ripened growths. Thin out the top shoots, but let them grow at will. Next spring, tie some of these down towards the base of your plant; in fact, distribute the wood before new growth commences, when you will have a good and even show of bloom.

974—**Stand for exhibiting fancy Pansies** *(M. Welsh)*.—The fancy Pansy should be shown in trays or stands of the following dimensions: For six blooms the length should be 10½ inches, breadth, 7½ inches, height at back, 4 inches, and in front, 2 inches. The holes should be 3 inches apart from centre to centre each way. The stands are made of zinc, and a deep green colour. The holes are made for the zinc tubes to be fixed underneath, permanently, in a slanting direction, and it is very important that no escape for the water shall be possible.

975—**Value of soot-water** *(On Yon Bonnie Banks)*.—Soot-water is good for all soft-wooded, free-growing plants like Fuchsias, Balsams, Cinerarias, and the like. It is not wise to mix the soot with the water, but put say ½ bushel in a bag, sinking the bag in a tub of water, holding, say 50 gallons, filling the tub up as required; the soot will last for at least one month's water supply. Soot sprinkled thinly over the surface and lightly forked in is good for any flowers in the open border. It must not, however, be used in excess, or it will injure the roots of most plants.

976—**Peach stones split and decayed** *(Ashburn)*.—Some varieties of Peaches and Nectarines are addicted to stone splitting. Nothing will stop the defect when the variety is the cause. In your case there appears to be a cause. Perhaps the branch that usually bears the split fruit has received a check in some way or other. Has it been checked by a too tight ligature at some period? Perhaps the branch is decaying also, being attacked by some fungus near the part which separates it from the other. In the absence of more information it is difficult to suggest other reasons for stone splitting.

977—**Unsatisfactory Artichokes** *(Prious Barton)*—Possibly the Artichoke plants were raised from seed; if so, this would account for the shape not being of the right form. The specimen sent is narrow and too much pointed. Good heads should bulge out, as it were, in the middle. Culture, of course, has much to do with the quality; in fact, given the correct variety, it has all to do between good and bad specimens. We would advise you to obtain a root from a well-known, good source, trench the ground deeply, adding manure freely, and supplying the roots copiously with water during dry weather.

978—**Manure-heap near conservatory** *(Sussex)*.—No doubt the ammonia arising from the manure close to the greenhouse is a source of encouragement to the flies. Remove the manure and test the matter. Green-fly is easily got rid of by fumigating with Tobacco-smoke. Once filling the house is not generally sufficient. The best way to fumigate any house is to fill it with smoke in the evening and repeat the dose in the morning. You then finally settle all the aphis only partly suffocated the previous night. Afterwards thoroughly syringe the plants and creepers with tepid water. Richards' XL vaporiser is very suitable for small houses.

979—**Cucumbers dying** *(B. S.)*.—Overcropping and mismanagement generally is the cause of Cucumbers decaying prematurely. Overcropping is a certain source of trouble. Instead of leaving four fruits to every joint as some do, thin them down to one, or at the most, two, directly they are large enough to handle. Dryness at the root will cause the trouble, and so will stagnation of moisture there also. Dig down to the bottom of the border; if the soil is dust-dry, give a thorough soaking of tepid water. If the opposite of dry, fork over the surface lightly, admitting air to the roots, which will disperse the stagnation. A bad attack of red-spider or mildew on the foliage is all against a good crop of first-class fruit.

980—**Best specimen plant for exhibiting in July** *(Ignoramus)*.—A well-developed specimen Fuchsia, 6 feet high and 3 feet wide at the base, would be a good specimen soft-wooded plant. A Pelargonium 4 feet in diameter, or a Zonal "Geranium" a yard across would also be a credit to any cultivator. If a hard-wooded plant is desired, an Erica, Stephanotis, Dipladenia, Allamanda, or a Bougainvillea would be desirable. Of course, these latter are more difficult of cultivation. Cut around the roots of Calceolarias with a spade 6 inches from the stem one week before lifting the plants. Take them up fully one month before the show, so as to give them time to get over the check. Stand the pots behind a south wall or in a well-shaded frame, syringing the plants at first three times daily until new roots are forming in the fresh soil.

981—**Improving a hedge** *(Dummy)*.—It is too late now to do much to the hedge for this year, except cutting back any overhanging branch that may be interfering with any other plant or path near. In November or February cut the hedge down to one uniform height, say 3 feet from the ground if the lower part is even and thick at the base. If not, cut to where it is, if within 1 foot of the soil. You will then get a thick, close hedge by timely clipping. Dig some half-rotted manure in about the roots, say 3 inches under the surface, so as to enrich the soil and put some vigour into subsequent growths. Clipping should commence when the new growth is 6 inches long, and continue throughout the summer in the same way. The point is to get the hedge as thick as possible and as level also as can be at the sides. Allow the height to increase 1 foot each year.

982—**Rheum-leaves eaten** *(On Yon Bonnie Banks)*.—The leaves of the Rheum are eaten by some caterpillar. If a close inspection was made after dark by the aid of a light, the marauders would no doubt be found. If not, sprinkle the earth about the plant nightly with quick-lime or fresh soot. If the leaves exhibit signs by the slimy marks left upon them from slugs, sprinkle the soil with bran which will act as a bait; at night they could easily be caught when feeding on the bran. The reason of the leaves turning yellow soon after the plant was put out points to two causes. First, the plant was not sufficiently hardened off previous to being put out-of-doors; secondly, the roots have been allowed to become too dry, which has brought about premature decay. Searching by night is the best means of getting rid of the small white slugs, first baiting them with a little bran sprinkled about the plants they eat.

983—**Show Auricula seedlings** *(J. E.)*.—All show Auriculas are slow growing, and seedling plants with but four leaves ought to share a small sixty sized flower-pot with three or four others until they grow larger, when they may be potted in a small sixty. I have grown and flowered thousands of them, and my method is to prick the small plants out, say a dozen in a small sixty at first. When the leaves have all met together they are potted off three in a small sixty. After the three plants have grown considerably, they are potted off singly in small sixties. These, when they have filled the small flower-pots with roots, are planted in large sixties or small 48's—that is, pots from 3½ inches to 4½ inches diameter (inside measure) The larger size is quite enough for the strongest show Auricula. The potting soil ought to be fibrous loam four parts, leaf-mould one part, and decayed manure one part, with a mixture of coarse white sand.—J. D. E.

984—**Pyrus Malus floribunda, etc.** *(Salopian)*.—Some persons confuse Pyrus floribunda with Pyrus Malus floribunda. The former opens its blossoms earlier, is paler in colour, and with slender shoots. P. M floribunda is more of a semi-drooping habit, and is later in blossoming. Sweet Peas behaved in a remarkable manner last year as to their manner of growth and flowering. They are not generally regarded as perennials, but they sometimes do live over a mild winter like the last. The Eschscholtzias are perhaps in a sheltered spot. Are you certain it is the same plants, or self sown from the original plants? If the native Heather is carefully dug out in blocks with plenty of soil attached to the roots toward the end of March, planted in peaty soil, well watered and shaded from bright sun, no difficulty should be experienced in establishing it. Taken up without any soil adhering to its roots, and planted in hungry sandy soil without any after attention is not the way to command success.

985—**Treatment of old fruit-garden** *(The Retreat)*.—Cut down the old Moss-covered and neglected Currants, also the poor Gooseberries, and replace in the autumn. You will not find anything doing well upon an east wall overhung by Sycamore-trees. Rhubarb will grow upon either of your borders, and we would plant the Cordon Apples down the centre during the coming autumn; and it would be well to thin out all indifferent varieties of fruit-trees and replant at the same time. Apple and Pears will thrive where Gooseberries or Currants have been; why not? Yours is such an excellent selection that we would not alter it in any way. Victoria is a good Plum for a north-west wall. Leave the Raspberries until the canes ripen, when lift the whole, cleanse and mend the soil, and replant a few of best young canes. Your garden simply needs a good dressing of lime next winter to cleanse and freshen the whole. Your plans of future treatment are very good, and we do not see how you could improve upon them. We would suggest, however, that you get some experienced local gardener to look round with you for an hour or so, seeing you contemplate so many alterations.

986—**A single-handed gardener.**—Will you kindly tell me through the medium of your paper whether I am entitled to exhibit as a single-handed gardener, having a boy employed in the house to clean boots, etc., up till one o'clock each day, and he has to fill up his time for the rest of the day in the garden (age 14½)? There are classes that I intend to exhibit at our show, and should not like to run the risk of being disqualified.—W.

*** *We should certainly say that you are entitled to exhibit as a single-handed gardener.*

987—**China Aster plants dying.**—What is the cause of my Asters dying when they get ready for planting out? They look all right one day, the next drop down on the soil. I grow them in fairly good soil, with a little leaf-mould and sand mixed. Enclosed find a few of them. —DISAPPOINTED.

*** *The death of the Aster plants is due to some cultural defect. There must be something in the soil to make them go off suddenly. Remove them at once to their flowering quarters, when you will probably save the remainder.*

988—**Iceland Poppies.**—Do Iceland Poppies increase by roots spreading or by seeding themselves?—41ST

*** *By seeds only.*

989—**Weatherill's Solanum.**—What is the plant "Solanum" Weatherill's? I have a nice lot of it planted out in boxes, but do not know what it is.—INQUIRER.

*** *This is simply a large variety of the common Winter Cherry (Solanum Capsicastrum).*

990—**Carnation Uriah Pike after flowering.**—Will you kindly tell me what to do with my Carnations (Uriah Pike)? They are in pots in the greenhouse and just going out of bloom. I want some for flowering next spring. Ought they to be layered, or will the old plants do again? —F. J. W.

*** *The old plants will flower another season. You ought, however, to insert cuttings at once, so as to keep up the stock. Next year you might put out the old plants in the garden directly they have flowered and layer them. At the present time take off what cuttings you can spare, dibble them around the edge of a 4-inch pot in sandy soil, giving them a little heat.*

991—**Vine unsatisfactory.**—Will you kindly tell me through GARDENING what is the cause of Grape-Vine going to flower and dropping off, as enclosed? The Vine was cut back and washed with the solution you advised—namely, lime and sulphur.—F. EATONSORE.

*** *The Vine-leaf received was exceptionally small, and the bunches were most peculiar in shape. What variety have you, and is the Vine growing in a pot or planted out? In consequence of no detail as to your treatment coming to hand it is most difficult to give you a reason as to the cause. We should say from the specimens received it is an inferior variety.*

992—**Beech-trees barked by hares.**—I was much obliged for the receipt you gave me in GARDENING of a mixture to be applied to trunks of Beech-trees which hares had commenced to bark. I applied the mixture as directed, with very good results, the hares desisting from any further barking. My present difficulty is not knowing what to do with the portions of the trunks of the trees from which the bark has been removed. I fear the bark will not be able to grow together again over these places, as they are so large. I should be much obliged if you could tell me whether it would be possible to graft fresh bark on to these places from which the old bark has been removed, or if this is not possible, should I paint the portions barked so as to prevent the wood from rotting? I notice in some gardening books that hares are said to do no damage, but in this locality they do far more damage than rabbits, especially in the winter, and even began barking Conifers planted some twenty or so years ago. But Beech-trees, no matter what age, appear to be what they like best.—GEO. MACARTNEY.

*** *In time the bark will grow over the damaged parts, but, if the wounds are large, it will take a long time. It is not possible to graft any bark on to such trees. A coat of paint of the same colour as the bark would render the trees less unsightly. The wood will not suffer by exposure. It is when the wounds are deep that the wet gets in. In your case only the bark has suffered.*

993—**Spanish Iris bulbs.**—Will you please tell me in GARDENING where I can purchase the Spanish Iris bulbs mentioned, and how much are they the hundred?—C. D. E. F.

*** *These are very reasonable in price indeed, and any good bulb catalogue will help you as regards price.*

994—**Pruning Clematis montana.**—When should C. montana be pruned? Is it on the young wood the flowers for next year come?—BEAD.

*** *C. montana flowers upon the ripened growths of the previous season. They are borne in small clusters upon lateral shoots. We never prune this grand variety, but allow it to grow at will, except for thinning out when the mass of growth encroaches too much.*

995—**Best flavoured Strawberries.**—Is Sir John Ruskin Strawberry generally of poor flavour? What are the best flavoured Strawberries—early, medium, and late—preferring those that hold the fruit high off the ground, and saying whether red or white?—RIPE RED.

*** *John Ruskin Strawberry is not remarkable for its good flavour; it is regarded as a very prolific early sort.*

The best early flavoured Strawberry is Vicomtesse Hericart de Thury, the best medium is Keen's Seedling, and British Queen the most desirable for late use. The Strawberry that holds its fruit highest from the ground is Royal Sovereign, a really good and deserving variety for early work, but not quite so good in flavour as those named.

996—**Taking Pansy cuttings.**—What time of year should Pansy cuttings be taken for next year, and when should "bedding Pansy" seeds be sown, also for next year?—T. Shortlands.

*** *To have a stock of suitable plants for flowering next year the cuttings should be inserted at once in sandy soil in a cold-frame kept shaded from bright sun until roots are formed. Some persons think the strong shoots that carried this season's flowers are the best for cuttings; they are really the worst, being hollow as a rule. The best cuttings are those springing from the base of the plant at this season. February or March is the best time to sow Pansy seed to produce plants to blossom during the current year.*

997—**Cucumbers.**—Does the expression "nip out point" mean pick off the leader? The expression was used in your issue of Feb. 13th. One gardener recommended me to nip off the point after the formation of third rough leaf. Another to pinch out the joint above the second leaf, when two lateral shoots would be sent out. Also to pick off the top. Another simply to pinch the leader.—Amateur.

*** *The expression "nip out the point" is meant to imply that the point of any shoot, leader, or otherwise, should be cut off. In some cases the leader should not be "nipped." When it is to be so nipped such is stated for the guidance of cultivators. In growing Cucumbers in a house the leader is allowed to grow fully a yard long before stopped, even not then if side shoots push freely. The object of "nipping out the point" is to induce lateral growths to push from the leaf axils below. Generally, side shoots of Cucumber-plants are pinched at the second leaf.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits we it to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*E. C.*—Pyrus Aria pinnatifida. ——*Norwood.*—1, Cotoneaster affinis, specimen crushed; 2, Acer campestre; 3, Castanea vesca; 4, Pyrus Aria vestita; 5, Carpinus americana; 6, Cotoneaster frigida. ——*E. Howe.*—Specimen not in condition. Probably Clematis Enchantress.——*C M. Dickinson.*—1, Euonymus europæus; 2, Cratægus Pyracantha; 3, Clematis Duke of Buccleuch.——*E. M.*—The specimen you send is Lopezia hirsuta, a native of Mexico. It is a weedy herb, not a climber.——*Utica.*—1, Aquilegia, but too withered to tell which; 2, Lyre-flower (Dielytra spectabilis); 3, Papaver pilosum; 4, the Old White-fringed Pink; 5, Centaurea montana rosea; 6, Fuchsia, but there are so many florists' varieties we cannot determine kind. It has no distinctive characteristics.——*J. D. E., Rotherfield.*—The white flower is Spiræa Filipendula plena.——*G. E. Allen.*—Common Alkanet (Anchusa officinalis).——*M. S.*—The name of your double Clematis is Countess of Lovelace, and the Rose Jean Ducher (Tea).——*H. Burton.*—You must send flowers or fruit of the Cratægus ——*Tib.*—From mere scrap of flower you sent we should say your plant is Astrantia major.——*F. Parish.*—Your Yellow Rose is Persian Yellow. No. 2, the dark one, was shattered to pieces. Send again, carefully packed. We cannot name varieties of such florists' flowers as Pyrethrums.——*E. C. A.*—A variety of Nephrolepis, but which of the many we do not recognise from portions sent. It is easily grown, does not need a large pot, prefers rather coarse soil, good drainage, and plenty of water. If your compost was fine, it would account for the weakly fronds.——*E. Roy.*—The Orchis is the Butter-fly Orchis (Habenaria bifolia); the other is Veronica gentianoides. See reply *re* "Salep" under Reply Column.——*A French Reader.*—The name of your plant is Oxalis violacea, a hardy perennial; therefore it will grow either in the greenhouse or in the open. To increase the stock divide it into small pieces—each with a root will grow. March is the best time for this operation. In the greenhouse it should have plenty of water when growing freely and flowering. In the winter it requires very little, just enough to keep the leaves from flagging.——*Swanage.*—Orange Ball-tree (Buddlea globosa). We have seen one or two good plants of it at Ealing. It should do well in a fairly light soil and sunny position. Although apt to get cut down in severe winters, ordinary frost is not harmful. ——*Hackwood.*—We think it is the common Elder, but could tell better if larger leaves were sent and fruit.—— *G. C.*—1, Dracæna lineata; 2, Veronica Traversi; 3, Tradescantia virginica; 4, Habrothamnus elegans; 5, Please send in flower; 6, Euonymus latifolius variegatus.—— *H. Brooks.*—1 and 2, Varieties of the Sun Rose (Helianthemum vulgare); 3, Veronica rupestris; 4, Spanish Iris.—— *J. W. Harcourt*—We cannot name Pinks from single flowers. The varieties are so much alike. We are pleased to see you are growing the quaint laced kinds.——*B. H.*—Kindly send in flower. Other query will be answered next week.——*W. Smith.*—Kindly send flowers. Cannot do anything unless we know something about the bloom.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Inquirer.—"The Amateur's Greenhouse," published at the *Bazaar* Office, 170, Strand, W.C., will help you, but Gardening would supply your needs.

Iris tingitana.—This is a very pleasing bulbous species with pale flowers that bear some resemblance to those of the so-called Spanish kinds. Seeing that in favoured positions this Iris flowers quite early in May, should be a sufficient guarantee of its value in the garden. t requires a rather dry spot, and one protected from inter wet as much as possible.

BIRDS.

MANAGEMENT OF CAGE BIRDS.

The Woodlark (Alauda arborea).

This sweet songster is somewhat smaller than the Skylark, but which in other respects it much resembles. The top of the head is reddish-brown with dark brown lines, the feathers being so long that they can be raised at pleasure into the form of a crest, which from eye to eye is surrounded by a yellowish-white line. It has a shorter tail than the Skylark, and perches on trees and bushes, which the latter never does. In our island the Woodlark appears to confine itself to the southern and midland counties, frequenting cultivated fields, bordered by trees and woodlands. The nest is built upon the ground, under the covert of some low bush or tuft of herbage, and is composed of dried Grasses, lined with fine materials, the eggs being of a pale brown, marked with brown blotches. Young Woodlarks are not difficult to rear by hand, and should be fed upon sweet bread-and-milk, lean meat, and ants' eggs. The adult birds will thrive upon German paste, grated hard-boiled egg and bread-crumbs, grated Carrot, ants' eggs, and meal-worms, which should be cut up small. This species, like the Skylark, rolls itself in sand and dust, and picks out and swallows the grains of sand to assist digestion; but as the caged Woodlark suffers from the extreme delicacy of its feet, which sometimes become so tender as to render it a difficult matter to stand upon them, the bottom of the cage should be covered with soft hay or Moss, and the sand supplied in a small vessel placed within the cage. Although the notes of this bird are less varied than those of the Skylark they are more rich, melodious, and flute-like, which, in its wild state, are generally uttered on the wing, and while describing large circles in the air. It will also pour forth its charming song for hours together while perched on a tree. S. S. G.

POULTRY.

Best age for male bird *(C. C.).*—Much depends upon the breed of bird; more, perhaps, on the manner in which he is kept. For example, amongst the heavier breeds, such as Brahmas and the like, I am of the opinion that birds are somewhat risky after their second year, whereas with lighter breeds a year older will still find the male bird vigorous; but even heavy Fowls may be serviceable in their third season under certain conditions. The best average for broods of chickens I ever obtained was some four or five years since, when from thirty-one hens I took 315 chickens from the nest. A large proportion of these were sired by a three-year-old Orpington cock, who had been kept in a separate run all the winter before being mated up with the hens. Had he been allowed to run at liberty it is extremely likely the results would have been far less satisfactory. On the whole, I believe the best hatches—both as regards numbers and vigour—to be obtainable from a cockerel about a year old mated with hens in their second or third seasons. As regards rats, the best contrivance is to make the bottoms of the coop rest on a sheet of ½-inch wire-netting. The front should also be treated in the same way, and securely fastened each night. —Doulting.

LAW.

Compensation due to tenant of market garden.—In 1888 I took a field without any written agreement of any kind, but there was a mutual understanding that I was to convert the field into a market garden. The place is now well stocked with fruit-trees and fruit-bushes, and I have put up an iron shed and some glass-houses, frames, etc., on brick foundations. If I had to quit the place, and the landlord could not find a tenant who would take the stock, would the landlord be obliged to pay me for it? Garden.

*** I presume the place was let to you on a yearly tenancy, and I may point out that it will be a yearly tenancy if it is let at a yearly rent no matter whether payable quarterly or not. As it is let on a yearly tenancy, and as it was with the landlord's express knowledge and tacit assent cultivated as a market garden previous to January 1st, 1896, the Market Gardeners' Compensation Act, 1895, applies, and on quitting you would be entitled to compensation for the fruit-trees and fruit-bushes planted by you and permanently set out. Also to compensation for Strawberry-plants, and for Asparagus and other vegetable crops planted by you, and for the erection of buildings, etc., or for the enlargement of existing buildings, if any. Such compensation would have to be claimed in the manner provided by the Agricultural Holdings Act—that is to say, not less than two calendar months before the termination of the tenancy written notice of the claim must be given to the landlord, and the notice must, so far as is reasonably possible, state the amount and particulars of the intended claim. Unless the landlord admitted the claim and engaged to pay the amount, the claim would be settled by reference under the Agricultural Holdings Act. You will be entitled to a year's notice to quit, the notice to expire with a year of tenancy, and you must so crop and manage the land that when the tenancy expires there shall be no immature crops growing on the holding, except such as will fall within the scope of the crops already mentioned.—K. C. T.

What is a tree or sapling? *(R.).*—We think that any growth that is larger than bushes and underwood must be described as a tree, while a sapling is a young tree. Promising growths of Oak and Ash are, we think, within the proviso of which you speak, and in our opinion you are liable if you cut these growths. We base this opinion upon the clause you quote first, and we think the last clause no protection whatever. It requires you to pleach and lay the fences, and it does not authorise you to do anything to trees. In the construction of an agreement like this some regard would be paid to the subsequent course of management, and if you have during the tenancy always cut these growths and your landlord has made no objection, it would be presumed that such growths were not included in the clause. But, on the other hand, the meaning is pretty evident—you are not to cut down or injure that which is a tree or will become one. In your district is it customary to lay growths of Oak and Ash in hedges? If it is not, on what grounds can you defend the cutting? The only grounds on which you can justify the proceeding is that to properly lay the hedge, the shoots of Oak and Ash must be laid in also. Mind, we say "laid in," not "cut off." If such laying in is not necessary, then, strictly speaking, you have no right to cut these growths, and if you do cut them you are liable.

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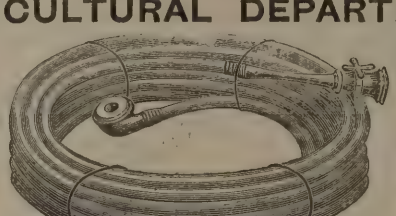

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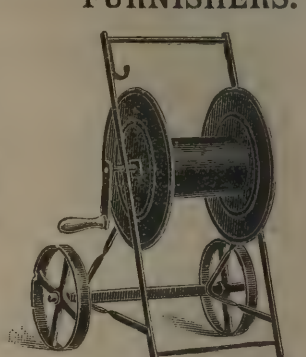

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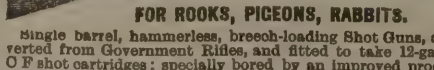

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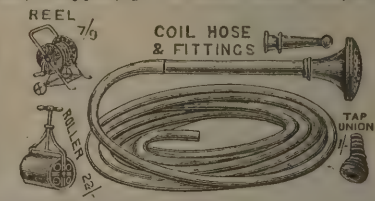

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FRUIT.

SEASONABLE WORK AMONG WALL FRUIT-TREES.

Wall fruit-trees are once more claiming attention, as they have made a considerable amount of growth since the first stopping. The young shoots then fastened back to the wires or wall also require an additional tie or thread and nail, as the case may be, to keep them flush with the wall. Where many wall trees are grown it takes up the principal part of one man's time to attend to them at this season of the year—that is if they are to be maintained in good order—but this is counterbalanced by the fact that such well-cared-for trees really require less pruning in winter-time, and from a labour point of view this is a gain.

Stopping carried out in a sensible manner renders the trees more fruitful and leads to the formation of fruiting spurs, while the tacking or tying back of the young shoots retained ensures a more thorough ripening of the wood than would be the case if they were allowed to project some distance from the wall. Both combined also prevent the fruit becoming unduly shaded, and the tips of the shoots and undersides of the leaves can also be the more easily cleansed when the young wood is kept well fastened back to the wall. In some cases Morello Cherries will not have had attention in this way yet, but I fail to see the advantage to be gained by the delay, as the trees should be ready for netting as soon as the fruits commence to colour. The longer tacking or tying-in is delayed the more difficult it is to accomplish, as the wood becomes stiff and brittle, and if not carefully manipulated the young shoots will break clean out at the base. These shoots must be well thinned out, but at the same time a sufficiency should be left to well furnish the tree with bearing-wood for the ensuing season. All not required are best cut clean out; it is not necessary to have spurs in Morello Cherry-trees on walls. The trees of the sweet or dessert kinds should be well cleansed so soon as they are cleared of their crops. Stop back to four or five buds all superfluous growths, and fasten back in a neat manner all retained for extension. The breastwood on Apricot-trees needs pinching back to within one or two buds from where previously stopped, and all lateral growths on young wood laid in should be stopped in the same manner.

Continue to lay in a young shoot wherever room can be found without crowding, for there is no telling how soon it may be wanted to take the place of some adjacent branch that may die off suddenly. Give a final look over to the crop on the trees on west walls, and do not hesitate to thin should they appear too close together. On south walls the fruits of the Large Early variety will be ripening fast, and the Moor Park and other kinds are also swelling freely. Until the fruits commence to soften wash the trees as often as labour and supply of water will allow, and this in a measure will keep earwigs at bay. Now is the time to apply stimulants and water with no unstinted hand if fine, juicy, and richly-flavoured fruits are expected. Peach-trees, including Nectarines, should be looked over for the last time, and any growths not actually needed removed. Thinning of the fruit should have been completed ere this, and the principal conditions to observe now are to keep the foliage clean by washing as often as circumstances will allow, attending to root waterings when required, which is best ascertained by testing the soil in the borders every other week, and applying stimulants either in a solid or liquid form, according to the condition of the trees. Also give attention to mulching, and renew the same should that previously applied have become worn out. The thing to be dreaded at this time of the year, especially during a dry time like the present, is

Red-spider attacks. On light soils spider is almost sure to be troublesome, and it will also put in an appearance where the water supply is inadequate. Daily washings with clean cold water will keep down attacks, but where water cannot be had or spared the trees should be syringed with some insecticides. This should only be resorted to as a last necessity, as I do not care to make use of insecticides after the fruits commence their final swelling. The Alexander Peach, as usual, will maintain its claim to be a first-rate early kind, and the fruits are colouring and swelling fast towards maturity.

Plums.—Secondary growth should be pinched back and any necessary fastening back of young shoots attended to. In the case of old Plum-trees it is a good plan to retain young shoots at intervals all over the trees to take the place of the old and worn-out branches. If there is not room to fasten these back to the wall they may be trained on the face of the old branches, keeping them in place with a few ties of raffia. There are not many places where methodical washing of Plum-trees can be followed out; nevertheless it is an excellent practice, tending to keep the trees clean and also assisting the fruits to swell to a good size. By the same rule, watering is generally neglected, to say nothing about the application of stimulants, and Plum-trees are generally regarded as not being sufficiently valuable to warrant so much time and labour being bestowed on them in this direction. Trees that do not receive careful attention in these matters are always more productive, and as a natural sequence keep much cleaner and give less trouble in the way of insect attacks.

Pear-trees will need another look over, stopping back all secondary growths. Pay great attention to the training of young shoots, whether they be leaders to cordons or extensions at the ends of horizontal and fan-trained trees. Heavily-cropped trees should be lightened by a judicious thinning of the fruits, and in the case of cordon-trained trees it will be labour well spent if they are given occasional root waterings of diluted liquid-manure. If this cannot be done they should most certainly have water. To prevent too rapid evaporation taking place, renew the surface mulch as often as is necessary, and an occasional washing of the foliage will do an immense amount of good during a spell of hot, dry weather. A.

MULCHING FRUIT-TREES.

If the recent heavy rains which fell so liberally in the metropolitan counties have been general, then have all trees and bushes had a thorough cleansing and the roots so good a moistening that little trouble in the way of insect pests may be looked for. Fruits, being very thin this season, may be expected to be very fine and clean, and with so good a sample prices being much advanced, those who have but half or one-third crops will do very well. As the trees are now in almost luxuriant growth it will be good policy to allow the fruit to hang and swell as long as is safe, not only for the benefit the fruit will obtain, but also because some check will be given to gross wood growth. Where trees are well established it will be advisable, in view of the little strain upon them to carry fruit crops and probably strong wood growth, not to mulch in their case, as the result might be rather disastrous than beneficial. In the case of trees or bushes planted last winter or spring a mulching following at once upon the heavy rainfall, so as to keep in the moisture, will be beneficial. If these newly-planted ones do make strong growth at the first it will be all the better for them later, as in that way they become permanently established early. Seeing that there is a very poor produce on Red Currants this season, it will be good policy in July to cut back two-thirds at least of the summer shoots to three or four leaf-buds. That will both conduce to the setting of fruit-buds at the base of these cut-back shoots and enable light and air to penetrate and assist these buds to swell up. Black Currants will be all the better for a summer thinning, removing one-half of the old and rather exhausted branches. A. D.

Netting Apples and Pears.—Fruit-growers are sometimes vexed by their finest specimen Apples and Pears grown on espalier and horizontal cordons falling to the ground and getting bruised, so as to render them useless for keeping. Exhibitors are especially tried in this way, as sometimes a young tree may not have more than a dish of fruit on, and if only one falls the dish is spoilt. The best safeguards consist in the small square nets sold by various sundriesmen for supporting Melons. One thing necessary to observe in tying on the nets is to allow a fair space between the net and the fruit, so as the latter can expand without undue pressure, otherwise the print of the net will be on the fruit when gathered.—J.

Two vivid Hybrid Perpetual Roses.—The two most brilliant Roses among the H.P.'s flowering just now are Victor Hugo and Duchess of Bedford. The former is a rich velvety scarlet, shaded maroon. It is not very double, but it amply compensates for this defect in its brilliancy and free-blooming qualities. It is of rather moderate growth. Duchess of Bedford is of a totally different character. It has grand petals, the outer ones being tinted down the centre of each with a peculiar purplish colour, the remainder of the flower being intense scarlet-crimson. It is a fine exhibition and garden Rose, even if at times it is a little thin.

FERNS.

FERNS PLANTED OUT IN COOL CONSERVATORIES.

Some Ferns do remarkably well and become objects of great beauty when planted out in a cool conservatory. One of the most beautiful for this purpose is

Woodwardia radicans, having handsome drooping and gracefully-arching fronds which, when the plant is fully established, grow from 3 feet to 6 feet long, and keep in a fine fresh condition the whole of the year where unaffected by sharp frost. Although tolerably hardy it will be quite as well in winter to protect the crowns by means of dry leaf-soil or Cocoa-nut-fibre if the temperature of the house ever runs down below 30 degs., otherwise the soft embryo fronds are apt to sustain injury. Being naturally of a very pendulous habit, it should be planted high up on a mound or rockwork, and allowed plenty of room and soil for its roots to ramble in, or if grown on the flat, it will be necessary to stake and tie up the fronds a little to keep them from spreading flat on the ground. Good rough lumps of loam and peat, with plenty of water all through the summer, will grow this fine Fern to perfection, and anyone requiring a handsome ornament for a large elevated vase or basket, will find this one of the very best plants they can use. Protected in the manner above mentioned, it will live out in the hardy fernery, and there it forms an exceedingly ornamental object and very distinct amongst others. Next to the Woodwardia in point of merit is

Lomaria chilensis, a noble species, having smooth dark-green fronds from 3 feet to 4 feet long, rising from a large scaly crown that creeps along the ground or over the edge of rockwork, to which it clings with great tenacity, and soon spreads over a large space. Lomaria magellanica is another fine Fern, the fronds of which rise from the densely-covered crowns of a massive tree-like stem, and are very broad and gracefully arching. When fully grown it forms altogether a fine object, but is not quite so hardy as the preceding. Cyrtomium falcatum is quite an acquisition either indoors or out, and is as striking and distinct among Ferns as the Holly is among evergreens, the fronds being much of the same character as the leaves of that well-known shrub as far as regards their thick texture and rich, dark-green glossy appearance. This Fern is sufficiently hardy to stand out in favoured localities without protection, and should be in every cool fernery.

Adiantum pedatum is another Fern of rare merit, and the only drawback it has is that it is deciduous, but for all that it ought to have a place even amongst the most select, as the delicately-tinted green of its beautifully radiating fronds makes it a very conspicuous object wherever grown. Lastrea Filix-mas cristata is a highly-ornamental Fern, having fronds about 2 feet long, the margins of which are beautifully crested up their entire length, and terminated with more densely-tufted points, the weight of which causes them to arch over in the most graceful manner possible. Lastrea opaca is likewise a very fine Fern from Japan. It has fine spreading deep green fronds that always look healthy on account of their bright, polished appearance. Lastrea Standishi is another remarkably fine Fern, and quite distinct from the foregoing, the fronds of which are very large, of a pale green, and most elegantly divided.

Lastrea Sieboldi is also a fine variety of numerous family of Ferns, having spreading, very broad, triangular, deep green fronds rising from a strong crown, like the manner of Cyrtomium falcatum. Lastrea Goldieana, too, is a strikingly ornamental kind, and well worth growing in any collection where space can be afforded it. Polystichum falchinellum is one of the finest of the Polystichums, and this, with P. pungens and P. Brauni, are the best of the exotic varieties of these that obtain much size.

Asplenium lucidum is one of the most showy of Ferns, and makes a remarkably fine bold plant where it can have plenty of room to develop itself properly. Dicksonia culcita is likewise a noble Fern that makes fronds 4 feet to 6 feet long, of a fine bright green colour, which when fully matured and in a fertile state, are thickly dotted on the underside with dark brown spores that add much to their ornamental appearance. Davallia canariensis, better known as the Hare's-foot Fern, is a general favourite, and does remarkably well where it can have just a little shelter during very sharp weather in winter, as in a cool conservatory. Pteris cretica, Pteris albo-lineata, and P. scaberula are all sufficiently hardy to succeed in a cool-house, and are considered quite choice, even amongst the best of greenhouse collections. If deciduous kinds are not objected to, then Struthiopteris germanica is sure to please, as the fine fronds it makes are regularly arranged just like the feathers in a shuttlecock, and droop over at the points in a graceful curve, thus giving the plant a very stately look, and making it a most conspicuous object wherever it may be placed. Onoclea sensibilis is a so-called flowering Fern of great beauty; it is of a fast-spreading habit, and likes plenty of shade and moisture and a loose soil in which it can ramble freely. For very small conservatories, of course, some of the stronger-growing kinds here mentioned must be left out, but for an ordinary-sized house the kinds named will give every satisfaction.

B. H.

HOUSE AND WINDOW GARDENING.

TUFTED PANSIES FOR TABLE DECORATIONS.

Now that the Tufted Pansies are flowering freely an opportunity presents itself for using their flowers for table decoration. The flowers do not last long during the very hot weather, but this should not deter anyone from taking them in hand, as the vases, etc., may be refilled each day or so with fresh blossoms, and the colours so varied that there is a constant change and novelty. A useful purpose is also served in this way, as the plants are kept in a far healthier and satisfactory condition if the blossoms are constantly removed, and the trouble of picking off spent flowers is also avoided. A small collection of plants should very easily provide one so inclined with plenty of flowers for decorations, and at the same time keep the beds and borders bright. Larger collections, of course, have a greater advantage, as there are always more flowers to be had, and added to this much greater variety may be obtained in the decoration of the table. On one day, say, the choice may be confined to the yellow sorts, and these may be had in many different shades of colour, several of the best rayless varieties being seen to advantage. Of dark yellows, some of the best are Bullion, Lord Elcho, A. J. Rowberry, Lizzie Paul, and Mary Gilbert. Of the higher shades of colour Pembroke is one of the very best rayless sorts, with long stalks and very fragrant, Ardwell Gem, and Lizzie Lindsay. Either of these varieties, arranged alone or in association with each other, are very rich. White flowers, arranged alternately with the yellows, also are beautiful, the best of the creamy-white varieties for this purpose being Nellie, Marchioness, President, and Christiana. Pure white kinds are Niphetos, Lady Dundonald, and Mrs. Scott. The mauve forms are well represented by William Niel and Magic. But the most interesting for this kind of work are the lavender and blush-tinted kinds. Of these there are several of beautiful form and colour, while their fragrance is delicate. These are best represented by Rosea pallida, Florizel, Blush Queen, and Norah May. Of the fancy varieties, with their interesting markings and shadings, are Cottage Maid, Mrs. C. F. Gordon, Stophill Gem, Mrs. H. Bellamy, Princess Beatrice, and Miss A. M. Young. Then there are many pretty edged flowers, of which Duchess of Fife, Border Witch, Butterfly, Goldfinch, and White Duchess are the prettiest. Of blue flowers there are a few good sorts, but under artificial light they are not seen to advantage; for day use, however, they are very useful. The best dark blues are Max Kolb, Archie Grant, and Britannia, while the best of a lighter shade are Magnificent and Blue Gown.

The many small tubes and glasses are suitable for filling with blossoms of the Tufted Pansy, three or four flowers in the smaller ones, and about half-a-dozen in the larger receptacles, being ample to make a pleasing display. A few pieces of Pansy foliage is all that is necessary to get a pretty effect, but if this is not obtainable any other foliage may be used. Although one does not care to recommend Fern foliage, yet this enhances the beauty of the flowers when other foliage cannot be had. A piece of Grass in each tube also gives it a finish.

In the many competitions for table decorations held throughout the country, readers of Gardening who may be interested will find the use of these flowers very serviceable.

D. B. C.

GOOD ROOM PLANTS.

Last autumn I had given me a neat plant of the pretty Araucaria excelsa. It was in a 48-sized pot, and about 16 inches in height. I kept it in a cool room looking west, in which during the winter a fire was lit only once a week. Still the plant kept remarkably well, and was always admired for its grace and beauty. In the month of April I gave it a shift into a 6-inch pot, using soil half peat, the rest turfy loam, leaf-soil, and sand. In shifting the root-ball was denuded of the old drainage and some of the exhausted soil, and potted fairly firm. Since then, still in the same room, the plant has made good growth, and, besides throwing out from the top a fresh whorl of branches, new points have come from all the old branches. This experience shows what a capital hardy or cool-room plant this is. Very charming, too, is the bushy Asparagus plumosus nanus. Plants of this Fern-like Asparagus should be first grown on in gentle warmth until 18 inches in height and fairly bushy, then hardened in a cool greenhouse. Thus prepared, and stood in ample light in cool rooms, they endure even during winter for several months, and are exceeding light and graceful. When the leafage begins to fall it is desirable to cut down the growth, repot, and place in warmth again. I mention these two plants specially because not commonly grown in rooms, where we see too many large-leaved Aspidistras, Palms, India-rubbers, etc. Very pretty, too, are the forms of Pteris tremula. How interesting would be a competition, say in May, of six plants in pots that had been grown in a cool room all the winter, gracefulness being an important feature in the judging.

A.

SEEDLING CARNATIONS.

At the present moment many amateurs will be looking forward to the flowering of their seedlings. These, if they have been secured from a reliable Carnation specialist, will give in many cases good results. If five per cent. of really first-class varieties are found, the grower may consider himself fortunate. There may be a further ten per cent. or fifteen per cent. of really good flowers, but such as are no improvement upon existing named kinds. The choicest seedlings out of the entire batch, moreover, have a tendency to run entirely to flower. It is aggravating to find a dozen or more flowering shoots of a bloom which may be considered first-class, but not a particle of grass for layering. This, I regret to say, is my case at the present moment. I have a white, which I think is the largest and finest of anything I have ever seen, a seedling from Mrs. Eric Hambro; the plant had more than a dozen flowering shoots, but nothing that can be propagated, so it will flower itself to death, and that will be the end of it. However, as there is in the same border several hundred from the same source, I trust that something may come out which is as good, or perhaps better.

H. W. Wequelin.

St. Marychurch, Torquay.

Abutilon Golden Fleece. — A very showy member of this free-flowering race of greenhouse shrubs, which are amenable to a variety of uses both in the garden and greenhouse. Plants that are trained in the greenhouse and become established flower quite freely, and the large blossoms are then most attractive. Smaller plants in pots, if plunged or in other ways restricted at the roots, flower quite freely in the open in vases or beds, while in sub-tropical arrangements such things may always be used with good results.

OUTDOOR PLANTS.

STARWORTS (MICHAELMAS DAISIES).*

When tall Phloxes and perennial Sunflowers are on the wane in gardens, Michaelmas Daisies become conspicuous, and later, when the first frosts of October have disfigured Dahlias and Heliotropes, the colours of these hardy plants become brighter, and the flowers seem to derive new vigour from the cold nights, being reminded by them of their native home on the North American prairies, to which a large proportion of them belong.

Any flowers which carry on the gaiety of a garden nearly into winter ought to be carefully encouraged; and though the Michaelmas Daisy cannot compete either in brightness of colour or in size of flower with the Chrysanthemum, still it ornaments many a flower border in which its less hardy rivals would never open their buds at all; and though there are few gardens in which it has not yet found a place, there are still fewer in which it is made as much of as it deserves to be.

The habit of Michaelmas Daisies is so various that one cannot speak about it in general terms. From the tallest, Aster umbellatus, growing 8 feet or 9 feet high, to the dwarf nondescript, probably belonging to a form or hybrid of A. versicolor, rising scarcely to a height of as many inches, every gradation in stature is easily found; and from A. Amellus or A. dumosus, which from a small base spread to a width equal to their height, to those which make a narrow umbel of flowers only at the summit, there is no definite line of distinction. Others, though tall, flower quite down to the ground. Some run at the base so provokingly that they must have great compensating merit to save them from the rubbish heap. But enough has been said to show that we can tell nothing of the habit of Michaelmas Daisies which is true of the whole class, except that they continue to flower when nearly all other flowers in our gardens are over. Perhaps the weakest point about them is their colour, or rather their want of colour. Different shades of dull purple are too prevalent; good clear blue is almost unknown; pure white is scarce, and in most cases soon becomes tinged with purple; the tints to be found are seldom gay and bright.

As the subject of these notes is Michaelmas Daisies, we must try to define the name. The same plant may flower in August in the warm gardens in the South or West of England, whilst in the North it will not open a bud before October. I propose then to fix no limits of lateness, but to exclude early kinds of Aster which in the Midland Counties are generally over before the middle of September. I need not say that perennial Aster and Michaelmas Daisy are not convertible terms. For instance, none of us would call A. alpinus and A. Thomsoni Michaelmas Daisies, though both are very ornamental garden plants. On the other hand, all Michaelmas Daisies are now included in the genus Aster, except three or four good kinds which belong to Boltonia.

I will mention by name a few of the good early Asters which are hardly Michaelmas Daisies, and should not be selected to take part in an October display. A. puniceus, a variable kind with large slate-coloured flowers, and another white form, and A. pyrenæus, with large pale blue flowers and rather ragged and distorted rays—a plant which has narrowly missed being first-class—both of them come out before the wealth of summer flowers is over, and would be more welcome a month later than they are in August. Next there are the doubtfully named varieties of the subgenus Galatella, one of which, 4 feet or 5 feet high, commonly called Aster acris, is an excellent border plant when well cultivated, but hardly late enough to be a Michaelmas Daisy. Two dwarfs of the same season deserve mention; one of them, perhaps the nearest approach to blue in this class, and named A. spectabilis, grows about 18 inches high, has an excellent free habit and a good flower with a golden disc, but is generally over by the middle of September. Another early dwarf of merit is A. corymbosus, generally, but not always, with black wiry stalks, much branched, and abounding with small white starry flowers. These five which I have enumerated are all good species and good border flowers, but generally too early to be included in an October display. I have omitted to speak of those which I have not found to be ornamental, whether early or late. With the exception of A. acris, the other four names are well-defined and undisputed. But when we come to the mass of later-flowering Daisies it is difficult to define them either by botanical name or by any other character. Name is no guarantee of merit, because we find good and bad included in one species; it is no indication of time of flowering, because in some—A. Novæ-Angliæ, for instance—we have comparatively early varieties, and others so late that in a backward season they do not reach flowering at all in my garden. We cannot infer height or habit from name, because in some, say in A. versicolor, botanists have set down to one species forms from 6 feet high to 6 inches. So in speaking of Michaelmas Daisies as garden plants it ought to be known that specific names, even though correct, may be very misleading. When we are told that perennial Asters comprise between three and four hundred botanical names of species and varieties, it seems hard that even these names may be correctly given without fixing the characters of the flowers from a florist's point of view. Perhaps, therefore, the botanical names had better be ignored by gardeners in this class, unless accompanied by some recognised fancy name, because there are few about which botanists are agreed as to the type of the species.

However, the number of botanical species which include all the most ornamental Michaelmas Daisies is not large, perhaps about one-tenth or less of the whole genus. I have been proposing to myself to limit the number of varieties I cultivate to fifty, and these probably would not be found to belong to more than twenty species at most. A good many of them seem to be garden hybrids, perhaps of doubtful parentage, but it matters little to gardeners whether a good flower is a good species or not.

But to return to the proposed fifty, the selection must be taken as very general and capable of contraction or expansion. It is difficult to know how to class the plants, but it is roughly done according to their height as they grow in the retentive soil at Edge Hall. Of kinds which exceed 5 feet, I cultivate A. umbellatus, the tallest of all, and spreading its branches elegantly, but without merit in colour or individual flower; next come two or three tall garden forms, probably of A. Novi-Belgi, of which one which I call Robert Parker, after the worthy nurseryman of Tooting from whom I obtained it, is perhaps the best; two or three of Novæ-Angliæ, one with pink flowers exceeding 6 feet; there is a tall type of A. versicolor, now perhaps to be superseded by improved seedlings; and in the heart-leaved section there is A. Drummondi. Then come the mass of Michaelmas Daisies from 5 feet to 3 feet high. Many of the best of these are classed amongst A. Novi-Belgi, and are variable in colour as well as in height; A. turbinellus in its best form is excellent, and what is now classed as the type of A. lævis, with larger leaves and smaller flowers, has hitherto been mixed with it. Several good forms seem to range between A. lævis, A. Novi-Belgi, and A. Curtisi. Two or three of cordifolius are not surpassed in abundance of flowers and elegance of growth. Other good flowers of this row are A. polyphyllus and its allies, perhaps the nearest approach to pure white. . . . . A. amethystinus, with dense little bright flowers, should not be omitted, nor should the best forms of A. versicolor, known hitherto in gardens as A. discolor major, plants of high merit. Of those below 3 feet, by far the best belong to the Amellus group. As these are often raised from seed, and vary a little, the selection of them should be carefully made. Another, A. dumosus, is very distinct in habit. A. ericoides varies, but contains neat and elegant varieties. A. Shorti, in the heart-leaved class, has good qualities. There is a good and floriferous pink Aster, long wrongly called in catalogues A. longifolius formosus, and A. horizontalis, very persistent in late autumn. Last to be mentioned as late flowers are two excellent dwarfs which compete for the name of A. hybridus nanus. One belongs to A. versicolor, and is quite prostrate in habit; the other, with pale rosy-purple flowers, is of very doubtful parentage, but both deserve to be in every garden, and must have names assigned which are no longer ambiguous, as the two plants are very distinct. This enumeration must be taken as indicating the direction in which good Asters are to be looked for rather than as laying down any rule. Above all, I repeat, let the selection be made by sight, and do not trust names.

As for cultivation, every Michaelmas Daisy should be grown by reference to its ascertained habit. As far as my experience goes, good and rich soil suits them all. I am shy of any which run at the base; but if such are grown, they must be replanted annually, and replanting is far better than cutting round them. This annual division suits a good many of the class, especially A. Novi-Belgi, A. lævis, and their kind. In this class small detached pieces, showing in spring only two or three shoots, make by autumn the best plants and have the finest flowers. They must neither be crowded by having other plants too near them, nor have the stalks too close on each plant, because to be

Starwort (Aster) Harpur-Crewe variety. From a photograph by Mr. S W. Fitzherbert.

* Extracts from paper given by the Rev. Wolley Dod, of Edge Hall, Malpas, before the Royal Horticultural Society.

shown in good condition they must have room to flower freely on each branch down to the lowest. Experience alone will teach the best way to treat each kind. The best time for dividing all of them is as soon as spring growth begins. This may be in January or may be in March, according to the season, but the young shoots should be active and not more than an inch above ground. It is not all that are better for annual division; those of the Amellus section may go on untouched for three or four years or more. Close-growing kinds like A. Novæ-Angliæ and A. cordifolius soon exhaust the soil beneath them, and if not divided want a rich top-dressing in spring. As for where and in what company to grow these plants, different writers have laid down very different and very arbitrary rules. One says they ought only to be grown in wild shrubberies, where they may lean against the shrubs, so as not to require tying. Others, who know that any attempt they might themselves make to grow them in this way would end in their falling over and being smothered by Nettles and Docks, advise growing them in a special border, and staking them all carefully. No absolute rules should be given, as different modes suit different surrounding conditions. In my garden I grow them mixed with other plants in the herbaceous borders, and elsewhere in lots of thirty or forty kinds arranged and graduated together, but all supported by tying, which is an absolute necessity with me. When flower-buds begin to form, those in the mixed borders, which have previously been loosely tied to one rod, are tied out to several short and not conspicuous iron rods, and the branches spread so as to make them cover as much breadth as the flowers will fill. In this way a border which till August was quite full of other flowers may be made to appear in October quite full of Michaelmas Daisies. Some kinds deserve an isolated treatment to display them to their best advantage.

Cultivators of these plants should know that the young leaves of many kinds are a favourite food of slugs. Those which break at the base whilst still in flower attract these marauders most, as affording a prospect of food during the mild days of winter. The slugs hide below the crowns, and if not prevented go on eating the young growth in spring till the plant perishes, and the loss is often ignorantly attributed to frost. There are parts of my garden where neither Pyrethrums nor Delphiniums nor Asters will flourish as perennials unless the slugs are checked by dressing the crowns with lime and soot in autumn.

Some of these Asters are liable to a disease which also spoils many perennial Sunflowers and Rudbeckias Half or all the plant suddenly withers when in flower. It may be due to hot sun following heavy rain, and I call it sunstroke for want of a better name. A. cordifolius is often killed by it, except when planted in shade.

As for the future of the Michaelmas Daisy, it will be gathered from what has been said that the best of them have probably been produced by development in English gardens; the way to improve them, therefore, is to continue growing them from seed. All do not ripen seed alike.

It is superfluous to add, be careful in the selection of seedlings. Tall or short, panicled or umbelled in flowering habit, are matters of taste; but nothing is of greater importance than the form and the colour of the disc. A large disc, with a rich, deep golden colour, sets off a flower which has no other good points, and may in the next generation prove a very important factor.

At all events, there is plenty of room for improvement both in colour and habit, and by looking over hedges we may accidentally find distinct advances in cottage gardens. But in order that we may encourage the improvement of a flower, we must show that it is a desirable flower and worth the trouble of developing. The way in which Michaelmas Daisies have generally been dealt with, both in private and in nursery gardens, has always tended to raise them from obscurity. It can hardly be expected that they will ever compete with Pyrethrums and Delphiniums in popular favour, but in most gardens they are grown more or less, and what is worth growing at all is worth growing in its best form.

—— The Starworts are cherished flowers of autumn, cool in colouring, graceful in growth, and as hardy as a native plant. I have seen the most beautiful pictures of them when they have been planted amongst evergreen shrubs. They break up monotonous banks of Laurels, and fill the garden with colour when the summer has flown. The two species A. Novæ-Angliæ and A. Novi-Belgi give many varieties. Of the former we have rosea, rubra, and the rich purple-violet, William Bowman. A. Novi-Belgi gives us many splendid kinds, not the least interesting being Harpur-Crewe, which has stems about 3 feet high and white flowers, yellow in the centre. Mention must also be made of Archer Hind, the flowers soft blue; Purity, pure white, and Robert Parker, a very tall kind, the flowers lavender-blue in colour, large, and handsome.—C.

A BORDER OF HARDY PLANTS.

In reply to "Ruban," who wishes to know the names of hardy plants that will make a succession of bloom from early spring until late autumn, I give a list of perennials, beginning with those which flower early in the spring and going on with those which flower later, until the autumn-flowering ones bring the little list to a close. They are all plants which bloom freely and will grow in almost any ordinary soil or border.

Bulbs, which can be planted between the other plants, will first come into bloom and make a bright display. Of these Snowdrops and Winter Aconites flower first, then Scilla sibirica, S. bifolia, and Chionodoxa Luciliæ, sardensis, and gigantea. Early-flowering Narcissus, such as Tenby, will flower at the same time as these, and a little later many other Narcissi come into bloom, such as Horsfieldi, P. R. Barr, Emperor, Empress, princeps, etc Then the Narcissus grandis and Stella, and conspicuus, and Figaro follow quickly, and hundreds of others which I have not space to name. Late-flowering self-coloured English Tulips should not be forgotten; and the grand Tulipa Gesneriana makes a brilliant display planted in bold groups. The English Scillas, too, give a mass of bloom. Doronicums, Trollius, and the herbaceous Ranunculus, Alyssum saxatile, Aubrietias, Azalea mollis, double Daisies, and some of the early-flowering Pansies all flower in May, as do also the double red pink, and white European Pæonies, and the single Pæonies, of which some of the best are officinalis Blanda, decora Elatior, officinalis rosea, and Northern Glory. Aquilegias also flower in May and early June, and so do the German Irises and Iris sibirica. Some of the Veronicas, the Geums, and many Pansies, Nepeta Mussini, all the later herbaceous Pæonies, perennial Poppies, Campanulas, Lupins, white and blue Centranthus rubra, and Davuricum and Thunbergianum Lilies, with their great bunches of scarlet and orange flowers, will make June bright with bloom.

In July Delphiniums, Lilium candidum, early-flowering Phloxes, and the earliest-flowering of the perennial Asters hold their own amongst all the wealth of bloom which the Hybrid Perpetual Roses supply, and in August and September the later-flowering Phloxes give a wonderful display in pinks, reds, violets, and white. During these months Rudbeckias, Helianthus, Coreopsis, Heleniums, Heliopsis, many of the Perennial Asters, Tritomas, and Anemone japonica also flower, and in the late autumn we have the later perennial Asters until they get cut down by frost. There are many other hardy plants, but these will make a good display from early spring until late in the autumn if planted so that the plants which are just coming into flower are on each side of those which have ceased to bloom, and fill in the place occupied by them. With a little thought this is easily done. Mrs. Robert Jocelyn.

Platycodon Mariesi.—The large, deep blue campanulate blossoms of this fine plant have now for over a fortnight been brightening up the herbaceous border. It is of the easiest culture, and large clumps of it are extremely attractive. Seeds will ripen in plenty if allowed, and plants are by this means easily raised, this perhaps being the most suitable method of propagation. The old plants may also be taken up after flowering, carefully divided, and replanted. It is one of those useful and showy plants that should find a place in all gardens.

"GERANIUMS" IN THE FLOWER GARDEN.

Despite the rage which for a few years existed for carpet bedding, it is now almost a thing of the past—so far, at any rate, as private places are concerned. We see it still, though on a much reduced scale, in public parks and recreation grounds, but its doom is sealed, and in a few years hence visitors to the latter places will look for it in vain. Coupled with its extreme formality is the fact that, viewed from a distance, it has no effect whatever, and everyone who has had any experience with it knows that, owing to the multiplicity of subjects which sometimes have to be used in a single bed to complete a special design, untold labour in trimming and pinching—so as to prevent the larger things from outgrowing the small—is incurred. Although willing to admit that in the old-fashioned form of massive bedding formality cannot altogether be excluded, yet for the adornment of large flower gardens it will take a lot of beating, and that for viewing at a distance it positively has no equal. The improvement of bedding "Geraniums" has been very marked of late years, although some of the older varieties will hold their own in their respective sections. The most popular dark crimson bedder at the present time is Henry Jacoby, the demand this season in some districts being greater than large growers could supply. Another capital scarlet is John Gibbons, much in favour for bedding in the midlands, and becoming better known each year in the south. It has a fine bushy habit and is very free. Triomphe de Stella is another excellent dark scarlet flower, belonging to the nosegay class, its noble trusses, which are produced in great profusion, being very effective when seen *en masse* For a good scarlet of the dwarfer section, the old Vesuvius is still one of the best, one of its best points being resisting wet weather well. Vesuvius should be planted closely, as its habit of growth is not so spreading as some. The semi-double Wonderful is likewise a first-class "Geranium" of the same colour, being exceedingly free-flowering and holding its trusses intact in rainy weather better than the single forms. As a pink bedder Christine is still worth retaining, its free-flowering character being well known; its chief drawback is its non-resistance of wet weather. A comparatively new variety of this class is E. F. Crocker, which, although much of the same habit of growth as Christine, surpasses it in richness of colour; it is said to be a sport from Christine. Of salmon shades Mr. F. Bartleman must be placed in the front rank as an effective bedder. Mrs. Pollock and Mrs. Harry Cox in the golden tricolor, Crystal Palace Gem in the golden-edged, and Miss Kingsbury and Little Trot in the green and white-leaved section are as good as any. In the bronze-leaved section Black Douglas is as good as any. "Geranium" raisers may take heart, as, judging from the last year or two, there is every probability of an increased demand both for good bedding and pot varieties in the future. J.

Begonia Crimson Gem.—A noteworthy kind because of its dwarf stature and freedom of flowering. It is little more than 9 inches high even when planted out, and therefore a serviceable plant in many bedding arrangements in the garden. The bronzy-crimson hue of its foliage is almost as welcome and attractive as its pretty masses of flowers.

A pretty Marguerite is Erigeron Villarsi, the flowers of a very pleasing soft pink, and carried 2 inches in height. It is a capital thing for facing plant borders, and is very hardy.

Daphne cneorum major.—This dwarf shrub is now very effective from its fragrant, compact trusses of rosy-pink flowers. Among plants of a sub-shrubby character few are more desirable than this in the early spring months. The plant succeeds best in gritty loam, and where partial shade is given it is quite content.

Phlox verna is now very charming, being literally crowded with its reddish-crimson flowers. Sometimes this species inclines to ramble away if given too much root-room, and then it is not so pleasing. We have, however, seen it very beautiful when used as an edging, and the creeping growths and rosy-crimson flowers among the stones are very pretty.

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PROPAGATION OF THE FANCY PANSY FOR AUTUMN PLANTING.

There are two different periods when propagation of the fancy Pansy is carried out, the first during the early part of July, and again later—viz, September. The first and earlier season is the one that interests us now, and those who prefer an early display in the spring would find the present a most suitable time for their propagation. The fancy Pansy, unlike the Tufted Pansy (Viola), begins to deteriorate after its first flush of beauty in the early summer, and growers in the south know full well the difficulty of keeping the plants in anything like satisfactory condition after the end of June, and some seasons even earlier than this. The earlier system of propagation, therefore, appears to commend itself to our notice, as we may, by propagating early, have plants in nice condition for planting out in their permanent quarters in September, thus, to a large extent, ensuring a display of these richly-coloured flowers in the succeeding spring, and a long time before the weather becomes too warm for the plants to be hindered by the climatic conditions of mid-summer and later.

The best position for the cuttings to be inserted is in a cold-frame, without a frame-light, situated in the coolest part of the garden. This should have a northern aspect, as by these means the cuttings may be shielded from the hot noonday sun, and only getting the effects of the sun in the early morning and late evening. No difficulty will be experienced if the cuttings be inserted in a bed of soil made up on the cool side of a row of small trees, such as bush fruits, as this provides a very effective shading from the hot sun. Whatever portion of it may find its way through the foliage is very harmless, owing to its filtration through the foliage reducing its power. Dig that part of the garden selected a good spade deep, and over this spread to the depth of at least 6 inches some prepared soil, made up of equal parts of loam, leaf-mould, rotten manure, and coarse sand or road-grit.

Success is largely ensured by sifting over this to the depth of some 3 inches or 4 inches, compost similar to that already prescribed, but in this case increasing the quantity of gritty material to double the measurement. The mesh of the sieve should be ½ inch, and this will be found ample for breaking up the ingredients. This should be levelled down and given a good watering with a fine-rosed can, first pressing the soil down evenly with a board, so that it may be kept in an even condition. An hour or two afterwards, and when the water has passed comfortably through the compost, propagation may be proceeded with without delay. The kind of cuttings to select are those which are of recent growth, and which may be found at the base of the old plant. Such cuttings are usually about 2½ inches to 3 inches in length. The two or three lower leaves should be removed, and the cutting cut clean across immediately below a joint, and then dibbled in before it has a chance of withering. Label each variety as it is prepared, and finish it off altogether before proceeding with another one, and thus prevent confusion. When making the hole with the small dibbler, do not make this too deep, and always be quite sure that the soil is firmly pressed around the base of the cutting to prevent it hanging and ultimately collapsing.

Insert the cuttings about 3 inches apart, and the same distance between the rows, as by being liberal in individual spacing the plants may be lifted easier afterwards. A gentle sprinkling overhead after the cuttings are all inserted will settle the soil around them nicely, and freshen them considerably. In positions exposed to the sun, frame-lights may be put on the frames and these shaded. Within a couple of weeks the majority of plants will have rooted, and those in cold-frames may have air gradually given until at length the frame-lights may be entirely removed. Never let the young plants get dry. A gentle dewing overhead during hot weather, if done in the evening, is much appreciated by them.

D. B. Crane.

THE ENGLISH IRIS.

The accompanying illustration shows a group of the English Iris, which is now in beauty in gardens, following the Spanish Iris. The name "English" is certainly misleading, as the plant is not a native, but through being imported from Spain to Bristol, and thence to Holland, the Dutch presumed it flourished in our own land, hence the mistake.

The flowers are handsome in form and showy and varied in colour, ranging from white to deep purple. The bulbs are quite hardy, increase quickly, and should be taken up early in August once in every two years. If left longer in the ground they degenerate.

English Irises.

Culture of perennials (*E. Walker*).—To ensure success with perennials in such a border as yours, the chalk should be taken out to admit of quite 2 feet of well-prepared soil. This should be rich, and the surface during dry weather ought to be mulched with half-decayed horse-manure; this could be covered with ½ inch of fine soil if the appearance of the manure is objected to. The mulching aids growth considerably, as it conserves the moisture in the soil, and this is a better way of aiding growth than even watering the plants continually. The following list of plants will give a quantity of flower over a long season: Achillea The Pearl, 1½ feet; A. tomentosa, 6 inches; Alyssum saxatile compactum, 9 inches; Anemone japonica alba, 3 feet; Anthericum Liliago majus, 2 feet; Aquilegia chrysantha, 2 feet; Michaelmas Daisies, Bocconia cordata, 5 feet; Campanula persicifolia grandiflora (Backhouse's variety), 3 feet; C. glomerata, 2 feet; Centaurea macrocephala, 4 feet; Chelone barbata, 3 feet; Chrysanthemum maximum, 2 feet; Coreopsis grandiflora, 2 feet; Delphiniums, 2 feet to 6 feet; Echinops ritro, 3 feet; Eryngium amethystinum, 3 feet; Erigeron speciosus, 1 foot; Geum miniatum, 2 feet; Helenium Hooperi, 2 feet; Helianthus Miss Mellish, 4 feet; Heuchera sanguinea, 2 feet; Lilium auratum, 3 feet; Lychnis viscaria fl.-pl., 1 foot; Papaver orientale, 4 feet; Monarda didyma, 2 feet; Gladiolus Colvillei, 3 feet; Platycodon grandiflorum, 1½ feet; Potentilla, double, 2 feet; Rudbeckia californica, 4 feet; R. speciosa, 2 feet; Spiræa Aruncus, 4 feet; Thalictrum aquilegifolium, 2 feet; Trollius europæus, 2 feet; Zauschneria californica, 1 foot. Columbines will succeed in any aspect that ordinary perennials will; rich, moist soil is all that is required.

CHRYSANTHEMUMS.

SELECTION OF CHRYSANTHEMUMS.

(In reply to "H. T.")

Yours is a very lengthy list, but we are pleased to reply to your inquiries. There are other readers of Gardening who may find the particulars useful in many ways.

Bush plants.

The following varieties should make good bush plants, providing they are of goodly proportions now: Phœbus, Roseum superbum, Margot, Source d'Or, Souvenir de Petite Ami, Viviand Morel, Mme. Baco, Sunflower, W. Seward, Julie Lagravère, Mrs. Filkins, Snowdrop, W. Tricker, Charles Davis, Elaine, Val d'Andorre, Janette Sheahan (very late), and Mrs. Carter. In growing bush plants you should let the growth run on to the terminal buds, as in this way the blossoms will, as a rule, be much brighter in colour and less likely to damp off when unfolding their florets. Of course, terminal buds generally give smaller blooms, but, as plants are usually grown in bush form for the purpose of conservatory and greenhouse decoration, or for providing a supply of cut flowers, blossoms of large size are not needed, and therefore the smaller ones are much appreciated.

Japanese varieties on crown buds.

The following Japanese varieties are seen in better condition when crown buds are retained, although any date previous to the first week in August must be considered too soon to secure the buds. They should, however, be secured before the last week in August or poor, thin blooms may be the result ultimately. Good Gracious, Golden Wedding, Florence Davis, Edwin Beckett, Mme. Carnot, Autumn Tints, Waban, Lilian Bird, Mr. H. Cannell, Eda Prass, Commandant Blusset, Mrs. H. Weeks, Kentish White, International, Excelsior, Lady E. Smith, Cecil Wray, Boule d'Or, Golden Gate, Stanstead White, L'Isère, James Myers, Mdlle. T. Rey, Mrs. W. J. Godfrey, and International.

Japanese varieties on late crown buds.

The following sorts are likely to develop better flowers if the buds be secured rather late—say, third week or fourth week in August: Val d'Andorre, Phœbus, Louise, Alice M. Love, Souvenir de Petite Amie, Viviand Morel and its sport, Chas. Davis, T. Wilkins, Mme. Baco, Sunflower, W. Seward, W. Tricker, Elaine, Cecil Wray, and Beauty of Exmouth.

Incurved varieties succeeding on late crown buds.

Mme. Darrier, Ami Hoste, Prince Alfred, and John Lambert.

In each instance where the different bud selections have been given it must be distinctly understood to refer to the system of culture where large exhibition flowers are desired, and there is little doubt that in a normal season the best buds to retain would be those recommended here.

We fear many of your names are wrong, and on this account we are obliged to omit several. As your object appears to be to obtain a nice representative display we cannot recommend you to exclude any of the sorts from your selection; at the same time, we can assure you there are many new sorts which should easily supersede those in your list.

Chrysanthemums—which buds to retain (*A. E. G.*).—We are pleased to give you the information asked for, and in doing so, prescribe for plants grown to develop a few blooms of a high standard of excellence. Japanese sorts: Yellow Avalanche, Alberic Lunden, Maiden's Blush, Mrs. J. Wright, Sunflower, F. A. Davis (syn. Jeanne Delane), Edwin Molyneux, Niveum, Stanstead White, Marie

Louise, and Excelsior are each seen in best form from crown-buds, and if late crown-buds can be obtained of the following, so much the better: La Triomphante, Mme. C. Audiguier, Mme. Baco, Mme. Blanche Pigmy, Mme. de Sevin, l'Adorable, Sarah Owen, Mme. Louise Leroy, President Hyde, Puritan, Souvenir de Petite Amie, Louis Boehmer, Comte de Germiny, and Royal Windsor. Other Japanese sorts succeeding well on terminal buds are James Salter, Source d'Or, and Lady Selborne, while the early-flowering sort, Harvest Home, should be grown in a free manner, this suiting it better. Of the incurved sorts, Violet Tomlin, Empress of India, Princess of Wales, and Major Bonaffon are seen in good form when late crown-buds are retained; but Lord Wolseley, Brookleigh Gem, Mrs. Dixon, Mr. Bunn, and Alfred Lyne should have their terminal buds retained. Late crown-buds of King of Crimsons, Cullingfordi, and Chevalier Domage are best, while the Anemone Lady Margaret should have the crown-bud secured Number 42 we do not know. L. Canning is a late white sort, and you should get good late flowers from crown-buds.

Inula glandulosa.—This is a handsome midsummer flowering perennial, and deserves a place in all hardy flower borders. At the present time the first lot of blossoms are unfolding their florets, and when freely open the flowers attain a diameter of between 3 inches and 4 inches. I consider this plant invaluable at this season, as it is exceedingly showy, besides very curious. The colour is a rich golden-orange, the florets narrow and plentiful, with a well defined disc. My plants are not more than 18 inches to 2 feet in height.—D. B. C.

Campanula isophylla.—Of all the family of Campanulas this is the prettiest for pot work, and especially for window ornamentation. The type has blue flowers, but the white variety is the best favoured. One sees in certain parts of Kent this form in exceeding beauty, grown in pots and suspended just inside a room-window. Both varieties are charming if hung in wire-baskets or fixed in brackets amidst the greenery of Ivy or any other leafy climber on the front of cottages. In such places, kept well watered, they seem to luxuriate.—D

The Tulip Poppy.—This is the appellation temporarily given to a brilliant scarlet form of the Rheas type, yet has somewhat dissimilar foliage, having marked milky midribs. It looks very much as if the variety were the product of crossing one of the Shirley Poppies with Papaver umbrosum. It is rather an advantage to have a few set or fixed colours of these Poppies. I rather wonder no one has selected from the beautiful Shirley strains pure white and rose, as these are markedly fine and very lovely. Such Poppies sown outdoors in August and standing through the winter, give from several plants really grand masses of colour in the early summer; another April sowing in clumps and properly thinned, carry on the bloom into the autumn. What with giant perennial, with French, Shirley, and Iceland Poppies, it is possible to have a grand garden of these flowers alone.—D.

THE FRAXINELLA.

An interesting plant flowering at the present time is the Fraxinella. It grows about 2 feet high, the erect stems forming dense tufts. The flowers are large, pale purple, pencilled with darker lines, and are borne in racemes. There is a white flowered variety. It succeeds best in a light dry soil, in partially shaded borders. Propagated by seeds sown as soon as ripe, or by means of its fleshy roots, which, if cut into pieces in the spring, will strike freely and form good plants much quicker than seedlings. It is a proverbially slow-growing plant in most gardens, though more free in some warm, chalky soils. Its botanical name is Dictamnus Fraxinella. The flowers give off at times on hot days a perceptible flash of flame, contents of glands, which burst in the sunlight. It comes from the Taurian and Caucasian Mountains. T.

The Fraxinella (Dictamnus Fraxinella).

HARD-WOODED PLANTS FROM CUTTINGS.

Greenhouse hard-wooded plants, such as Heaths, Epacrises, Chorozemas, Boronias, and similar subjects may, in most cases, be struck from cuttings during the summer months, although among them are to be found some that require great care in order to ensure success. The best cuttings are young shoots that push forth after flowering, especially if the plants have been cut back; but even then it is better to take shoots of weak growth than stout, succulent ones, which are very liable to decay. As it is also necessary after the cuttings are inserted in the soil to keep them perfectly air-tight for some time, bell-glasses should be used for that purpose, and the size of the pots will, of course, depend upon that of the glasses employed. In preparing the pots for the cuttings, invert a small one over the hole in the bottom of each cutting pot, then fill up with broken crocks to within a short distance, say an inch of the top, as abundant drainage is essential and very little soil is needed for the cuttings. The crocks should be clean, and gradually diminish in size from the bottom to the top; in order that this may be the case it is well to pass them through the sieves of different sizes in the mesh, and then to keep each lot of crocks separate. The top position should be for those that pass readily through a sieve with a $\frac{3}{4}$-inch mesh, but as the dust must be extracted from them one still finer must be used. A space of $\frac{1}{2}$ inch or an inch, according to the size of the cuttings, must be left for the soil, which should consist of two-thirds of finely-sifted peat and one-third of sharp silver sand, the pots being firmly filled with the above to within a little of the top. A thin layer of sand should be added, and the whole slightly watered with a fine-rosed can.

Taking the cuttings.—Where they are not too long, all that is necessary is to strip them off the parent plants, and then remove the bottom leaves to the extent necessary for their insertion; but if too long to be treated in this way the top only of each shoot must be cut off at the required lengths. In removing the leaves, a sharp pair of scissors must in some cases be used, and in others let the top part of the cutting be held firmly, but gently, with the left hand, and let the required leaves be stripped off by the right hand. This method effects a saving of time, but should only be adopted when the leaves come clean away from the bark without tearing or injuring it in any way. If the bark is likely to be injured, then, of course, the scissors must be used to remove them. Before putting in the cuttings, press the bell-glass on the sand slightly in its place. The imprint in the sand will serve as a guide in inserting them, otherwise they may be put in too near the edge, and thus get pressed down by the glass. Put them in in rows, each at a sufficient distance to stand clear of its neighbours, and take care that they are made thoroughly firm, especially at the base. When a potful has been put in, a thorough watering must be given to cause the sand to form a smooth, unbroken surface. This watering may either be done with a fine-rosed watering-pot, or, if the cuttings are so small and slender that the weight of the water alone would cause them to overbalance, the better way is to set the pot, when completed, in a pan of water, not of sufficient depth to float over the surface of the soil in the pot, but still enough to enter by a hole in the bottom, and thus give the whole of the soil a good soaking. After watering leave the glasses off for a little time to dry the foliage of the cuttings, then put them on securely and shade from sunshine. Where there is not a propagating-house for this class of plants the next best place is a cold frame, one or two lights of which may be partitioned off for that purpose, and treated accordingly. The bell-glasses must be removed each morning for a little, wiping all moisture away from them, and a strict watch must be kept at the same time for the least symptoms of decay in the cuttings, on the approach of which a little more air may be given, but not more than is absolutely necessary, as the soil then soon dries and frequent waterings are hurtful. If attended to in this way a fair measure of success may be reasonably anticipated; but, of course, constant care in the matter of shading, watering when required, and drying up superfluous moisture will be necessary until they are rooted. When that happens give air by degrees, and so gradually harden them off; then pot singly in small pots and grow on freely, taking care to stop them when necessary, as the foundation of a good plant is formed when in a young state. B.

Pinks.—Amongst Pinks how pretty is the alpine Dianthus deltoides! This variety has flowers about the size of a sixpence, round, flat, and of a lovely rosy-red hue. There are so many of these pretty little Pinks, however, that it is difficult to name one as better than another. A full representation of every species would make a very interesting collection.

THE KITCHEN GARDEN.

TOMATO NOTES.

I have often felt cause to wonder how much progress in the matter of cropping or general excellence we have of late made in Tomatoes in spite of the many assumed new varieties put on the market. A few days since I was shown in a private garden a low lean-to house of Tomatoes. The plants were growing in a wooden trough, the inside measurement of which was 15 inches by 8 inches, the plants being 15 inches apart in the trough. They had been there several months, had in each case reached the top of the house, about 7 feet, and were not only in robust health, but had been for a long time, and still were, fruiting most abundantly. I had never before seen racemes of fruiting-stems so thickly placed or so branching, many of them carrying from forty to fifty flowers. It was not possible to conceive of a finer variety, more heavy cropper, handsomer fruit, better coloured or more solid. One fruit, 7 inches round its greatest breadth, weighed 8½ ounces—pretty conclusive evidence of its massiveness. When I inquired the name of this Tomato I found it was one put into commerce fully twenty years ago under the name of Heffer's Goliath, a near relative of the old Trophy. The new varieties introduced could not have given better results. It must not be assumed, however, that the variety remains absolutely as first introduced, because Tomatoes are raised from seed yearly. No plants are so readily amenable to improvement as the Tomato, as it is but needful for the grower every year to select one or two of his handsomest fruits, saved from any plant that shows free cropping quality, and in the course of years the original variety, though it be still the same, yet is so improved as to be quite diverse from and much superior to its original form. Heffer's Goliath has been grown in this garden for many years, the gardener saving his own seed, and thus keeping the stock true. Another variety very highly recommended was partly grown in the house early in the season, but the result was so indifferent the plants were pulled down and replaced by the old and tried variety. After all, for first early purposes especially, or indeed for fruit production generally, no plan of culture seems better than rigging up a wooden trough of the nature mentioned, but having an open or trellis bottom, covered with rough turf, using almost exclusively fresh, sweet, turfy loam, putting out the plants into it fairly close together, and training on a lath or wire trellis pretty near the glass. A few houses of the variety referred to, got on early, and fruiting so freely, as in this case, would almost coin money. Not only because the fruits are so heavy, but also because so early and so freely produced. Generally market-growers prefer to put their plants out on the floors of large span houses, but they are in such cases far from the light, and the too abundant root-room induces far too luxuriant foliage. Plants in troughs near the glass have a drier atmosphere, are more easily attended to, and flowers fertilised, and as the fruit is gathered some artificial manure dressing given to the soil helps to replace what has been abstracted, and enables the plants to continue cropping for a long time. D.

Mustard and Cress.—Extra care is necessary in the sowing and treatment of this salad during July, August, and September. The sunny borders should be abandoned, as not only is the salad grown in such a position inferior in quality, but it no sooner arrives at the cutting stage than it commences to run to seed. A north border is the best position, and it always pays to fork in a little good loamy soil on the plot allotted to it. Hand-lights also, even at this advanced date, should where available be used, as heavy rains are apt to dash the grit amongst the salad and completely spoil it. When the seed is sown the tops of the hand-lights should be left on crossways; this, while shielding it from rains, also admits sufficient air to promote a sturdy, juicy growth It is astonishing how long Mustard and Cress last in good condition on a north border.

A good Pea.—Out of a large number of the best Peas I grew last year, and have again grown this year, none suit me so well as Senator. This is a seeded early wrinkled variety, something after the style of Prince of Wales, but more robust, and a heavier cropping kind. It grows staked 3 feet in height, and about 5½ feet under field culture. It is about a week later in cropping than is Gradus or Ameer, both fine first early Marrows, but neither more than one-half so productive as is Senator. The pods are not large, but of good length, curved, and well filled. I do not care for large Peas; they are less desirable for table than are those smaller, and far more freely produced. I venture to think that, sown thinly, a pint of seed will sow a row 100 feet long, and on good soil that Senator will prove to be one of the most profitable Peas in cultivation.—D.

CELERY.

At this season the amateur is planting Celery for winter use, and few crops are more appreciated when well grown. Few vegetables are grown with less trouble if a few simple cultural details are carried out. As regards

Varieties, the one illustrated, Early Rose,

Celery Early Rose. From a photograph sent by Mr. J. C. Tallack, Livermere Park Gardens, Suffolk.

is doubtless one of the best. It is early, not too large, and may be classed as of medium growth, a delicate rose or pale pink in colour, very solid and crisp, with a fine Walnut flavour. It is not inclined to run, and is of special good quality, just the kind for an amateur who wants quality. On the other hand, I may remark, there is no lack of good varieties. The choice is not at all limited, and of late years there have been some excellent additions. I am aware many prefer a white variety—these are equally numerous and good. I think a pink or red Celery superior in flavour, but this may be a matter of taste. I am sure, however, red varieties of Celery are less subject to "running," and if required for exposed places or later use, the coloured kinds are best, but for late use there are distinct types, such as the Standard Bearer and Major Clarke. For early use White Gem is a fine type—a grand amateur's Celery—as it blanches so readily. Another very early and suitable companion to the Rose is Superb White, which is very much like the Rose in every particular except colour, and is one of the best for early use. As regards

Culture.—The time for sowing is past, and planting should be finished as early in July as possible, but for late supplies I have adopted a simple plan of sowing the seed in a large bed very thinly, and planting direct into the trenches. This is a saving of time. Another system of culture not often adopted is that of growing on the flat for late use, not in deep trenches. Of course, huge heads are out of the question, but one can have sound Celery well into May by planting thus. Deep drills are drawn in well-manured land 1 yard apart, and moulding up is deferred till late in October. By that date the tissue of the leaf and stalk is well hardened, and this enables the plant to resist severe weather. I have briefly noted this method, as it is one amateurs could adopt with advantage who have to plant late, and who do not care to make deep trenches. The first method is a simple one saving time and labour. Many growers, gardeners as well as amateurs, think it impossible to over-feed Celery. This is a great mistake, as when the plant is surfeited with food in its early stages it is often left to starve just at the time there is an increased demand upon it. To make my meaning clear I would point out how many growers place large quantities of rank manure under poor weak plants, and instead of a sturdy growth a hollow one results, and a thick, woody base. I venture to assert that had the plants been given the food at a later stage there would be better results. It is far better to feed when plants are growing vigorously than at first, before they can absorb the food given, and then leave them to chance.

Feeding.—It would take much space to go at length into suitable foods. There are many. I will describe simple ones often at everyone's command, and few plants require more moisture than Celery. It is often thought that rains will supply it; but this is not so. The plant, if in active growth, conveys the rainfall to the side of the trench, not the roots, whilst the roots are suffering, and drought is the cause of running, of bad flavour, toughness, and other defects. Again, few plants require more moisture than Celery once growth is active. When more than half grown I have found it advantageous to flood the trenches weekly. When this is done there is no danger of running. Another evil is decay in centre of the plant. This is the cultivator's own fault in nine cases out of ten, and there is a simple remedy—not to mould up too soon. By early moulding-up the growth is checked and decay results. It is often caused by placing too much soil on at one time. I admit by so doing the rows may present a neater appearance, but if half the plants die it is useless. When moulding, place the soil at intervals of, say, two or three weeks, in small quantities; that is, a little and often, not one grand earthing-up, as is often done. By piecemeal moulding the stalk of the plant gets hardened, and is able to battle against cold and snows. When feeding wait until the plants are large enough to absorb the food. Few manures are superior to liquid from animals. To this add a dressing of salt or soot, and there is an efficient fertiliser. On the other hand, beware of too strong doses. Here again, the old saying, "a little, and often," is the best. Sewage in a crude state is not good, and when artificial foods are given take care that plenty of water is given to weaken the food. Guano and fish-manure make the plants grow splendidly when given in small quantities with clean water. There are other foods, but use them at the right moment. W.

Boston Unrivalled Pea.—I am growing this very fine 4-feet Marrow variety for the first time. It was but last year that it was awarded high honours by the Royal Horticultural Society as a main crop variety, but really it is a second early, carrying large pods most abundantly. Those who prefer a 4-feet to a 6-feet Pea will do well to try Boston Unrivalled another year. Of course it is very difficult now to produce distinct features in new Peas, but out of twenty varieties growing together this new one is unusually distinct. Fully a dozen out of the number growing might all be mixed and very few persons be the wiser. So many so-called new Peas are mere reproductions, and it is almost too much to expect anything in the way of variation or improvement now.—D.

Shallots (*W. A. Jones*).—When the first signs of the Shallots were apparent the seed-pods should have been removed, then the roots would have been all right. The seed is useless; much better to grow from bulbs annually.

TREES AND SHRUBS.

A FEW LATE-FLOWERING SHRUBS.

Indigofera Gerardiana is about as distinct and pretty an August-flowering shrub as could well be desired. Generally it is to be seen of neat habit, with long slender branches, and abundantly-produced racemes of rosy-pink flowers. The foliage is of a light green shade, not too thickly borne on the branches, and the flowers are not in the least hidden, but owing to the contrast in colouring between these and the leaves they are very conspicuous. It is a Himalayan shrub, and one that deserves to be extensively cultivated wherever ornamental flowering plants are in request. It will grow well in light peaty soil.

Olearia Haasti (see cut) when seen in bloom in clumps of from half-a-dozen to a dozen plants in each can hardly be surpassed. Here we have it singly and in clumps, one and all being at present studded with white Daisy-like blossoms. So freely are the flowers produced that at a short distance away one is puzzled to account for the sheets of white. No plant is more readily managed than this Olearia, for it grows and flowers with us in almost every conceivable position and soil. Even when out of flower the neat, leathery, evergreen foliage makes it a very handsome plant.

The Bladder Senna (Colutea arborescens).—Every lover of hardy, free-flowering shrubs should include a specimen of this distinct and handsome plant in his collection. It blooms almost unceasingly for several months, and afterwards the large inflated seed-pods of a reddish hue are about as conspicuous as were the yellow Pea-shaped flowers. It does well either as a standard or wall plant, but I fancy that it blooms and produces seed all the more freely where the kindly warmth of a wall or house-side is provided. An open, but sheltered position and in full sunshine will suit it best, and as for soil, heavy loam would not seem to be far amiss.

Spiræa Douglasi cannot be passed unnoticed amongst late summer-flowering shrubs, for it is undoubtedly as ornamental a plant as could be chosen from any list. Then it grows with such freedom, increases so rapidly, and blooms so profusely, that it is just the plant for a wild woodland garden, or where it can be allowed to grow at will. The bright pinky spikes of flowers are very showy, while the neat, upright habit of the shrub renders it of great value for special purposes. There is a form the flowers of which are almost white, and it is very desirable for mixing with the typical plant. Dampish loam and an open and sunny position suit it well.

Rubus odoratus is one of the most ornamental of the Bramble family, forming a rather dense upright bush fully 4 feet high, with numerous stout twiggy stems. Although July is its "hey-day" for flowering, still it is so persistent in that respect, that in August, and even September, a good sprinkling of flowers will be found on a healthy and fully-developed specimen of this Bramble, or Raspberry, as it is called. The sweet-scented leaves are large and showy, being broadly five-lobed and irregularly toothed, while the large circular flowers are of a pleasing purplish-red tinge. It grows well here in the shade of large-growing trees and in dampish clayey loam.

Genista Ætnensis, though seldom seen, is one of the prettiest and most desirable of Brooms. The bright yellow flowers are of great substance and thickly produced, while the whole contour of the plant is very elegant. It is an European shrub, but one that, judging from how seldom it is seen, must be rare. Being of very free growth, and quite hardy in the south of England at least, as well as most ornamental, whether in or out of flower, I may be excused for recommending its more general cultivation. A light and warm soil suits it admirably.

A.

DESFONTAINEA SPINOSA.

When in flower this Chilian shrub is sure to attract attention, particularly among those with but a limited knowledge of plants, as in all particulars save that of blossoms it mimics a small sturdy-growing Holly, and when these features are supplemented by brilliantly-coloured tubular-shaped blooms it proves a puzzle to many. The flowers are drooping, nearly a couple of inches long, and of a thick wax-like texture, their colour being scarlet and yellow, somewhat after the manner of a Blandfordia. This shrub is hardy in many localities, but, on the other hand, it is tender in some districts. It is, however, so attractive in bloom as to well repay the protection of a greenhouse or conservatory where there is any doubt as to its hardiness, for among its other desirable qualities is that of continuing to flower for a lengthened period, as it will often keep up a succession of bloom from July till autumn is well advanced. No special treatment is required, as it will thrive in ordinary potting compost, but prefers a larger amount of loam in the soil than many plants do. When grown in pots and required for flowering under glass, it may be plunged out-of-doors in the spring when all danger from severe frosts is over, and allowed to remain there till the blossoms make their appearance, when the plants may be removed into the greenhouse and wintered in the coolest part thereof, to be plunged outside again in the spring. Though treatment such as this will yield satisfactory results where the plants are not hardy outside, they are never so striking as under more natural conditions, for, as a rule, when planted out-of-doors the foliage is richer tinted than when confined in pots. For furnishing low walls it is also very desirable. Propagation is carried out chiefly by means of cuttings, which are not difficult to root, though, as a rule, they stand some time before they strike. The summer is a good time to take the cuttings, and if then put into pots of sandy soil, and placed in a cold-frame kept close and shaded, they may after a time be given a little heat, which will accelerate the production of roots. This Desfontainea, which is the only member of the genus, is a native of the Andes, from Chili to New Grenada, and was introduced therefrom by William Lobb, who was travelling for Messrs. Veitch. It was a remarkably successful journey, for among other introductions at that time may be mentioned Lapageria rosea, Escallonia macrantha, Embothrium coccineum, and Philesia buxifolia, as well as one more valuable than any of these—viz., Berberis Darwini. The world is now too much ransacked for a collector to acquire such a bevy of good things on a single journey.

T.

New Zealand Daisy-bush (Olearia Haasti).

GLADIOLUS CULTURE.

It is strange that Gladiolus culture should not be more general. Most of the old gardeners gave a portion of a sunny border to Gladioli, a good batch of the old brenchleyensis being included. These were grown in rows, a stout stake being driven in at each end, and cross-sticks taken from one to the other for tying the stems to, the plants being shaded with canvas in hot weather. Many complain that the new hybrids do not last more than a year or two, and then gradually dwindle away, but for a mere nominal cost a fresh stock of bulbs may be obtained from the growers, and the new named varieties are all very handsome. It is useless attempting to produce good spikes by planting the bulbs in unprepared soil and subjecting the plants to rough-and-ready treatment. They require a nice open loamy compost, with a free addition of leaf-mould and coarse sand, and if a little sand is placed round each bulb at planting-time roots will be more quickly and freely emitted. I have known gardeners residing in cold districts to start the bulbs in small pots and plant out when growth was 6 inches high. This is a good plan in gardens infested with slugs, as frequently these pests play sad havoc with the tender shoots when just through the ground. Their attacks may be prevented by placing small pots over the shoots at eventide, removing them the following morning. The end of April is a good time for planting the bulbs, and if in beds the best way of doing this is in drills 3 inches or 4 inches in depth, pressing the soil gently around the bulbs with the hand. Gladioli will do well planted singly in sunny pleasure-ground and shrubbery borders, but in this case a portion of the old soil should be taken out and a little prepared compost put in. For a display in such positions, nothing surpasses the brilliant old brenchleyensis. The vigour of the plants and strength and colour of the bloom-spikes are much increased by application of liquid-manure to the roots several times during the season; a good mulch of short manure is also beneficial. The plants must be secured to neat sticks at an early date, as even before the spikes appear high winds often break them down. At the beginning of November the bulbs must be lifted, dried, and stored away in a cool place free from frost, the small offsets being saved for planting by themselves for flowering the third year.

J.

Corylus Avellana aurea is a splendid addition to our hardy coloured deciduous shrubs. The purple Hazel when growing freely (and not starved, as is too often the case) is a very fine shrub, and a golden form should be equally valuable. The two varieties grouped in one bed would make a very effective mass of colour all through the summer months. They should be hard pruned each year and well manured; the foliage then would be large and well coloured. Standards and half-standards of them would also be very useful to plant on lawns or in the shrubbery provided they have as much sun as it is possible to give them.

MIXED BORDERS.

Borders which contain a mixed collection of hardy plants too often present a confused appearance, from the practice being usually adopted of singling the plants out too much, and constantly curtailing their size. If more freedom were allowed and a bolder arrangement chosen and carried out, not paying too particular attention to heights, much better and more pleasing results would be produced. By forming colonies, for instance, of different families which contain several desirable species or varieties, a group of six or more species of Campanula and the same of the best Asters, Ranunculus, Œnotheras, will always look better than the same number scattered over the border. Lilies and Narcissi may be planted together, as both will flourish under the same treatment, and the Narcissi flowering early will be replaced by the Lilies later in the season. Again, species of similar habit and character may be arranged together, such as the dwarf Rudbeckias, Coreopsis, Heleniums, or Eryngiums, Echinops, etc., not to mention Spiræas, Saxifrages, Iris, and others.

Opinions vary as to the best time for dividing and transplanting, some preferring spring, others autumn. If a general overhauling is desired I should prefer doing it in October, as the soil of the borders at that time is generally good, and the work is not so liable to be interrupted by adverse conditions of the weather as it is in spring. But when performing it in spring I should advise, first of all, lifting and either potting or laying in in some snug place all the more choice and tender things, to be divided and replanted in spring. Speaking generally, I think the spring is the best for dividing those with roots of a soft and fleshy nature just as the growth is commencing to push. Flame-flowers (Kniphofias), Day Lilies, Plantain Lilies (Funkias), Hellebores, and Japanese Anemones will represent this class; whilst for bulbous plants, as Lilies, Narcissi, etc., the autumn is a more suitable time, and those whose roots are of a fibrous character can be treated at any time during winter.

Time and care should be given to the work if the after well-being of the plant is considered. It is not sufficient to make a hole with the trowel and stick in the plants indiscriminately. The roots must be spread out, adding a little fresh soil of a sandy nature for those things which require it. In dividing a clump it should be done thoroughly, pulling it apart, with the help of a hand-fork, into several pieces, which may be planted pretty close together to form a good-sized clump, in preference to chopping it in two with a spade and replanting the halves. Such plants generally fail to re-establish themselves quickly, and are invariably burnt up by the first spell of dry weather. A.

Lilium pardalinum. — This handsome species is now in flower in the southern counties, the stems ranging from 7 feet to 9 feet high, and even more than this where the bulbs are in a moist peat-bed and well established. With shade and continuous root moisture this is indeed a fine Lily, and the tall orange flowers, which are freely spotted with dark spots, make a telling display. This is a Lily that any may grow.

GARDENING NOTES.

Sea-sand.—I got half a truck-load by rail, having heard that it was very useful for gardening. On arrival I put the whole supply to soak in tubs of fresh water, stirring it frequently. I changed the water continually, thus removing any salt, and rubbed it with the hands on each occasion; then I dried it in the sun, and sifted it through a metal sieve. I found the sand suitable for any purpose, and that insects did not like it.

Violets and Pansies.—I grew the hardy Russian Violets under a high north wall, on a deep border of leaf-mould and sand, where they grew like weeds and flowered very freely, the large blue flowers often peeping above the snow. The beds became so crowded that every second season after blooming I made a new plantation, giving away or throwing away hundreds of runners. The Pansies I raised from seed bought from an advertiser at Southampton. It was the most varied collection I ever saw. Large flowers from snow-white to black variety, in all shades of colour, with Magpie and Rob Roy, the striped variety in gay hues, and in the half-shady borders of my cool climate the flowers lasted very long. Florists who had heard of them came to admire and get cuttings.

Lilium candidum.—I have been much surprised by the difficulties attending the culture of this favourite hardy species. Eighteen years ago I occupied a garden only a few miles from hence, the subsoil a stiff clay, the surface a shallow loam. These Lilies attained their largest proportions, having been undisturbed for twelve years (as I was informed by the gardener), and the tall, thick stems, densely covered with beautiful blooms, amply testified to their vigour. The stout clumps of foliage on the snow in those memorable winters of '79-'80 were cheerful signs of their hardiness. Here the many clusters of plump bulbs have produced no leaves, the earth consisting of a deep, stony sand, a "very hungry soil," as it is called.

American Land Cress.—This very hardy plant has the flavour and appearance of Watercress, only its flowers are yellow and not white like the latter. I have gathered a daily supply when the snow lay deep on the garden. Sow thickly in early summer along the foot of the north wall in deep, rich soil, and keep the bed very damp. This has now become quite a weed with me and sown itself wherever the wind has carried the seeds, which ripen well, and I always collect a good supply in the autumn.

Crinum Moorei.—This beautiful species is now flowering outside for the second time in this season in a tub, and the equally attractive C. Powelli, lately taken from the cold-frame, judging by its luxuriant foliage, will also do so. C. longifolium planted under a west wall last autumn is now growing rapidly.

Mackaya bella.—After flowering this was pruned and put outside where it is making new shoots; any bit of ripe wood strikes well.

Streptosolen Jamesoni is now in full beauty, and still in the house. After flowering is over it will be put outside and closely pruned. Cuttings strike rapidly in a pan of sandy soil kept very moist on a stage of the greenhouse.

Lilium longiflorum is in great beauty, a pot or two in a basket of Ferns on a corner table of the entrance hall, making an attractive ornament, and it will be replaced by Campanula fragilis, both blue and white. The specimen

Heliotrope-tree, on the back wall of greenhouse, cut into very closely in the spring, has lately overgrown so many neighbours that the pruning scissors have been twice used to keep the branches within bounds. I have reduced its height to 9 feet by 5 feet, and struck many cuttings on bottom-heat. For weeks past the show of bloom has been very great.

A mixed border and Grass walk.

Arum Lilies (Callas). — Since these were taken from their pots and planted in a deep pit outside they are not only making leaves but fine spathes, so that from last October to the present date they have yielded a good supply of cut flowers. The pit is in a sheltered locality, close to a hedge, the soil stable-manure and broken bones, the excavation before filling in 3 feet deep, and the plants are put in so that their crowns are about a foot below the level. Three or four times a week soap and water are given liberally, or liquid-manure.

Calla Rehmanni —Last season my two roots sent me from South Africa did not make much foliage. When they died off I put away the 10-inch pot undisturbed through the winter, and on seeing a tiny shoot in the spring I put on a top-dressing of leaf-mould and watered the soil liberally to the present date, with the result of producing a dense, tall clump of bright green leaves. The sender told me to give the plant all the bright sunshine I could obtain in the greenhouse, as on this depends the roseate hue of the spathes. It is from the Transvaal.

Littonia modesta. — This pretty climbing plant in 8-inch pot is now making rapid growth in a sunny corner of the greenhouse.

Oxalis Valdiviana, with its numerous heads of brilliant yellow flowers, is now beautifying the borders. I raised it from seed under glass, but it is properly tuberous, and will supply an easier mode of growth in future.

Dimorphotheca Ecklonis. — Seed of this pretty African (Calendula sp.), sent me by a friend, germinated well in a pan put under glass in bottom-heat, and should flower in autumn.

Gerbera Jamesoni from seed is growing well, but slowly, in pots outside. The stout little plants brought me with so much care from South Africa all gradually perished.

Erigeron multiradiatus is growing well outside, and so is Inula grandiflora; this latter has very spreading fleshy roots, and requires to be carefully transplanted.

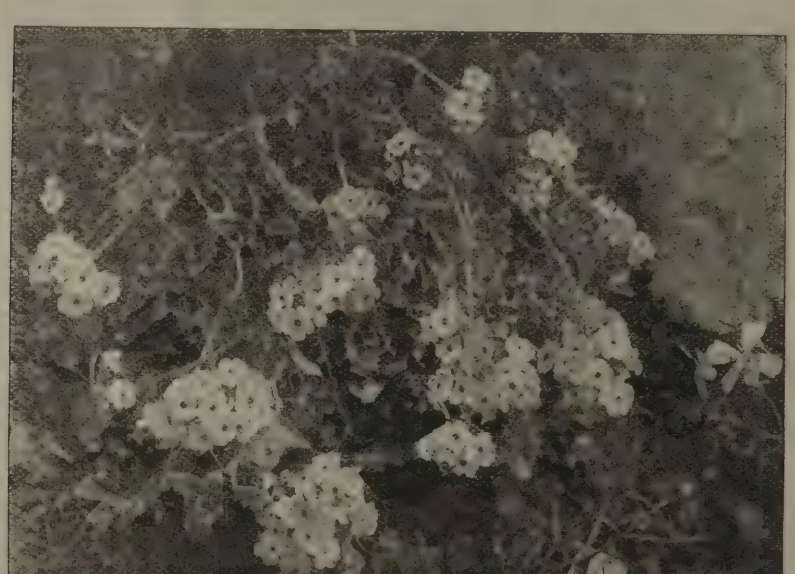
Strawberry crop.—Having taken much trouble in preservative precautions my beds in

rows of several kinds look promising, in spite of a drought, only occasionally broken by meagre showers. Twice a week I have watered the roots with soap and water, and I have mulched extensively with lawn-mowings. I have two rows of late sorts without any blossom yet, and they are the safest, as they are sure to get some heavy rain ere long and a higher temperature.

W. H. L.

ANDROSACE LANUGINOSA AND ITS VARIETIES.

As a rule, the members of the genus Androsace are not among the easiest plants to grow in English gardens, and particularly is this true of all those having dense woolly tufts of leaves. But such as these vary very considerably in their behaviour even in British gardens, and are certainly much more difficult to keep in permanent good health when grown in or near to large towns and smoky localities. Far away in the country—especially in the hilly portions thereof with a clearer and purer air—many of the species are more easily managed, and where these plants are successfully grown they are among the most charming of all the alpines from high mountain districts. The varieties of this little group, together with A. sarmentosa, are perhaps the most frequently seen in cultivation, which seems a sort of proof also that they are among the easiest to manage. Both kinds are



Androsace lanuginosa (Leichtlin's variety).

easily and abundantly increased, the former from cuttings and seeds, and the latter from the numerous offsets that are produced by large examples. These offsets are sent forth on slender, tendril-like runners, and tiny rosettes are formed at the extremity of each. By pegging these to the soil, or by laying a stone upon them, roots quickly push away, and then the rosettes are rapidly formed. In the case of lanuginosa and its varieties—of which there are at least two—the cuttings have to be made of the long trailing stems, and where the cuttings are not required for increasing the stock, I incline to the opinion that the old plants break away more strongly when they receive an annual or, at least, biennial pruning. Where one or two good plants exist, a stock may soon be raised from the cuttings. These should be inserted in very sandy soil under hand-lights in the early autumn, and allowed to remain till signs of returning activity appear in spring, when they may be planted freely in favourable positions on the rock garden. The varieties of this little group are specially suited to the rock garden by their trailing habit of growth, and seen in quantity are always effective. So far as soil is concerned, I have found them most vigorous in a good depth of rough fibrous loam, made very sandy, and to which have been added charcoal nuts and small pieces of sandstone. Where peat is plentiful a mixture of this, with equal parts of the loam, is very good. In their growing season the plants are benefited by free supplies of moisture at the root, and if such be forthcoming a free, open, and sunny spot on the rockwork will suit them well. When planting them select a good-sized pocket at about 2 feet or 3 feet high, and plant the rooted cuttings over a space of 2 feet. If such cannot be found, a capital effect may be obtained by covering a rocky mound with the young plants so that they may furnish it with growth. The latter will be best accomplished by inserting the young plants all over the mound at about 6 inches apart. Established in good soil in such a position these plants would be very charming indeed when in bloom, and as the flowering season continues for weeks they are certainly worth a good deal of care as compared with those plants whose flowering is but a matter of a few hours. The typical species,

A. lanuginosa, is the one most frequently seen. It is a beautiful species with spreading trailing stems, that are clothed with woolly silken leaves. The flowers are of a delicate rose-pink, with small yellow eye, and are freely produced in umbellate heads for a long period.

A. l. oculata is really a white form of the preceding, but it is rendered doubly conspicuous by its large deep pink-coloured eye. In all other respects it is identical with the type. This is certainly one of the most charming of all easily-grown rock-plants, and one that should be in all collections.

A. l. Leichtlini is the latest addition to this beautiful group, and, as may be gathered from the illustration, one of the most exquisite of all. In point of colour this lovely plant may be best described as an advance upon the type, the flowers being of larger size and the colour more intense. Of its real worth there will be no two opinions, as the illustration clearly shows a much-improved form of this free-flowering little race. Where seeds can be secured these should always be sown and tried, for it is quite possible to still vastly improve these beautiful plants.

J.

Rodgersia podophylla.—This handsome Japanese plant is worthy of note for the fine effect produced by its handsome and distinct foliage. In these respects the plant is of exceptional value, especially so for its adaptability for association with fine-foliaged plants in the rock garden or other positions. This fine plant is best suited, perhaps, for a moist peaty soil, but more essential than soil for its free and full development are shade and moisture. Given all these the plant attains fine proportions. Being perfectly hardy should render it the more valuable in the garden, for we are not overdone with such bold and telling subjects as this.

THE SUPPLY OF CUT FLOWERS.

With something over 100 vases, big and little, to fill, and the supply to come mainly from outside, it is hardly necessary to say that the planting of different things to secure a succession, and the selection to meet the several ordinary and special things for which the flowers are required, is not the least important item in flower garden work. The selection of different things turns principally on using flowers that have a comparatively short life in a cut state for purposes in which a display for the time and not the desirability of avoiding early replenishment is the main consideration. Such things as single Pæonies and the different varieties of Poppies may, for instance, be used with advantage in the decoration of the table; they stand very well for the few hours required in any work of this kind. Just on the same principle flowers that do not last long out-of-doors may be the first cut when required in quantity; the borders are necessarily kept rather bare and one is anxious to preserve the flowers as long as possible. It is difficult to imagine how such a supply could have been maintained in those bygone times when the formal garden was the first consideration. A series of herbaceous beds or borders from which one can cut a plentiful supply is indeed a great boon. Next to the fact of having such borders undoubtedly comes the desirability of so planting them that a thoroughly good succession may be secured, and we have oftentimes to give up the wish to plant any special favourites too largely when the thought comes that an excess of any one thing is only produced at the expense of, perhaps, more useful subjects. One of the earliest flowers of any size is probably the Tenby Daffodil, and one of the latest is Aster grandiflorus, the one early in February, given a favourable time, the other flowering at the beginning of December if the frost holds off. In connection with many new varieties of hardy plants it was lately noted that an immense improvement had been effected in the substance of petal, rendering them so much more acceptable in a cut state, and the same new varieties coming in, as they do, at different times are equally as serviceable in extending the season as a whole as for the extra time they last individually. Again, there are often special demands on the flower garden at some particular season of the year, and in all cases where the time is known measures have to be taken to meet the extra demand. For the harvest festival, for instance, Constance, Snowflake, Gloriosa, and Crawley Gem Dahlias and white Comet Aster are in great request, and as such festivals happen, as a rule, towards the end of September, a batch of the Aster should be put out later than usual in order to get the flowers at this particular time. Nothing much in the way of white, to say nothing of scarlet, is available on the herbaceous border at that time, except the late summer-flowering Chrysanthemums. So far as the special requirements of places are concerned in the way of vases, it may be noted that a taste for taller vases seems to be growing, and that flowers to fill such vases have to be provided. Good bold flowers, even if they are common, are much better than using dwarf formal stuff. Pæonies, Irises, and Delphiniums are early big flowers. Foxgloves, Lilies, and Sisyrinchiums are for early summer, and later will come Galtonia and Montbretias, with perennial Sunflowers and Starworts.

R.

The crimson Rose Campion.—In the race for popularity amongst hardy perennials some good things get to be overlooked. Amongst these is the beautiful Rose Campion. An even more attractive variety, really most beautiful in the mass, is Agrostemma hybrida. This has large, rich, deep crimson flowers and makes a brilliant body of colour. Once plants of these Campions are established they will remain objects of beauty for many years.—D.

A good Meadow Sweet.—Really a first-rate hardy herbaceous Spiræa is the double white filipendula, the cluster of bloom being carried to a height of 2 feet, and is for that reason excellent for cutting. This variety is worthy a place in all hardy plant borders.

Linaria dalmatica.—Those who like to have tall hardy plants that carry very fine, effective spikes of bloom for cutting should get this Giant Toad-flax. It is a huge reproduction of the common wild Toadflax, but grows 4 feet in height. Spikes cut 2 feet in length look very attractive in boxes. The variety is easily raised from seed sown in April.—D.

FLOWER GARDEN NOTES.

Carnations.—A reminder to those just about starting the cultivation of Carnations is to layer early and carefully, choosing the best Grass obtainable and not to neglect daily attention in the way of watering, if the weather keep hot and dry, until the points of the Grass indicate that the layer is beginning to shift for itself and the check given by the partial severance is at an end. If a batch is wanted for pot-work, note must be taken of the quantity required and an additional number put down, choosing the stoutest, healthiest Grass and giving the preference to free-flowering sorts of dwarf, sturdy habit, like, for instance, the old dwarf crimson Clove. I was reluctantly compelled to discard this some few years ago owing to the fact that the foliage was practically destroyed by spot (it would be covered with the disease when varieties on either side were quite free), but now that the mixture has proved efficacious in the case of Malmaisons, I hope once more to work up a batch of the old favourite. Although several ingredients are responsible for the building up of the above mixture, I take it the sulphate of copper is the real destroyer, and would do the work alone if used with discretion. Where no layers are required from Carnation beds, and it is determined to run them on for another year, the plants can be overhauled as soon as they are out of flower, and all but a few of the strongest shoots removed. The beds can then be touched over with a small fork, loosening them to the depth of 1 inch, and when this is done a layer of spent Mushroom or peat-moss-manure can be put on and the shoots pegged down in several directions to cover the beds fairly well. The drawbacks to the system are smaller flowers than are obtainable from one-year-old plants and a little difficulty in staking, but if a mass of flower is required, such beds will furnish a grand display. Layering should be begun soon now.

Tufted Pansies.—Propagation of these will commence in a few days, early propagation meaning a sturdy, bushy plant for turning out by the end of September. White Swan, Duchess of Sutherland, William Niel, Mrs. Bellamy, Archie Grant, with Ardwell Gem and Bullion among the primrose and yellows, have again been among the best, not that others have not flowered equally well, but in a season like the present all sorts other than selfs have run out to an extent that renders them practically unrecognisable, and their worth, except for mixed beds, is proportionately lessened. Given a hot, drying sun, it is a good plan to take a small bowl or jar of water, and if the cuttings are tossed in this and then transferred to the ground directly after they have their slight trimming, there is no flagging and consequently no check, or rather no avoidable check. They want shading for a time if the weather continues bright; a roll of tiffany will answer the purpose admirably. Soil from old cutting-pots and boxes to which a little leaf-mould and sand has been added is a good compost, and if it can rest on a firm bottom so much the better; the plants can be lifted more readily and transferred to permanent quarters more successfully if the roots are fairly well under control and not diving down deeply into light soil. Any sorts from which as yet no cuttings are obtainable will get an extra soaking of water, and if too late for cuttings they will be divided presently into as many little plants as may be required.

Antirrhinums.—Writing of Tufted Pansies brings Antirrhinums to memory, from the fact that in future bedding operations they are likely to be more frequently associated, a little experiment in that direction during the current season having been a decided success, and the homely Snapdragon will take the place of Begonias, the latter flower, except in damp seasons, not doing kindly out-of-doors with us. A selection of pronounced colours in white, scarlet, crimson, yellow, and primrose is easily procurable from a batch of good seedlings. Selections as to height must be made as required, as the seedlings will vary considerably in this respect. Whether the relative heights give just about the right effect combined with the marked contrast in habit, the colours blend well together, or that, being both hardy subjects, the association has a natural look, or something of all three, I know not; certain it is that a combination of Antirrhinums and Tufted Pansies, carefully planted, makes a very charming bed. Cuttings of the selected colours may be taken any time towards the end of August and inserted in boxes, using a light sandy compost. If sufficient boxes are to hand, the cuttings can have a fair amount of room, enough that is to allow for their development into nice bushy little plants, so that they may be transferred direct to the flower garden without the necessity for boxing off preparatory to the final planting. E. B.

ORCHIDS.

VANDAS.

The genus Vanda has a wide distribution in the East Indies. Such kinds as V. tricolor, V. suavis, and many others are beautiful even when not in flower, whilst they do not require so much heat in the winter as used to be imagined. I have had a large mixed collection of Vandas and Aërides flower well after being kept in a night temperature of 60 degs., which used to rise 5 degs. or 8 degs. in the daytime. In the summer-time the glass may run up to 80 degs. or 85 degs. with sun-heat, shading lightly during the very warmest part of the day, giving plenty of air, but no draughts, and keeping the atmosphere duly supplied with moisture. Treated in this manner, Vandas are easily managed. Vandas must have exceptional drainage, and upon this the plants should stand, having the pots filled in with good clean and living Sphagnum. In the spring-time this should be looked over, and any portion decayed or not in a fresh, sweet condition removed, replacing it with fresh. Do not fumigate Vandas, as I have observed in them a tendency to cast their lower leaves after it.

A group of Vandas.

V. Amesiana is a free-flowering plant of small growth, native of the Southern Shan States. It grows on rocks and on trees, but the latter plants I have observed appear to be the better nourished, and these are the plants which appear to carry the most leaves. It makes strong, stout roots in great abundance. The leaves are each 1 foot in length and light green in colour; scape erect, many-flowered; the sepals and petals white, more or less flushed with rose; the lip rich rosy-purple in the first plant that was flowered, but usually paler. It blooms in the winter months.

V. cœrulea.—This is the finest of the genus. The scape bears seven to fourteen flowers, each about 4 inches across, the sepals and petals being soft blue, netted with a deeper blue, the small lip being of an intense deep bright blue. This blooms during the autumn, lasting a long time in perfection. It requires an abundance of air and water during the growing season.

V. cœrulescens is a small-growing kind bearing smaller flowers than V. cœrulea; the blooms each measure from 1 inch to 1½ inches across, the colour being about the same as in V. cœrulea. There are several named varieties of the plant which differ in colour. It usually flowers early in the season. Native of Burmah.

V. insignis.—This fine species was introduced in 1866. Although the name was common enough in our gardens years before the living plant was seen, the name was usurped by a form of V. tricolor. Though having the growth somewhat of V. tricolor, its flowers are very distinct; the sepals and petals soft brown with darker spots; the lip is white at the base, expanding into a concave limb, which is rosy-purple. It flowers during the end of summer and beginning of autumn. Native of the Moluccas.

V. Kimballiana is a fine species introduced from the Shan States. It seems to be thoroughly distinct from every other Vanda yet known; the leaves are narrow and deep green, scape nodding, bearing sometimes twelve flowers. The sepals and petals are pure white, the lateral sepals much the larger, falcate. The lip is upwards of an inch across, rich bright glowing purple; it blooms in the autumn.

V. Parishi is a stout-growing variety, having broad, short fleshy leaves; scape erect, bearing a raceme of showy flowers, which are each upwards of 2 inches across; sepals and petals greenish-yellow, freely spotted with brown; lip magenta-purple, paler at the margins. This blooms in the summer months and comes from Burmah.

V. Roxburghi.—This plant first flowered about seventy years ago, and though looked down upon by many, is a very beautiful species. It is a somewhat small-growing and stiff plant of a very deep green, the spike being erect, bearing less than a dozen flowers, which are each about 2 inches across; the sepals and petals china-white on the outside, the face greenish, netted with brown, and the lip bright blue with a white base. It blooms in the spring months.

V. Sanderiana is a noble kind. Each flower is between 4 inches and 5 inches across; the upper sepal and the petals are rosy-pink, the lateral ones very much larger, tawny-yellow, netted with crimson; lip small, reddish-purple. It blooms during the autumn months.

V. teres is widely distributed through Northern India, about Sylhet, Khasia, and Assam. This is not, like the great majority of the Vandas, a handsome plant when out of bloom.

The leaves are some 4 inches or 5 inches long, the spike of bloom issuing from the stem opposite to the leaves and bearing from three to seven flowers, each of which is from 3 inches to 4 inches across, the broad sepals and petals being of a deep rose colour with a lighter border, the lip rose-coloured, streaked with darker lines, the disc and the side lobes more or less yellow. In the variety candida the sepals and petals are pure white, the lip also white, faintly tinged with rose, the interior of the side lobes pale yellow. Vanda teres enjoys plenty of heat and moisture during the growing season. During the winter, its resting season, it may be kept cooler and drier.

The flowers of most of the species and varieties named above, in addition to being very beautiful, are also sweet scented. H.

Peristeria elata.—This, the well-known Dove Orchid, is now in flower, and, owing to the length of the spikes on strong plants, will continue in bloom over a long period. The flowers are entirely white, the lip and column forming a striking and beautiful resemblance to a dove. It is an Orchid that must be very liberally treated to get good results, and the compost may be similar to that used for the stronger-growing Phaiuses or Cymbidiums. During the season of growth the plants must be freely watered and the foliage kept clean by sponging or syringing, but after the growth is complete they will need but little moisture. It is an old Orchid in cultivation, having been introduced from Panama as far back as 1826, and the heat of the Cattleya-house is most congenial to its growth.

Promenæa stapelioides.—This is a pretty little plant doing well in quite a cool-house suspended from the roof in wood baskets or small pans. The pseudo-bulbs grow closely together, and from the base of each of these a single-flowered spike issues horizontally. The sepals and petals are yellowish, with broad stripes of purple, and the lip is very similar in colour. An ordinary mixture of compost, and not too much of it, suits this plant well, anything of a close or heavy nature being sure to bring about disaster. It is a native of the Organ Mountains, of Brazil, and was introduced in 1830.

Odontoglossum mirandum.—This is a very distinct Odontoglot and worthy of greater care than many that are more popular. The blossoms, as large as a medium-sized O. crispum, and of a reddish-chocolate or plum colour, margined with yellow, are produced on long arching scapes. Quite cool treatment suits it best, and it should be grown in as small pots as possible, and a thin layer of compost. It should be well watered while making its growth, and in winter or summer must never be really dry for any length of time. Introduced from New Grenada about 1880, it has never become really popular and would make a useful addition to many collections.

Odontoglossum maculatum.—Some flowers of this old species that opened on May 6 are now (July 8) still open and fairly fresh, though, as may be imagined, a little wanting in colour after being open nearly ten weeks. Few others in the genus would carry their flowers so long without injury, and few are more free or constant in blooming. Some of the varieties are bright and very effective in colour, while others are rather dull; but all are worth growing. The plant is cheap and of the simplest culture, thriving in a cool-house in peat and Moss. It comes from Mexico, and was introduced in 1838.

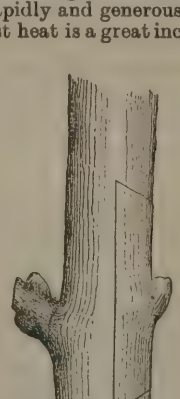
Rhododendrons in the open.—I was much interested in the article on Rhododendrons in GARDENING, June 26, p. 236. Argenteum, Falconeri, Aucklandi, cinnabarinum, Dalhousi, and all those delicate ones I have seen flowering beautifully in the open air in Cornwall, and out-of-doors for several winters.—J. B. ROGERS.

A pretty Bellflower.—This is Campanula garganica hirsuta. It is very dwarf, spreading, free, and has rather downy leafage. The flowers, five-petalled, are rather star than bell-shaped, centres white, and tips pale blue. Lovers of Bellflowers should have this charming variety in their collections.—D.

Pretty rock plants.—It is so much the custom to show at exhibitions spikes or trusses of flowers of tall border plants because they make the finest display that myriads of wonderfully pretty dwarf-bordered rock plants are seldom seen; yet how charming is a good tuft of the pretty magenta-flowered Thymus Serpyllum, although it be but a Thyme after all. Then there is the double-flowered form of Genista tinctoria, growing 12 inches in height but a dense spreading habit, blooms profusely, the flowering-spikes of rich yellow being about 4 inches long. Another capital spreading and covering plant is Crucianella stylosa, colour pale red, trusses of bloom borne in wondrous profusion, are rounded and almost feathery. This is just the plant to cover up bare spaces effectually.—D.

PROPAGATING VINES FROM EYES.

CUT out the eye of a ripened cane, as shown in the cut. Insert in a sandy compost, keep moist, close, and in a temperature of 65 degs. to 85 degs. When new growth commences, pot on and grow as rapidly and generously as possible. A strong, moist heat is a great incentive to rapid



Vine eyes.

progress. Vines can be propagated at any time from a ripened eye of the current season's growth.

GLOWWORMS.

AMONG our best known and most interesting insects is the glowworm (Lampyris noctiluca), which has attracted the attention of naturalists from quite early times, and never fails now to give pleasure to those who meet with them, as a prettier sight can hardly be seen than a number of these insects shining in the Grass at the road-side on a fine summer evening. Of course, these illuminations will not vie with the splendour of those lately seen in London and elsewhere; but I venture to think that more real pleasure is to be had by walking down a cool country lane where these insects abound, on a fine evening, than in pushing one's way through densely-crowded streets to see the "Diamond Jubilee" illuminations on a hot evening, magnificent as they were. One of the most curious points about these insects is that the two sexes are so very unlike one another; the male is not otherwise than a very ordinary-looking beetle, whereas the female has no resemblance to a beetle in any way, but would be taken by most persons to be a grub; in fact, she is so much like the grub from which she is produced, that she might easily be mistaken for one, but there are certain well marked differences which I need hardly now describe. The male is about ¾ inch in length, and of a very dark brown or nearly black colour, with the edges of its thorax somewhat paler, the wing-cases are long and narrow, the head is hidden beneath the thorax or fore-body. The female is rather longer than the male, and is of the same colour. She has no vestiges of wings, the body is long and narrow, with well-defined joints. This insect is more or less luminous in all its stages of existence, the eggs, grubs, chrysalides, and the perfect insect, both males and females, emitting a certain amount of light; it is the female, however, that is by far the most luminous; as to the use of the light, that still remains a mystery. It used to be supposed that it was of assistance to the males in finding the females; but if that were the only reason, then why should the eggs and the grubs be luminous? Both sexes appear to have the power of interrupting the light at their will. It is produced on the under-side of the last joints of the body; the phosphorescent organs consist of masses of round cells, filled with a yellow sulphur-like substance placed within the body, but which are covered with only a very thin skin, so that the light shines through easily. It seems probable that the light is dependent on being fanned by the breathing apparatus of the insect. Glowworms are of no economic importance, as they are not common enough to do any harm to our crops, even if they were so disposed, or to be of much use, though the grubs and females feed on small snails. The Lampyridæ, the family to which the glowworm belongs, has several members which are luminous, but which are not natives of this country unfortunately, as they are the well-known fire-flies. Both sexes have wings, and fly about freely in the evening. There are also several beetles, members of the family Elateridæ, which are also known as fire-flies. It is a most charming sight to see these insects of a fine summer's evening flying about in all directions by hundreds. Besides beetles there are a certain number of other insects which are luminous, and also one of the centipedes, but the number of creatures which live in the sea and emit light are countless when compared to those on land.

G. S. S.

GARDEN PESTS.

Fuchsias and Evening Primroses (*G. B. S.*).—The leaves sent do not, as far as I can see, show any signs of being attacked by insects; but they are infested by a fungus, probably a species of Phyllosticta. Pick off and burn any of the leaves that are of no longer any use to the plant, and then wash or spray the plants with Bordeaux mixture, which may be made as follows: Dissolve 1½ lb. of copper sulphate in a little warm water, slake 1 lb. of freshly burnt lime, and mix it with water till it is of about the thickness of cream, then strain through coarse canvas into the copper solution, and add 11 gallons of water; wash the plants again in the course of a week.—G. S. S.

Gooseberry leaves (*W. W. L.*).—The leaves of your Gooseberries are attacked by a fungus (Septoria ribis). Collect the affected leaves and burn them. Spray the bushes with the following mixture: 1 oz. of carbonate of copper, made into a paste with a little water, should be dissolved in ammonia, say 1 pint; if that is not enough and there is still some not dissolved, add more until all is dissolved, then add 9 gallons of water. Next year spray with this mixture as soon as the leaves are fully expanded, again in a week's time.—G. S. S.

Strawberries nibbled (*A. J. R., Lincoln*).—Your Strawberries are attacked by one of the Carabidæ or ground-beetles (Harpalus ruficornis). These beetles are, as a rule, carnivorous, and are of much use in gardens, destroying grubs and other small insects. Their grubs are also useful in the same manner; but when the Strawberry season comes round they seem to leave their natural food and feed on Strawberries. As to destroying them, that is not an easy matter, as they are so active that I do not think any insecticide would harm them. Raising the fruit from the ground would probably prevent the beetles getting at it, and no straw or lawn mowings should be laid round the plants, as they afford the insects shelter. Pieces of raw meat laid about will attract large numbers of them. It is best to cover the meat with a piece of sacking, as it affords a shelter for the beetles. —G. S. S.

Insecticide mixture. — I am much obliged for the information you gave me about the grubs in Pine-tree. I have already destroyed a good many of the grubs which I found in the points, and I shall syringe as you recommend as soon as the moths appear. Would you kindly tell me the proportion of soft-soap and paraffin-oil I should use per one gallon of water, and how often I may with safety syringe? The tree is on my lawn. Will the paraffin-oil destroy or injure the Grass?—A. M. GALINDO.

*** Use the following mixture: A small wineglassful of paraffin-oil, 3 oz. of soft-soap to every

gallon of water. Mix the oil and soap together in a little boiling water thoroughly, then add the rest of the water and keep well mixed. I do not think this will injure the Grass; but you might use, instead of the paraffin, the extract from 1 oz. of Quassia-chips per gallon. If the weather be fine once a week would be often enough, but after a heavy rain, which would wash it all off, it should be renewed.—G. S. S.

Young Holly shoots getting glued together (*Sherwood*).—From what you say I imagine your Hollies are attacked by the caterpillars of one of the small moths belonging to the Tortricidæ. If you can make any insecticide reach them, which I very much doubt, the following mixture would be useful: Three oz. of soft-soap, mixed in a little boiling water, with a wineglassful of paraffin-oil, and added to 1 gallon of water and kept very well mixed. —G. S. S.

ROSES.

MONTHLY ROSES.

This appellation is generally conceded to the China or Bengal Roses, although it could honestly be given to the Tea-scented class. However, it is with the China Roses that I wish to deal in this short article. It is becoming more and more difficult each year to determine the difference between the China and the Tea-scented Roses. The common blush China Rose is decidedly distinct from the Tea Rose, but such varieties as Mme. Laurette Messimy approach very nearly, if not quite, the Tea-scented class. The flowers of the China Roses are generally small and produced in great abundance, mostly in corymbs, but not always. They are unequalled for masses, for edging to carriage drives or Rose beds, and some varieties, such as the common and Fabvier, are exceedingly useful to plant as semi-climbers in front of greenhouses or low walls. Pillars of the vigorous kinds in sheltered spots would be an unfailing attraction all the summer, and, indeed, almost up to Christmas Day. I am surprised these beautiful Roses are not more frequently employed in our public parks and gardens. Beds of them containing two or three hundred plants would make a grand effect if planted on raised mounds or slopes. I would certainly recommend that the plants be on their own roots; this would ensure a number of sucker-like shoots constantly springing up crowned with their gorgeous blossoms. The soil they revel in is a rich, but rather sandy loam, which should be well drained either naturally or artificially, and, of course, renovated at intervals with decayed and liquid-manure. Provided the plants are established, they are very accommodating as regards pruning, for if we desire them kept very dwarf, they may be cut down like Osier stools; on the other hand, if tall plants are required, they may be left almost untouched. They would be found exceedingly useful for pot work to embellish the conservatory; even plants in 3-inch pots blossom abundantly. They also make capital low hedges for bordering lawn-tennis grounds and similar positions. The best varieties for this latter purpose would be the Common Blush, Fabvier, and Abbé Mioland. In severe winters the plants should be protected in the same manner as Tea Roses. Fir boughs and Fern or Bracken would be very suitable for this purpose. Perhaps a list of a dozen of the best sorts would be welcome by readers unacquainted with these lovely garden Roses. I will place them in their order of merit, and will commence with

Common Blush.—This variety is so well known that little need be said in its praise. It is the freest and best of all. The colour is a blush-pink, shading off to crimson-pink. Suited either for climbing or massing.

Cramoisi-Superieur.—Rich velvety crimson, a most brilliant and lovely colour. Rather moderate in growth. Perhaps best suited for massing, edging, or pot work.

Fabvier.—Bright scarlet with white centre, semi-double and a fine vigorous grower. Well adapted for climbing or massing.

Mme. Laurette Messimy.—This is a very popular variety, cultivated now by the thousand. It is of a very striking colour, which is a lovely clear rose, shaded with yellow. A first-rate bedding variety.

Queen Mab.—A variety destined to become very popular. The colour of expanded flowers is a pleasing apricot tint, shaded with rose, whilst the buds are a lovely salmon-orange, quite a new colour in China Roses. The buds are charming, and will gladden the hearts of those florists who have large quantities of sprays and button-holes to make up.

Mme. Eugene Resal.—This is a seedling from Mme. L. Messimy and is quite distinct from that beautiful variety. The colour is rosy crimson, suffused with golden and bronzy-yellow. I believe this will become as popular as the well-known Noisette l'Idéal when better known.

Duke of York.—A beautiful Rose and peculiarly variable. The buds are pretty in shape, double, and of a deep carmine colour, shaded with white. It reminds one of the Tea Rose Homère, only the flowers are richer in colour and much better formed.

Archduke Charles.—Clear rose colour, changing to rich crimson, very variable, and a first-class variety.

Ducher.—Fine pure white, very showy, and a most useful kind.

Little Pet (sometimes called White Pet).—The corymbs of flowers when cut are almost in every way identical with Félicité-Perpétué, an old-fashioned evergreen Rose. Little Pet is a charming Rose for pot work, and would be the ideal Rose to plant on a grave. It is very dwarf and free-flowering.

Red Pet.—A good companion to the latter variety. It is of a rich crimson, changing in autumn to blackish-maroon.

Abbe Mioland.—Reddish-purple in colour and of a fine vigorous habit. Amateur.

ROSES ON WALLS.

Many of our best Roses in the open would no doubt be still finer if grown on walls, and, considering the extreme beauty, exquisite fragrance, and commercial value of the flowers, it is surprising that so few are grown in this manner. I do not think there is much doubt that in cases where Peaches, Apricots, etc., do not succeed well the wall space so occupied might be much more satisfactorily devoted to Roses. The shelter and shade of the walls would prove alike useful to them. The blooms would be protected from rough winds, and also at least partially from the dashing rains and storms of hail that so often play havoc among the most perfect of the Roses in the garden. The plants themselves can also easily be rendered safe from frosts when so treated, protection during severe weather in winter being then a comparatively easy matter. In the case of the majority of the magnificent family of Hybrid Perpetuals, the mere shelter of a wall would suffice to carry them safely through the most severe winters; while, as to more tender varieties, what more simple and easy than to protect them with boughs, nets, or canvas, as we commonly do now in the case of fruit-trees? By clothing both sides of our walls with Roses a great deal could be done to prolong the blooming season. On the northern and on the eastern sides most fresh and fragrant Roses might be gathered in the end of July and through the major part of August. Thus, by the time the plants on the eastern side of the wall had finished flowering, the Roses on the southern face of the wall might be yielding their second harvest of bloom, so that by the simple expedient of clothing both sides of a wall with the same or different varieties very much might be done to make the Rose harvest continuous from May to November, instead of intermittent, as is generally the case. Not only this, but during hot, dry weather Roses full of freshness, sap, and sweetness might be cut from the shady side of walls as superior, in fact, as cheese to chalk in all those qualities that give value to the Rose, such as form, substance, size, and fragrance, to those gathered from the sunny sides of walls, or dwarfs or standards in the open that have had to hold their own as best they can against withering droughts, etc., and the continued glare of strong sunshine. Of course, Roses on walls would need good root-runs; but in cases of clearing off worn-out fruit-trees and the substitution of Roses, the old borders, if in good heart, with a liberal dressing of manure, would, generally speaking, be found sufficient. The southern side of the walls should be devoted to the Teas, as they are more tender, and the northern side to Gloire de Dijon and the vigorous Hybrid Perpetuals. B. H.

TWELVE GOOD YELLOW TEA ROSES.

Yellow in Tea Roses seems to be the popular colour, in addition to which the plants are, as a rule, of stronger constitution than those bearing mixed-coloured flowers. More yellow than mixed coloured Teas by far appear in florists' windows, and in going through any large market-grower's establishment one cannot but be struck with the predominance of yellow varieties. I am not depreciating the many beautiful forms other than yellow; I admire them as much as anyone; but for the guidance of those who, as producers, are obliged to study fashion in flowers, I give a list of varieties which will be found to give satisfaction either for growing in pots or for planting out in borders in ordinary Rose houses.

Amazone is a capital Rose, and having rather elongated buds, will be found most useful for bouquet work when half expanded.

Comtesse de Nadaillac, a charming variety, is really one of the best of the section, its fine full flowers of apricot shade being very imposing. Its vigorous growth is also a point in its favour, and I have found it a most excellent forcing Rose, although, of course, its brilliancy is somewhat reduced under such conditions. Comtesse de Nadaillac should be included in every collection, however small.

Etoile de Lyon is a most useful Rose, being of fairly free growth, and yielding its sulphur-coloured flowers, which are bright yellow in the centre, in profusion. Another free bloomer of the pale yellow section, and one which has held its own for a good many years, is

Isabella Sprunt. I cannot say much in its favour as a forcer, but no fault can be found with it when planted out and allowed to come on gradually.

La Boule d'Or is another of the same type, but yellower in the centre, the blooms under good cultivation being very full and fine.

Mme. Falcot, a rich orange-coloured Rose, is very useful if taken in the bud state, although it quickly collapses after reaching the half-expanded state. One of the most beautiful Roses amongst yellow Teas is

Mme. Hoste, large, full, and of a brilliant yellow shade. Its constitution is good. A useful Rose, the colour of which would, perhaps, be termed by some more salmon than yellow, is Mme. Trifle; this is a seedling from Gloire de Dijon, which it to some extent resembles in freedom of growth and blooming.

Medea, a handsome, full lemon-yellow canary-centred flower, is another reliable Rose of vigorous growth, and worthy of a place in limited collections. The bloom is extra large even when in the bud state.

Perle de Lyon, deep yellow, often changing to apricot with age, is a Rose which will take a lot of beating by any other of the same colour, and one which in vigour of growth is surpassed by none. This is a favourite with market-growers, which fact is of itself a pretty good recommendation.

Perle des Jardins, another favourite with market-growers, is indispensable. The flowers, which vary in colour from a bright straw to a deep yellow, are produced in great numbers on the many stout growths the plant annually makes. There is now a climbing form, a sport from the original, and most useful for training over walls in conservatories, or for covering south and west walls.

Princess Beatrice, a pale yellow flower, the edges of the petals slightly coloured with rose, blooms very large and full, and growth vigorous, and Sunset, an apricot-coloured variety of great merit, also a very free bloomer, complete the list. L.

Deformed Rose-flowers.—"L. E." encloses some Rose-blooms, and will be much obliged if the Editor of Gardening can inform her why the flowers are so deformed? It is a dwarf bush and covered with flowers, but they are all mal-formed, and "L. E." knows no reason to account for it. Any rules for its treatment will be gratefully received.

*** We do not know the name of your Rose, but think it is one of the wretched seedlings French growers send over here at a ridiculously low figure. They are the cast-offs of their seedling beds, and dear at any price. Weather and culture generally would not account for the condition yours are in. Burn them, and replace

with such as General Jacqueminot, Duke of Edinburgh, Duke of Connaught, Charles Lefebvre, Prince C. de Rohan, and Dupuy Jamain, if you want good dark-red Roses.

Cutting back a Niphetos Rose —I have a Niphetos Rose climbing up the back of a cool greenhouse. It commenced flowering the beginning of last April, and is flowering a little still. It has grown very much during the last month, and I am afraid it will break the glass in the roof of the house. Would you kindly tell me if it would injure the plant to cut it down now, or ought I to wait until the autumn? Please let me know in GARDENING what would be the time to cut it back.—EDITH.

*** Thin out the wood now and so get more strength and air among that left. Do not cut down the long rods of this summer's growth more than you can help. We presume you have the climbing variety of Niphetos, and this blooms best upon rods grown in the same way as frequently advised for Maréchal Niel.

Rose budding.—After drawing the soil away, and placing the Rose-bud in the Manetti and seedling Brier-stock, shall I bring the soil over the bud again or leave it exposed?—J. WILFORD.

*** Leave the bud exposed. Next spring, when young growth has commenced, draw the soil around the maiden Rose once more, not sooner.

Making liquid-manure for Roses.—How much guano to the gallon should be used for making liquid-manure for exhibition Roses, and which is the best guano to use?—T. B

*** Use Peruvian guano at the rate of one ounce to a gallon of water. A free use of such a weak stimulant is far safer and more beneficial than using it stronger.

Roses not expanding.—Inclosed find two half-expanded Roses. The whole of the buds on two trees are similarly affected—*i. e.*, they seem incapable of expanding. Other trees in the same border are expanding properly, but these two trees seem to be hopeless. What is the cause and remedy?—L. K.

*** Extremes of temperature have nipped the buds sent. This is more noticeable with varieties of a very double flower, and which are naturally much longer in opening. You can do nothing with them. Many will open fairly well, if not worse than those sent.

Rose-buds misshapen.—Will you kindly let me know in your next issue the cause of the misshapen buds enclosed? Nearly all my Pride of Waltham and S M Rodocnachi display this defect. I prune close, disbud, and liquid manure well. I also enclose a few leaves. Please tell me how to identify the creature that does the mischief? I have never found one at work.—W. R LYSAGHT.

*** *Your Rose-trees are pierced and eaten by one of the night-feeding weevils—a small, beetle-like insect. It is almost impossible to check them, and they are more prevalent than usual this season. Buds of S. N. Rhodocanachi and Pride of Waltham, also others of the same class, are much subject to the deformity yours are suffering from. You cannot help them in any way. Later, however, flowers will be free.*

Curious Rose-bloom.—I enclose herewith a bloom from climbing Rose-tree with a bud growing through the centre, as I think it might interest your readers. I shall be glad to hear if this phenomenon is a common one?—W. A.

*** *A curious malformation. We have, however, seen it before.*

Brown spots on Rose-leaves *(G. S.)*—The specimens were far too shrivelled for us to recognise the variety, but probably it is more tender than the others you possess, and thus was affected by the very changeable weather of late May and early June. Young growths now forming will most likely do well and flower satisfactorily.

Rose-leaves spotted (*A. J. B.* and *Jules Margottin*).—Your leaves are spotted with the early stage of the Orange fungus. You can neither cure nor remedy. Fortunately, the disease often disappears as suddenly as it came, and, although the leaves fall, the plant is not much affected, because the leaves are generally more or less matured and ripened.

Rose leaf curling *(J. W. J.)*.—Your plants are suffering from the crippling effects of changeable weather. We have noticed it more than usual this season. Pick off the affected leaves. Your plants will not suffer to any appreciable etent. Why did you pack green Rose-leaves in a dry, ashy soil?

Roses not opening well *(Edgar Roebuck)*.—You are growing a very inferior variety of Roses. Select such as the following half-dozen, and you will not be troubled with such wretched specimens as those sent: General Jacqueminot, dark red; Prince C. de Rohan, maroon; Boule de Neige, white; Marie Van Houtte, yellow; Mrs. John Laing, pink; and William Allen Richardson, deep orange and apricot.

GARDEN WORK.*

Conservatory.

Cut down Show and Fancy Pelargoniums, and put in the healthiest tops as cuttings to increase stock. They may either be inserted singly in small pots or half-a-dozen cuttings round the sides of 5-inch pots. They strike freely in sandy loam, with a little leaf-mould and sand added. A little silver-sand should be placed on the top. The best place for the cuttings is a cold-frame, ventilated for an hour or so in the morning. Fuchsias for early flowering should be struck during this month or early in August, and be kept growing all winter in a warm-house near the glass, and never allowed to get pot-bound till they are in the flowering pots. Nice little plants covered with bloom may be had in 5-inch pots. Young plants have a better appearance than cut-backs, the growth being so fresh and the flowers larger. Tuberous Begonias will now be at their best, and pot-bound plants should be helped with clear, weak liquid-manure. The earliest Lilies of the lancifolium section will now be opening their blossoms. This is a most useful family for the conservatory, as a part of the stock may be plunged outside and kept back for late blooming. L. auratum will be in good condition, but the odour of the blossoms if many plants are in bloom will be too powerful for some constitutions; but the Lily does well plunged outside among Rhododendrons. Large plants of Aloes, Dracænas, and the hardiest Palms may be placed on the lawn in sheltered nooks. Brugmansias also flower well outside, but must be well supplied with water, liquid-manure being given occasionally. Agapanthuses will be better outside now, and large plants in tubs are ornamental anywhere. Oranges and Myrtles are among the useful decorative subjects in summer. The double-blossomed Myrtle is now very fresh and charmingly fragrant.

Stove.

To get colour in Crotons and Dracænas they must have light, but not exposed to bright sunshine. A roller-blind that can be run down when the sun is bright from, say, 11 a.m. to 3 p.m, will supply all that is needful. At other times let the plants have all the light possible. Young plants of the long, narrow-leaved section are among the best dinner-table plants, and a stock of young plants should be kept for this purpose by striking a few cuttings annually. If thrips are allowed to get a footing in the house they will soon find the Crotons and ruin the plants in a very short time. Leaf-cuttings of that pretty blue-flowered African plant Saintpaulia ionantha will strike now in a close propagating frame. The plant flowers freely in 5-inch pots, and make a useful addition to the drawing-room table-plants in autumn and winter. Among flowering plants now Gloxinias, Streptocarpus, and Achimenes should find a place, being easy to manage and very effective. Gesneras for winter-flowering will now be starting freely, and should be planted in pans and grown in a low warm-pit or house, shaded from hot sun. Fires will still be necessary on cold nights, but may be allowed to go out on bright mornings. Give liquid-manure to Allamandas coming into flower, and if trained on balloon-shaped wire trainers tie the young shoots in as soon as the flower buds are visible. Night temperature now 65 degs. to 68 degs. Where a number of Eucharis Lilies are grown there will be plants in various stages—some resting and others coming on. Liquid-manure will be a good help to them when the spikes are starting.

Hard-wooded Plants Outside

must have careful attention in the matter of watering. The plants should be examined every evening, and their condition tested by rapping the pot. A further look round should be given in the forenoon of each bright day, as a plant permitted to get dust dry is very apt to go off afterwards, even when it survives for the time being.

Chrysanthemums

are now for the most part in the flowering-pots and growing freely. The plants must be well staked, and the tops of the stake secured to wire to prevent the wind blowing them over. No crowding should be permitted, and all side-shoots and premature flower-buds removed.

Orchard-house.

Both trees in pots and also those planted out will be better mulched now, and, in addition, liquid-manure should be given, as Peaches especially will take a good deal of nourishment up till the time the plants begin to colour. Use the syringe freely in the afternoon during the time the fruits are swelling, closing the house entirely at 4 o'clock, as this treatment swells the fruit to a large size; but give an inch or so of air about 8 o'clock in the evening, and increase the ventilation not later than 6 a.m. on bright mornings. Neither Peaches nor Plums throw many strong shoots when they fairly settle down to bearing; but strong shoots of young trees should be pinched, or in some cases, if they are likely to disorganise growth, cut clean out.

Late Grapes.

The thinning should now be pretty well finished. All small, imperfectly-fertilised berries can be identified now and cut out Those kinds which are subject to scalding will require careful management, especially as regards ventilation. It is a good plan to keep a little heat in the pipes and a little ventilation on all night to prevent all deposits of moisture. The foliage, also, must be ample, and in the case of Lady Downes, which is sometimes given to scalding, the laterals should not be too severely pinched back till the dangerous period is over.

Window Gardening.

Campanulas, blue and white, in several varieties are pretty now suspended in cottage-windows. C. isophylla, white and blue, are free-growing and flowering varieties, and C. garganica is a charming, slender-growing species suitable for basket work. Harrison's Musk makes a pretty basket-plant for a shady window. Good forms of Tuberous Begonias and Zonal Pelargoniums are very bright now, and as foils such charming old plants as Lady Plymouth and other fragrant-leaved "Geraniums" are desirable.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Outdoor Garden.

The bark of both Briers and Manettis will work freely now. Do the Briers first—the Manettis can wait; but standard Briers, if the bark gets hard and tight, will take a good deal of loosening. It is a good plan to mulch the standard Briers; it brings them into condition and helps the union. Where only a few Briers have to be treated, a good soaking of water during a dry time will be a good preparation for budding. Place the buds as low down as possible, and bud with sufficient firmness to keep out the air, but loosen the ties as soon as the union is complete. Ornamental shrubs and trees may be budded as soon as the bark is in condition. Acer Negundo variegatum and other things are usually budded at this season or shortly. In layering Carnations a couple of inches of sandy compost round each will expedite roots, and the sooner the roots form the stronger the plants will be. Pink pipings or cuttings are in good condition for rooting now; make up a bed of light rich sandy soil in a shady position. We strike ours on the north side of a low wall, and therefore very little shading is required. The cuttings must never be permitted to get dry. Other hardy things, such as Phloxes Coreopsis grandiflora, etc, will root quickly now.

Fruit Garden.

Red-spider on Peaches and Vines under glass is a nasty pest, and is easier prevented than cured. Preventive measures consist, in the first place, in always maintaining a genial atmosphere, freely ventilated. A badly-ventilated house means soft foliage, which soon falls a prey to red-spider. Peaches should have a free circulation, and this cannot be carried on without front ventilation, but this front ventilation must be given in such a manner as to avoid cold draughts early in the season. When the days are warm and calm too much air cannot be given, and by closing early and saturating the atmosphere the red-spider will have an uncomfortable time, if any are present. Sulphur on the pipes and in the whitewash on the walls has a beneficial effect in fruit-houses generally as an antidote to both red-spider and mildew. Now is the time to feed Vines with roots inside with liquid-manure and rich top-dressings. Buried in the border, rich substances may do, but on the surface inside the house the roots will be attracted upwards, and the wood and fruit will feel the benefit of it. Place the early Strawberry runners in the fruiting-pots; 6-inch pots are best. Get the pots full of healthy roots and disbud to one crown.

Vegetable Garden.

Cucumbers under glass must have frequent attention in thinning and pinching the growth, especially when the non-ventilating system is adopted, and as fast as young roots come to the surface cover them with sweet, rich compost. Good loam, free from wireworms, and old manure in equal parts are suitable, and this same kind of top-dressing will suit Tomatoes when the fruits are set. Mulch and water Cauliflowers, Globe Artichokes, and Peas. Finish thinning Beet and any other crop in a crowded condition. Plant late Cauliflowers; Veitch's Autumn Self-protecting Broccoli is indispensable for November and December and later. Sow early Peas in a sunny spot, as Peas will not swell up well after August unless the sun shines fully upon them. Sow a good hardy Lettuce for autumn use; Bath Cos is a good old favourite sort for winter. Sow again end of month and again early in August. Plant out Manchester Prize and Sutton's Sulham Celery. Tom Thumb Savoys, planted 10 inches apart, will be found very useful. Sow a few Dwarf French Beans on a warm border. Plant out Endive and sow for later use. Keep down weeds. E HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 12th.—Busy budding standard Briers; shall not shorten back till autumn, then only partially. Tied Dahlias, Hollyhocks, Phloxes, etc. Bamboo canes are serviceable stakes for many things, being neat and lasting. Layered Carnations; a little gritty compost was placed round each plant, into which the layers were pegged. Pegs made from 16-gauge wire were used; a stem of wire costing about 3s. will cut up into many thousands of pegs.

July 13th.—Sowed Dwarf French Beans of an early kind on south border. Made a last sowing of early Chelsea Gem Peas. Sowed Bath Cos Lettuce and green curled Endive. Mulched rows of Celery and Celeriac with Moss-litter-manure to save watering. Potted Royal Sovereign and other Strawberries for forcing. Shortened back young shoots of Plums on walls. Top-dressed and pegged out main-shoots of Melons. Planted another frame of late Melons.

July 14th.—Wrapped paper round early Celery to blanch. Potted on Cyclamens and placed in cold-frame Planted out a lot of seedling Begonias in nursery bed. Cut down Fuchsias to make young shoots for cutting. Placed Camellias in shady spot outside. Picked seed-pods from Rhododendrons. Gathered seeds from a good strain of Pansies; shall sow at once. Pricked out more Wallflowers. Planted out Autumn Giant Cauliflower, curled Kale, and other winter stuff.

July 15th.—Sowed Ellam's Early and Enfield Market Cabbages. Shall sow again later; we always make two sowings. Watered inside borders of late vinery and Peach-house with liquid-manure. Removed a few leaves from several trees of Waterloo Peaches on south wall to expose fruits, which are now ripening; in most instances thrusting the leaves on one side will do. Sowed Machett Mignonette in 3-inch pots for autumn blooming.

July 16th.—Mulched Peas coming into blossom. Finished the preparation of ground for Strawberries. Pinched off the blossoms from Vicomtesse Strawberries, which were planted out after forcing; we want the fruit later. Regulated climbers in conservatory. Turned out plants not now effective, and filled in with specimen Ferns, etc, from warm-houses.

July 17th.—Potted off Chinese Primulas and Cinerarias. Sowed Cucumbers for autumn bearing. Thinned and trained Tomatoes; mulched with Moss-litter-manure. Sowed Herbaceous Calceolarias. Put in cuttings of Oleanders. Trained Clematis and other climbers on walls. Planted out more winter greens.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

998—**Bankinia Galpini.**—Some seeds from the Baberton district of the Transvaal have started with me in a hot-frame. What is the nature of this plant, and does it flower? Kindly advise as to treatment. Will it succeed out-of-doors?—STIRLINGSHIRE.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

999—**Arabis sickly** *(Quæsitor).*—Perhaps the soil is kept too wet, causing stagnation about the roots, which would be sufficient to account for the state of the leaves sent. If the plant is exposed to gas the leaves would suffer somewhat.

1000—**Obtaining Opium** *(J. D. M. S.).*—Opium is obtained by cutting or scratching the capsules when they are nearly full grown, but still green. The juice then exudes and soon hardens, and is scraped off and formed into balls.—G. S. S.

1001—**Tomato-plants falling** *(J. M. M.).*—The plants have either received a check by drought at the roots, or they are being too highly fed, causing the buds to drop. Do not give stimulative food until several clusters of fruit are swelling.

1002—**Canterbury Bells changing colour** *(Tom).*—We cannot understand your Canterbury Bells changing colour in this way. Are you quite sure it is the same plants that bore pink blossoms that are now carrying flowers of a pure white?

1003—**Cauliflowers diseased** *(W. A. Jones).*—The roots of the Cauliflowers are, no doubt, destroyed by grubs or by "clubbing," which is a disease all too familiar in some places. If they are badly infested nothing will save them. Lime dug in about the roots is the best remedy.

1004—**Making Tobacco-water** *(W. T. M.).*—An ounce of common Tobacco will make a gallon of liquor of good strength. Place the Tobacco in a piece of muslin or thin canvas, and let it soak in the water, which should be hot to begin with, for a few hours, squeezing the Tobacco occasionally to extract the juice.

1005—**Mushrooms in saw-pit** *(E. B.).*—Manure 7 inches deep is not sufficient to retain the necessary heat to enable the spawn to run properly and produce Mushrooms. At the least it should be double the depth. The manure ought to maintain a temperature of 60 degs. for at least a month after the spawn is inserted.

1006—**Turnips unsatisfactory** *(W. A. Jones).*—The Turnip-leaves are perforated by a small fly so destructive to this root at some seasons. If they are not too much riddled the roots will grow out of harm's way. Before any signs of the fly is apparent it is a good plan to sprinkle the leaves when wet with soot and dry ashes mixed.

1007—**Spanish and English Iris** *(J. T. W.)*—There is no occasion to lift the roots of Spanish or English Irises in the winter. You might mulch the soil about them in November with half-decayed horse-manure. This will not only act as a protection from severe frost, but it will enrich the soil for the following season's growth and blossom.

1008—**Tree-Fern stumps** *(Etelka).*—Apply to such large growers of specimen stove plants as Mr. Cypher, of Cheltenham; Messrs. Veitch and Sons, Chelsea; or Messrs. Wills and Segar, South Kensington. We do not know of any firm making a speciality of supplying these. They are mostly obtained from dead plants in private establishments.

1009—**Petunias as window plants** *(P.).*—Yes, these make excellent window plants, and are very showy, especially the flaked varieties, both single and double. To have them stocky and short-jointed, they should be grown out-of-doors, fully exposed to the sun, and be stopped frequently to induce them to break back freely and form bushy specimens.

1010—**Mignonette dying** *(C. G. Warrender).*—Some insect, no doubt, is eating the roots, causing the plants to die off in this way. Sprinkle soot on the soil about the plants, pricking it into the soil a couple of inches deep with a pointed stick. If rain does not follow within a few days well water the plants with the object of washing the soot down to the roots.

1011—**Tender Cucumbers** *(A.).*—It is hardly too much to say that in nine cases out of ten Cucumbers are not cut until they are a long way past their best. Two-thirds grown is about the best size for Cucumbers. Beyond that stage they deteriorate. The earlier the fruit is cut after it attains a fair size the more will be produced, and the longer the plants will continue in bearing.

1012—**Frame Cucumbers turning yellow** *(Young Beginner).*—Do you fertilise the fruit? It is necessary to pick off a male or "false blossom"—*i.e.*, one without the young Cucumber below it, and convey the pollen to the fruit-bearing or female blossom. Unless fertilised artificially or by bees and other insects, you will find the young fruits die off in the manner you describe.

1013—**Blight on fruit trees** *(H.).*—Anything that cleanses the young growth from filth and insects is beneficial to a fruit-tree, and washings of soap-suds and water are very useful if employed in time; but it does not follow that a solution of soda will be equally so, as if given too strong it will be hurtful. Try it on a branch or two first, and regulate the strength by the effect observed.

1014—**Plants for a vinery** *(X.).*—Neither Cucumbers nor Vegetable Marrows would succeed under the Vines. You could grow some of the hardier kinds of Ferns; also Camellias, Cytisus, Coronillas, and similar plants which flower in spring, and which can be placed outside before the Vines offer them too much shade. Calceolarias, Zonal Pelargoniums, Fuchsias, etc, might be kept in the vinery during winter.

1015—**Barked Apple-trees** *(A.).*—We think that the Apple-trees will probably die. The only thing that can be done is to cover the wounded parts with something to keep the air out until new bark can be formed; but if the inner bark is gone, even this will not avail. A paste made up of clay and cow-manure and placed over the wounds may be useful This must be secured round the stems of the trees by some old sacking or carpet bound with string.

1016—**Ferns on old walls** *(F.).*—If small plants are obtained in spring and planted between the stones or bricks with a little soil, they would soon become established, and speedily form a perfect wall fernery; or spores might be sown with every prospect of success. Walls shaded from the hot sun of summer are best suited to this purpose, and at the foot of such a wall a rock garden might be made, which could also be planted with Ferns or alpine plants.

1017—**Celery insect-infested** *(W. A. Jones).*—The plants are no doubt attacked by the Celery-fly, common enough in some seasons. The eggs are deposited between the two skins of the leaf; as they mature a maggot that works its way under the skin will be perceptible. These should be killed by squeezing the part with the finger and thumb, or pick them out with the point of a knife. The plants ought to be put out at once, or the check of removal will do harm.

1018—**Unhealthy Cucumbers** *(J.).*—The Cucumber-plants are affected with a fungoid disease for which there is no remedy at all reliable. The best way is to clear the whole lot out, soil and all, and cleanse the house by washing and whitewashing the walls with hot limewash. Replant in fresh turfy soil, and obtain plants from a source entirely free from disease, if possible. This Cucumber disease is very difficult to cope with, and half measures are generally useless.

1019—**Tomato diseased** *(Subscriber).*—The Tomato-plant is infested with the fungus Perenospora infestans, so destructive to Tomatoes. Pull up the three plants so affected, carefully examine the rest, and if any leaves show signs, cut them off and burn them at once. Keep the house warmer for a time, yet with air on at the same time. Keep the soil drier, also, and sprinkle this and the plants near the diseased ones with flowers of sulphur, which does much to check the spread of the disease.

1020—**Lilies unsatisfactory** *(B.).*—The blooms were small and misshapen. The cause may be owing to cultural defects, or it may be caused by the inferior quality of the bulbs. The latter is very often the case. Good priced bulbs from a reliable house as a rule give satisfactory blossoms. We do not advise the purchase of bulbs purely on account of their being cheap. Giving no air to the greenhouse certainly is a mistake in the cultivation of any plant; especially is it wrong with flowering plants.

1021—**Rock-plants under trees** *(U.).*—We fear that little besides Ferns would do satisfactorily in the dense shade of a Beech-tree. Many plants grow more freely in partial shade than when exposed to the full sunlight; but the foliage of the Beech is so thick that flowering plants cannot live under it. London Pride, Saxifrage, and the various kinds of Periwinkles might be tried. The situation is, however, suitable for most kinds of hardy Ferns, and we think that the best plan would be to devote it to their culture.

1022—**Unhealthy Vine-leaves** *(S.).*—The Vine-leaves sent were badly affected with "warts" on their undersides. They are injurious to the leaves, no doubt. This affection may be, and generally is, caused by a too close, warm, and moist an atmosphere in the vinery. See that the roots are in good working order, and maintain a well ventilated and moderately moist atmosphere in the vinery. The lateral shoots may be allowed to grow away a little to encourage a free root-action, and do not overcrop the Vines

1023—**Propagating Pinks** *(D.).*—Now is the best time to propagate Pinks from pipings. The smallest growths strike most freely, and if the weather is dull and showery at the time they are taken off they may be put in in a shady position quite in the open ground. It is rather more difficult to propagate the Pink in the south of this country than in the north, and in dry, sunny weather it is best to place the pipings in boxes and to strike them on a very mild hot-bed. They must be shaded from the sun until roots are formed.

1024—**Peach-leaves diseased** *(R.).*—The Peach-leaves sent are not diseased, but are very badly affected with red-spider, which is generally caused by too warm and dry an atmosphere in the house. The trees should have been well syringed with clean soft water morning and evening, taking care to well wet the undersides of the foliage. Also the roots should be kept well supplied with moisture, not merely (as is often done) damping the surface of the soil, but giving sufficient to thoroughly soak the whole body of the earth. Examine the roots now, and if dry give them a thorough soaking of water at once, and keep them moist afterwards. Also well wash the Peach-trees frequently with the garden-engine or syringe. The house should be freely ventilated, both day and night.

1025—**Phloxes in pots** *(B.).*—These are excellent when grown in pots for conservatory decoration, and they must now be well attended to in order to have them very strong at the time of flowering. The Phlox is a gross feeder, and will absorb with great benefit an enormous quantity of rich stimulants, which should be supplied either in the way of surface-dressing or clear manure-water, not too strong. Tie the growths to stout sticks as they advance, and place the plants where they can obtain plenty of light and air.

1026—**Best Ivy-leaved Pelargoniums** *(E. M. A).*—In addition to the three you have, the following are deserving of cultivation: Beauty of Castle Hill, rich rose, shaded salmon; Charles Grad, satiny-magenta; Corden's Glory, bright scarlet; Edouard Charton, bluish-lilac; Isidore Feral, light rose; Laplace, crimson-lake; Mme. Crousse, delicate rose; Robert Owen, rose-cerise; Ryecroft Surprise, salmon-pink; Mme. Emilie Galle, pure white; and M. Henri Pache, dark red. The above are all double-flowered.

1027—**Muscat Grapes shanking** *(A.).*—From the description given no doubt the Grapes are affected with the disease called "shanking." This is frequently caused by overcropping, or the roots have got down into a cold and ungenial soil. Sometimes, too, overdryness at the roots will cause it, and so will a bad attack of red-spider or defective ventilation; in fact, anything that has a tendency to check the healthy growth of the Vines is liable to induce "shanking." How have these Vines been treated generally, and are they very heavily cropped?

1028—**Variegated Indian Corn** *(Inquirer).*—Are you certain the variety you saw growing 2 feet high is Zea japonica, as there are dwarf-growing sorts of the Zea family? Zea gracillima grows 2 feet high, is much variegated, has narrower leaves, and which are more drooping than Z. japonica. Slitting the stem just above the soil by pushing a sharp knife clean through the stem in an upright direction might check the growth somewhat. Planting in poor soil would induce a sturdy growth, and would be a safe way of dwarfing the growth.

1029—**Creepers for house** *(Banjo).*—The Ivy is a very hungry feeder, and few subjects will have a chance in connection with it. You could plant a variegated form and get more colour. Clematises of the Jackmani section would grow if properly fed, and would give a change of colour. Smith's Snow White is a beautiful foil to the deep purple of the old Jackmani, and similar in growth. The Azaleas, Lilies, and Rhododendrons will be better if a little peat or light leaf-soil can be added: but all the subjects you name will grow in a rich and not too stiff soil.

1030—**Strawberries unsatisfactory** *(Inquirer).*—The insect attacking the Strawberries you mention is very common this season owing to the showery weather experienced. There is no remedy for this year's crop. Another year you might sprinkle soot on the soil before the straw is put under the fruit for the purpose of keeping them clean. The green-fly inside the mass of "cuckoo spittle," so commonly seen at this season, is the young of the froth-fly or frog-hopper. At the end of July it leaves its skin and comes forth the perfect insect. But little harm is done by this insect.

1031—**Moving Asparagus** *(A).*—As the Asparagus-plants were only set out last March, it will do them but little, if any, harm to move them again now. Open out trenches 6 inches or 8 inches deep, and wide enough to contain the roots when laid out straight. Let the trenches be 3 feet apart, and the plants 18 inches apart in them; cover the crown of the roots about 1 inch in depth with soil, water them well, and mulch at once with manure. In the course of two or three years every alternate plant should be taken out, leaving the permanent ones 3 feet apart.

1032—**Vines not fruiting** *(F.).*—Keep the growth of the Vines thin to secure well-ripened wood. This matter is often neglected by amateurs; but it is a most essential point in Grape culture. Probably, also, the roots are too deep. If they could be carefully lifted early in September and brought nearer the surface, fruitfulness would no doubt be again obtained. When the lifting is done the house should be shaded until the roots are active again. Turfy-loam, crushed bones, and some old mortar rubbish would be excellent for the new border, and the drainage should be made good.

1033—**Sowing Parsley, etc.** *(C.)*—A little Parsley should now be sown on well-prepared, rich ground. Sow in rows 15 inches apart. This will not be disposed to run to seed so soon in the spring as that which was put in earlier. Thin out the early-sown plants, leaving them 9 inches or 10 inches asunder. If this is attended to in time, there will be little to fear from canker at the root, which usually occurs when the plants are overcrowded. When Parsley is given sufficient room it can be kept through the winter with half the trouble and much greater certainty than where it is starved and weakly.

1034—**Scalded Grapes** *(S.).*—The Grapes sent are badly "scalded," and this is generally caused through late or imperfect ventilation on some bright sunny morning, whilst the internal atmosphere of the vinery and even the berries are saturated with moisture. The Muscat of Alexandria and Lady Downes Grapes are particularly liable to this affection. The best way to prevent it is to leave some air on at the top of the house all night, and to keep the hot-water pipes warm to maintain the required temperature and produce a rather dry and light atmosphere. This will prevent the accumulation of stagnant moisture in the air of the house and on the Grapes.

1035—**Propagating Gooseberries** *(F.).*—These are easily increased by cuttings. Well-ripened shoots taken off early in November, and cut to a length of about a foot each, removing four or five of the buds at the bottom of each shoot, will strike root freely if inserted firmly in a border of sandy soil as soon as possible after they are made. The cuttings can be planted rather thickly together, say, about 6 inches from each other in the row, and about a foot and a half between the rows, so as to be

able to walk between them to destroy weeds. The soil should be well-trodden down around the cuttings, so as to make them quite firm in the soil. After they have remained 12 months in the cutting-beds they should be transplanted rather thinly, or to well dug and manured ground.

1036—**Diseased Hollyhocks** (*R.*).—Yes, the plants are very badly affected with the Hollyhock-fungus (Puccinia malvacearum). There is no reliable remedy for it, therefore the best plan is to pull up and burn the affected plants at once. Those that do not seem to be attacked should, as a precaution, be washed with soapy water, in which a liberal proportion of flowers of sulphur has been dissolved. The sulphur will settle at the bottom of the vessel, and must be frequently stirred up when the water is being used. Sulphur is very effective in destroying almost any fungus, and may this one in its very earliest stages; but it will not do so when established.

1037—**Sowing seeds of perennials** (*C. S. H.*).—Sow the seeds of perennials at once in fine soil out-of-doors. Shade the soil with green boughs or aught else to keep it moist for a time to hasten the germination of the seed. When the plants are large enough to handle, prick them out in beds where all but the following may remain until April, when they can be planted where to flower, except the Hollyhock; this should be grown in a frame and kept there until March. Pansies, Forget-me-nots, Sweet Williams, Canterbury Bells, Wallflowers, and Arabis albida may be planted where they are to flower. Manure in the soil is all that is necessary to aid growth.

1038—**Savoys** (*Y.*).—These are excellent winter greens. For bulk of crop, and where there is plenty of space, the old and somewhat coarse Drumhead is probably the best, but for ordinary garden crops the Dwarf Green and Early Ulm are among the best kinds, being early hearters, and tender and good in flavour. These kinds may be planted almost as closely together as the Dwarf York Cabbage, and they will heart though put out as late as the beginning or middle of August even in the north, but planting a month earlier enables them to produce larger and firmer heads. The Savoy likes liberal treatment as to culture, like all the rest of the Cabbage tribe.

1039—**Soot as manure** (*W. A. I.*).—The fresher the liquid made from soot or any other manure where it is immediately dissolved the better it is. Loss of power must follow, as a matter of course, to some extent. No doubt the mixing of soot with hot water is a good way of preparing this stimulant, yet there must be some blocking of the pores of the soil by settlement of solid matter. A better method of employing soot in liquid form is to place 1 bushel of soot in a bag, sinking the bag under water in a tub. This quantity will last for three weeks or more. Fill the tub as required with water. The goodness of the soot, so to speak, is absorbed through the bag without having the solid.

1040—**Plants for an empty room** (*B*).—At this time of the year almost any of the ordinary plants that thrive in pots may be grown in an empty room if the light be good and plenty of air is given. For fine foliage have India-rubber-plants, green and variegated Azaleas, a greenhouse Palm or two, such as Chamærops Fortunei, a few greenhouse Ferns, such as Adiantum cuneatum and Pteris serrulata, would do; and for flowering, nothing will succeed better than Zonal and Nosegay Pelargoniums of various colours, Fuchsias, Petunias, shrubby Calceolarias, Balsams, and, indeed, any kind of greenhouse plant that may be in season. The measure of success attained must be determined by the attention given—light, air, and other conditions essential to plant life.

1041—**Saving stock of Double Petunias.**—I have some Double Petunias now in bloom which I want to save and increase my stock from for next season. Kindly briefly outline my course of treatment after the plants have done flowering? Heated house and propagator and cold-frame at command.—PETUNIA.

*** *When the plants have done blooming cut them down within 4 inches of the soil. When the shoots resulting from this treatment are 3 inches long take them off with a sharp knife, cutting square across below a joint, and insert them in sandy soil singly in 2½-inch pots. Place them in a cold-frame, close, and shaded from bright sun. Roots will quickly form. When the pots are full of roots transfer the plants into 4-inch pots, and pinch the point out of each plant when they are 4 inches high. In this way stocky plants will be produced that will pass safely through the winter on a shelf close to the glass in a greenhouse with the frost excluded, and will give abundance of flower next May and June. As growth progresses, pinch each shoot at 3 inches long to maintain a bushy habit of growth. If when cutting down the plants there are any shoots that have not blossomed, make these into cuttings, as a large number of plants will thus be obtained.*

1042—**Treatment of Vines.**—I have a small unheated vinery 30 feet by 13 feet, in which are four old-established Vines, each carrying three rods. There are roughly speaking, about 200 bunches of Grapes; several of the laterals have two bunches. Is it better to cut out one of these, or, not wishing to grow for show, can both bunches be allowed to ripen without injuring the Vine?—PLYMOUTHIAN.

*** *Allow one shoot to carry one bunch of fruit. Over-cropping is one reason of ill-finished Grapes. Too much strain upon the Vine prevents the berries colouring, induces "shanking," and generally impairs the constitution of the Vines.*

1043—**Antirrhinum sickly.**—Will you tell me through GARDENING what affects my Antirrhinum? It is only on one plant that the flowers are crimped. These were from cuttings taken last year. There are no marks on leaves or stems.—A. R.

*** *The Antirrhinum is affected with a disease peculiar to this genus that contracts the freedom of growth. Nothing will cure it; pull it up and burn it, or it might spread to others.*

1044—**Cutting leaves off Irises.**—Will you kindly inform me if it is a good plan to cut down the leaves of the White Irises after they have done blooming?—E. WITHERS

*** *Your query is not very definite: there are many White Irises. If you mean the Spanish or English (bulbous), leave them to decay naturally; in fact, every Iris resents interference with its foliage.*

1045—**Zinc labels.**—Will you please inform me, through GARDENING, if there is any special ink to mark zinc labels, as I have used ordinary ink, but it does not last?—F. R. F.

*** *Yes; any florist supplying zinc labels can supply the ink also. We have used Brunswick-black, slightly thinned by a very little turps, and found it lasting and more legible than some of the inks. Ordinary ink is quite useless. You must have the zinc clear and smooth before using the acids forming indelible ink; but this is not so necessary with the Brunswick-black.*

1046—**Grapes failing.**—Can you inform me the cause of my Grapes going off like the sample I enclose? I have kept them moist, and gave them top air last year. I am told that they were just the same last year. I came here on the 20th of April this year. I have used sulphur on the pipes, but that does not seem to stop the mischief. It is a very old vinery, and I think the reason of it is that the soil has never been manured.—ONE IN TROUBLE.

*** *The Vines are badly attacked with mildew, and in their present state cannot come to perfection. The mildew, which is really a fungus, may have come to the Vines years ago, and, until it is eradicated, will never leave them. A continual current of cold air is the cause of much mildew upon Vines. Such currents are caused by opening both top and bottom ventilators when the Vines are in bloom, or it may be the door as well at the same time, thus creating a draught. If the roots are far from the surface and in a cold subsoil, that might cause the mildew. The former is generally the cause. The only way to eradicate mildew from Vines is by the aid of flowers of sulphur. Sprinkle it over the bunches and leaves. It will disfigure the berries, but as they are useless in their present state it matters not. Mix sulphur with water, working it into the consistency of paint, and cover the stems of the Vines and the hot-water pipes, which ought to be made hot, thus giving off the fumes from the sulphur. Keep the atmosphere of the vinery dry and rather warm. When the leaves have fallen from the Vines well wash the rods with sulphur twice during the winter.*

1047—**Pansy or Viola.**—I should be much obliged if you will tell me what is the difference between a Pansy and a Viola?—A. H.

*** *A Viola is a Pansy, and it is silly to call a certain form Viola, a name which applies to the whole family. Hence there is no difference between a Pansy and a Viola, as the former is merely the English name of the latter. The name Viola should never be used—it creates confusion. The term Pansy is a good one in all ways.*

1048 — **Ivy-leaved "Geraniums" after flowering.**—Should Ivy "Geraniums" be cut down when they have done flowering?—BEN-MY-CHREE.

*** *This is not absolutely necessary, but if you remove a few cuttings the plants will become more bushy, and you will also secure a stock of young plants that will be very useful for late flowering and throughout the winter months. You may also pinch out points of flowerless growths with the object of securing a better-shaped plant. The Ivy-leaf "Geranium" is a constant bloomer when in good health and growth. Perhaps yours are going out of flower from want of a little extra stimulant.*

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

East Kent.—Hobday's "Cottage Gardening," price 2s. 9d., to be obtained from this office, would suit you. Write to the publisher.——*Maccleland.*—The Rev. Foster Melliar's "The Book of the Rose" is about the best and most recent publication, and "Rose Growing," by D. Gilmour, 1s., is a cheap book for the mass of information contained. Get them through any good publisher. You should have the last edition of Dean Hole's "Book about Roses."

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*J. Hewitt.*—1, Hart's-tongue Fern (Scolopendrium vulgare); 2, Doodia lunulata; 4, Pteris, but please send fertile frond; 6, Nephrodium nobile; 7, Selaginella japonica; 8 and 9, Forms of Lady Fern (Athyrium Filix-fœmina); other specimens none too good. Those not named we should like to see fertile fronds of.——*E. B. N.*—The flowers are Babianas, and it would be safer to lift the bulbs, as they are not very hardy. ——*H. Bakewell.*—Maiden-hair-tree (Salisburia adiantifolia) ——*Constant Reader, Sevenoaks.*—1, Cyperus alternifolius; 2, Abutilon var.; 3, Clerodendron Balfouri; 5, Pteris serrulata cristata; 6, Adiantum concinnum.—— *Calcutta.*—Peach-leaved Bellflower (Campanula persicifolia).——*A. M. C.*—Viper's Bugloss (Echium vulgare).—— *G. Falconer.*—1, Eupatorium Weinmannianum; 2, E riparium; 3, Alonsoa incisifolia; 4, Diplacus glutinosus; 5, Gazania splendens; 6, Cuphea platycentra; 7, Sedum Sieboldi variegatum; 8, Centranthus ruber.——*New Reader, Cork.*—The name of the plant is Megasea, or Saxifraga cordifolia. You will see a note upon and illustration of the Dictamnus in the present issue.——*New Beginner.* —1, Asplenium bulbiferum; 2, Retinospora pisifera aurea; 3, White Azalea Fielder's White; 4, Rhododendron Rosy Gem.——*K. V. W.*—Anchusa sempervirens.——*T. Shortlands.*—Alyssum montanum; perennial, requiring full sun.——*C. W. Kitson.*—Your specimens are not very good. 1, Bladder Senna (Colutea arborescens); 2, Please send flower; 3, Probably a Smilax, but too dead to ascertain for certain.——*P. L.*—1, Aspidistra lurida variegata; 2, Primula obconica; 3, Areca rubra; 4, India-rubber-plant (Ficus elastica); 5, Aspidistra lurida (green form).—— *A. W. Shilling.*—Justicia carnea.——*M. B., Colwall.*— Abutilon vexillarium.——*Mrs. O. S., Hilldene.*—1, Marie Baumann; 2, Probably La Reine; 3, Reine Marie Henriette; 4, Quite withered; 5, Too shattered to recognise; 6, Gloire de Dijon.——*Ethel M. Webber.*—1 (Tea), Anna Ollivier; 2 (Tea), Perle des Jardins; 3 (Noisette), Céline Forestier; 4 (Noisette), Rêve d'Or; 5 (Noisette), Triomphe de Rennes. Your names were indeed very much mixed, but through your sending a bud and bloom of each we are able to say the above are correct. We wish others would send specimen blooms in both stages.——*C. A. S. M.*—The name of your Rose is Blairi No. 2.

BEES.

MAKING ARTIFICIAL SWARMS.

In hot seasons Bees will frequently hang in a cluster from the mouth of the hive for a long time before swarming takes place, spending some of the most valuable time for honey gathering in idleness, waiting till the queen is ready to go forth with them to form a new colony. Again, a stock is sometimes about to throw out a swarm when, a change in the weather taking place, the swarming has to be delayed, and, possibly, no swarming takes place that season. Where artificial swarming is performed, much valuable time is saved, and the most made of the honey season. If the Bees to be artificially swarmed are in a bar-frame hive, the hive should be first moved to a fresh stand, and an empty hive placed on the old stand. A little smoke having been puffed into the full hive the frames are lifted one by one and the queen searched for; the comb on which she is found is removed with the Bees and the queen clinging to it, and placed in the new hive on the old stand, with as many more frames of brood combs as can be spared. The gap made in the old hive is closed up by drawing the frames together and moving the division-boards, while the new hive is furnished with a few frames of comb-foundation. The old hive being on a fresh stand causes many of the flying Bees to join the artificial swarm, now on the old stand, and add to its strength. In making a swarm from a straw skep, it is turned bottom upwards, after having had some smoke injected, and an empty skep placed over it and fixed up, by means of skewers, like an open lid; upon the sides of the lower skep being smartly rapped with the open hands or a stick, the Bees become alarmed and run up into the empty skep. A sharp look-out has to be kept to see that the queen goes up with the throng, and that a sufficient number of Bees are left in the old skep to cover the brood combs. The two skeps are then placed at equal distances (about 3 feet) to the right and left of the old stand to receive an equal number of the Bees returning from the fields. In cool weather, and when honey is not plentiful, the Bees will ascend much more readily if a small quantity of warm, thin syrup be poured over the combs. If this be done about a quarter-of-an-hour before performing the operation the Bees will be found in good order for driving. Should there be no queens in embryo when the swarm is taken from the old hive the Bees will convert worker brood into queens. They will select a worker grub under three days from the egg, remove the grubs occupying the two adjoining cells, take away the walls which separate these cells, and construct a queen cell around the selected grub, and feed it upon a superior food to that with which worker grubs are fed. It is in two or three days sealed over in its cell, and at the end of fourteen days from the time that the egg was laid the grub, which under ordinary treatment would have become a plain worker Bee, now comes forth a perfect queen.

S. S. G.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Green Peas, to preserve for winter use (*Mrs. Philip Hoare*).—Carefully shell the Peas into as many bottles as you wish, rejecting all that are in the least discoloured, keeping to as near the same size as possible; fill the bottles, shaking them down as close as they will go—of course, not pressing them at all with anything, as they must not be bruised or damaged in any way. Pound some common salt as fine as possible, and mix 1 oz of finely-powdered salt with ¼ oz. of soda, well pounded. Mix these two well together, and in each bottle put as much of the mixture as will fill up the necks of the bottles. Give them one shake to let a little of the salt go down among the Peas. Cover as quickly as you can with wet bladder, which must not, of course, touch the salt. Care, too, must be taken that the Peas are as dry as they

can possibly be. Let the bottles stand, just as you leave them when covered with the wet bladder, until they are as dry as possible; put them carefully away in a dry and dark place. When wanted for use, boil them in the usual way in boiling water, with salt, soda, and a generous lump of butter, just shaking off the salt and soda they are preserved in.—B.

Cooking Asparagus.—A well-known and successful exhibitor of fine vegetables mentioned to me the other day that Asparagus was rarely properly cooked when sent to table because of the practice of submerging the whole of the stems in water, thus treating green tops and blanched bases alike. The proper way is to cook it erect, covering the blanched stem with water and leaving the green tender tips to be cooked by the steam. In that way it was found that the entire stem was completely done at the same time. How commonly it is the case that whilst the tops are boiled to death the bases of the stems are hard and woody. It seems to be all a question of cooking.—A. D.

Preserving vegetables.—Would you kindly inform me of an easy method to preserve vegetables, such as Peas, Beans, and Asparagus heads for winter use?—C. Glamis.

POULTRY.

Embden Geese (*Gilbran*).—These birds, when fully grown, should be a pure white throughout. I should not condemn a bird of any kind belonging to a white breed until its plumage was complete, unless there is sufficient evidence forthcoming to place the issue beyond a doubt. All white-feathered birds are apt to sport a little, hence the necessity for exercising patience. At the same time, it is right to remark that many sellers of eggs send out articles which are not up to the standard, and it is possible that some day a disappointed purchaser will take the matter up in the law courts. One does not like to prevent any poultry-keeper, however humble his social position, from disposing of his wares to the best advantage, but the fact remains that a large number of egg-sellers undertake this work without possessing any knowledge of breeding, and too often their accommodation is utterly inadequate for the production of high-class poultry.—Doulting.

Vermin in Fowl-house (*R.*)—First have the hen-house thoroughly cleaned out, and then give every part a free washing with strong carbolic soap-suds. Next have all the joints in the walls and other broken places pointed or filled up with cement or mortar. Give two dressings of whitewash on ceilings and walls, and when the parts are dry litter the house 6 inches or 8 inches thick with fine ashes. Frequently replace the ashes and see that the hens get proper dust-baths and the Fowls will not again be troubled with vermin. We do not, however, approve of hens sitting in henhouses; it is far better to set them under boxes outside.

BIRDS.

Treatment of Doves (*A. M. P.*).—The White Java Dove is quite hardy, will do well in a garden aviary all the year round, and breed freely out-of-doors. Feed your birds upon White Millet, Dari, and Canary-seed. A small quantity of Hemp may be given now and then, and a liberal supply of coarse grit-sand should be strewn upon the floor of the cage or aviary. A piece of rock-salt for the birds to peck at will tend to keep them in health, and an unfailing supply of fresh drinking-water must not be forgotten. The old birds will feed the young upon the seeds above mentioned. The nests these birds construct are very slight affairs, but Heather-sprays form the best material for their construction. You must, if possible, devise some means to prevent the bird scratching the sore places round its eyes, and anoint with vaseline by means of a camel-hair-brush or feather.

Sparrows in the garden.—There is a belief among gardeners, in which mine shares, that Sparrows are purely maleficent in a garden. I cannot defend them in the matter of Early Peas or the hearts of young Carnations; but even here a little garden-netting is generally proof against their incursions. Nor can I deny that my rain-water pipes are generally blocked by their nests and the corpses of their dead. But let us give the Sparrow his due. I have just been watching for more than ten minutes three small Sparrows carefully cleaning the shoots of a Crimson Rambler (which covers the railings of my balcony) of green-fly, to which pest, as is well known, this Rose is particularly subject. They worked all up and down the plant, with many tumblings and balancing and a great deal of flutter, for the Sparrow is not light and cannot cling to slender shoots as a tit does; but they did their work in a most thorough and business-like manner. I feel bound to say this good word for them, for their character is not above reproach in the gardening world, and my own gardener, an otherwise kind-hearted man, thinks no fate too black for them.—Howard O. Sturgis, *Queen's Acre, Windsor.*

LAW.

Non-liability of a landlord to repair premises let to a tenant.—Six years ago next January, the lease for a term of ten years (six years then unexpired) of a dwelling house, some glass-houses, and 12 acres of garden and Grass-land, at the yearly rental of £90, was transferred to me. I have lately had some trouble to get the landlord to repair the glass in the greenhouses and to replace the tiles on the dwelling-house, which have been displaced by the wind. A quarter's rent is due on July 1st. Shall I be acting within my legal right if I refuse to pay that rent until the places referred to have been put into proper repair? The property is in Chancery.—Perplexed.

*** A landlord is not bound to do any repairs to premises he has let to a tenant, unless he has entered into some contract or covenant to do such repairs. You do not say whether the lease is silent on the subject of repairs, but unless it contains a covenant by the landlord to do such repairs as those you mention he is not liable. And even if it does contain a covenant by him to do the very repairs you mention, you cannot withhold the rent on that account. You must pay the rent when it is due, or he may sue you or distrain for it, but you may sue him for breach of covenant and you will have no difficulty in recovering damages; or you may do the repairs yourself, and deduct the cost from your next payment of rent to him. But, unless the landlord is liable by the terms of the lease, you cannot deduct the cost of repairs, no matter how much you may spend in repairing.—K. C. T.

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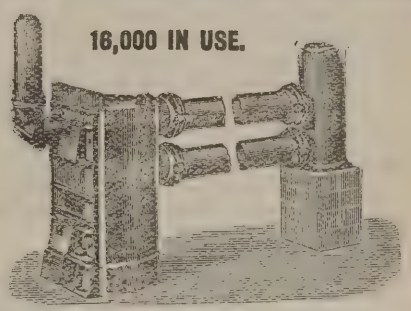

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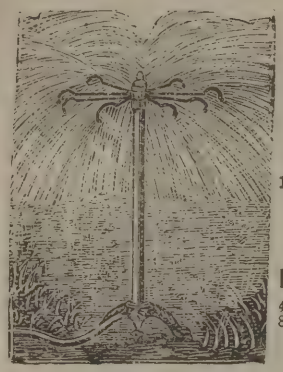

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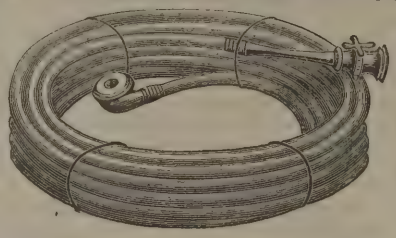

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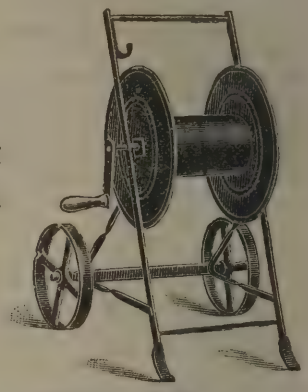

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GARDEN AND PLANT PHOTOGRAPHS, 1897.

THE EDITOR of THE GARDEN and GARDENING ILLUSTRATED announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—COUNTRY HOUSES AND FLOWER GARDENS.—A prize of TEN GUINEAS, and a SECOND PRIZE OF FIVE GUINEAS, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—FLOWERING PLANTS.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—BORDERS, GROUPS OF HARDY PLANTS, FERNERIES, ROCK AND WATER GARDENS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF THREE GUINEAS for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—LAWNS, OLD ORCHARDS, WILD GARDENS, GRASS WALKS, AND PICTURESQUE DRIVES.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS for the best ten most varied and distinct views of lawns and lawn trees; evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF £2 10s. for the best collection of not less than twelve photographs of garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—BEST VEGETABLES.—A prize of FIVE GUINEAS and a SECOND PRIZE OF TWO GUINEAS for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—CUT FLOWERS, TABLE DECORATIONS, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—VASES, FOUNTAINS, GARDEN HOUSES, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until the last day in October, 1897.

WHAT TO AVOID.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

FIRST.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

SECOND.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

THIRD.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

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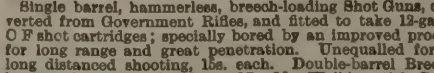

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GARDENING ILLUSTRATED.

No. 958.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JULY 17, 1897.

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ROSES.

ROSES IN TOWN GARDENS.

NOTES FROM THE NATIONAL ROSE SOCIETY'S SHOW.

WITH the advance of horticulture generally, we find these popular flowers more used in town and suburban gardens, and deservedly so; for do we not see a Rose in almost every small plot of ground in front of the houses around Beckenham, Lewisham, Croydon, and similar suburbs? Now, as so much depends upon the selection of varieties, and also because I wish to give undeniable proofs that Roses can be grown successfully in such apparently unpromising districts, I am naming those varieties which proved to be in winning form at the Crystal Palace Show of the National Rose Society on Friday, July 3.

Mr. G. W. Cook, residing at North Finchley, with his few plants won against all comers for six varieties, three blooms of each. He staged La France, Captain Hayward, Mrs. John Laing, Ulrich Brunner, K. A. Victoria, and General Jacqueminot. In another class, and this also open, he was successful against seventeen competitors, the winning variety being Mrs. John Laing; while he also won the piece of plate offered for six distinct varieties, to be grown within 8 miles of Charing-cross. In this instance the varieties were Mrs. J. Laing, Captain Hayward, Caroline Testout, Comtesse d'Oxford, Duke of Wellington, and La France. I have seldom seen a better box than this. It is interesting to know that no less than eight competed in this class, the second prize coming from Archway-road, North London, and the third from Muswell-hill. This is surely proof that Roses can be grown in and near to towns. I would select the following varieties for such a purpose:—

HYBRID PERPETUALS.—A. K. Williams, Captain Hayward, Charles Lefebvre, Countess of Oxford, Duke of Connaught, Duke of Edinburgh, Dupuy Jamain, General Jacqueminot, Gabriel Luizet, Marie Verdier, Merveille de Lyon, Mrs. J. Laing, Mrs. R. G. Sharman-Crawford, Prince C. de Rohan, Suzanne M. Rodocanachi, Ulrich Brunner, and Victor Hugo.

HYBRID TEAS.—Marjorie, Mrs. W. J. Grant, Augustine Guinoisseau, Caroline Testout, La France, Gustave Regis, Marquis of Salisbury, Marquise Litta, and Viscountess Folkestone.

TEAS AND NOISETTES.—Anna Ollivier, Caroline Kuster, Corinna, Medea, Dr. Grill, Francisca Krüger, Homer, E. Gifford, Madame Hoste, Madame Lambard, Marie Van Houtte, Safrano, Rubens, Souvenir de S. A. Prince, and The Bride.

CHINAS.—Mrs. Bosanquet, Old Blush, and Duke of York.

MOSSES.—Crested Baron de Wassenaër, Madame E. Ory, Perpetual Moss, Blanche Moreau, and White Bath.

SINGLE ROSES—Paul's White, Carmine Pillar, Rosa moschata nivea, Lucida plena, Hebe's Lip, and the whole of the Hybrid Sweet Briers and Rosa rugosa.

CLIMBERS.—Gloire de Dijon, Aimée Vibert, L'Idéal, W. A. Richardson, Madame Chauvry, Clair Jacquier, Crimson Rambler, Félicité-Perpétué, Leopoldine d'Orleans, Madame A. Carrière, Reine Olga de Wurtemberg, Blairi, Cheshunt Hybrid, and Rêve d'Or.

All of these I have frequently seen doing almost as well as when grown in the purer country air; but to attempt such habited varieties as Ma Capucine, the Fairy Roses, Laurette Messimy, and others of like growth, is only courting disappointment and failure. The main things are to keep the plants clean from dust and insect pests, and to afford them that little attention any lover of flowers is sure to give to his special favourites. If North Finchley, Muswell-hill, and North Highgate can grow Roses well, it is clear there is no reason why others should not succeed also. P. U.

POLYANTHA ROSES.

IT is not surprising that these charming miniature Roses have become so popular when we consider the many uses to which they are adapted. For massing there are very few Roses to equal them. They are compact in growth, dwarf, and exceedingly free flowering and perpetual. They make splendid edging plants for the Rose beds or borders, for they can be kept as dwarf as we wish them. Oftimes we have small borders in front of greenhouses, etc., or we may desire a low hedge of Roses; we should find these Polyantha varieties admirably suited to plant in these positions. Grown in the form of short standards they make pretty objects for the centre of a bed. They are equally valuable for conservatory decoration; the profusion of flowers and their lasting character make them a very welcome addition in midwinter. Often as many as fifty buds and blossoms can be counted on one panicle, but the average number would be about twenty. If cultivated in 5-inch pots these lovely Roses would make pretty table plants, or for putting into window-boxes. In fact, these Polyantha Roses in the hands of a skilful gardener could be utilised in a variety of ways. There are now in the market numerous varieties, but only good, bright colours should be tolerated, as there is no room nowadays for dull, uninteresting Roses, and on no account must the size of the flowers be increased, for their main charm is centred in their Liliputian character. Already we have white, cream, orange, and pink; therefore, if a bright crimson like Crimson Rambler, but dwarf, could be obtained, and perhaps a rich maroon, we should have all that we could possibly require. I would recommend that they should be cultivated either on the seedling Brier or on their own roots, and a light, well-drained soil suits them best. I give below a list of the best varieties, placed in order of merit. Those of a climbing nature I have not included.

PERLE D'OR.—Deep yellow with orange centre. Very beautiful double buds. Makes a fine pot plant.

GLOIRE DES POLYANTHA.—Deep rose with white centre. An exceedingly abundant bloomer, and certainly one of the best.

ANNA MARIE DE MONTRAVEL.—Pure white, very small and full, extremely showy and free.

MADAME E. A. NOLTE.—Buds of a clear apricot colour, expanded flowers almost white. A beautiful variety, the buds and expanded flowers contrasting splendidly.

BLANCHE REBATEL.—The deepest colour yet obtained. The flowers are of a deep magenta, and produced in great numbers on each panicle.

CECILE BRUNNER.—Rosy-flesh. The buds of exquisite beauty, perfectly moulded.

ETOILE D'OR.—Pale chrome-yellow, very beautiful, but not very vigorous.

PAQUERETTE.—Pure white, very small, produced in immense panicles.

MIGNONETTE.—Soft rose shaded white, small, very lovely. Free bloomer and good grower.

GOLDEN FAIRY.—Buff-straw, shading to pale straw. A good variety of free habit.

CLOTHILDE SOUPERT.—This cannot be omitted, although it is large for this class. The shape of the flower is its great point. This can be only described as perfect. The colour is a beautiful rosy-white, and it makes a charming pot plant.

GEORGES PERNET.—Yellow and peach colour, rather large, but very freely produced. S.

Climbing Roses on an iron fence.—For three years I have been vainly trying to grow climbing Roses on an iron fence covered with wire-netting. The plants make good growth, sending out strong shoots in the summer, but the following spring I find them brown and decayed where they touch the wire, and am compelled to cut them back. Is it the wire that poisons them? If so, what can I substitute for it? The iron railings must remain, as I cannot have a heavy fence next to the road and in front of my house. There is a low stone coping, and the railings (horizontal) on the top. I am anxious to have the fence pretty in the summer.—HERON.

*** We have grown Roses upon just such a fence as you describe, and with every success. The greatest harm I have found was from the chafing of growth against the wires and iron. During a very severe winter, and also during a severe electric disturbance, Roses and other plants are sometimes injured when in contact with any metals. As your fence is on top of a low wall, and you do not appear to want a high screen, why not do away with the wire-netting entirely? Such Roses as Aimée Vibert, W. Allen Richardson, Reine Marie Henriette, and others are seldom seen in prettier form than when their long rods are trained along a low fence in much the same way as cordon fruit-trees. Many instances have come under my notice this season where these Roses were so trained, and in some cases the resulting hedge, or bordering by a path, was no more than 18 inches to 24 inches in height. Of course, you could have your hedge 3 feet to 4 feet high if desired, and I would certainly try this plan, discarding the galvanised wire-netting.—P. U.

Roses with "green heart" disease *(Sigma)*.—It was quite impossible to name your Rose, simply because you packed in a quantity of dry cotton-wool. This absorbs all moisture so quickly that the Rose and foliage

were as dry as tinder when received. Please send again, and pack in a moist leaf of Spinach or similar foliage, first of all leaving the Rose in water for an hour or so. You cannot remedy the green centre in your Rose-buds. Some of the more double varieties are much troubled with this defect, more especially during seasons of such changeable temperatures as we have experienced up to the present. We will reply respecting pruning when we see and can recognise the other Rose, to be sent.

Baroness Rothschild Rose-buds turning yellow.—The enclosed shoot is from a Baroness Rothschild. Last spring it flowered well. I plunged the pot in June outside, and the second crop of buds turned yellow and dropped off. It was brought into the greenhouse in November, pruned in January, and now the buds have turned yellow and dropped again. Have looked at the roots, but they are all right. Can you tell me what I ought to do? With thanks for your paper.—Rose.

*** The buds, directly they formed, may have been eaten by the Rose-maggot. If this is not so the cultural conditions are at fault. Has the soil been too dry at any time or the reverse? Have you given stimulants freely?

Rose Mme. Pernet-Ducher.—Of all the lovely button-hole and garden Roses, this one stands out prominently as one of the best. The colour of the beautifully-formed buds is a rich cream, edged with pale lemon. The expanded flowers, which are only semi-double, are almost white. Each shoot is crowned with from ten to twelve buds and open flowers, which are produced on stiff stems, making this Rose an ideal variety for massing. It is of good vigorous growth.

Rose Marechal Niel.—For some weeks past I have been cutting fine flowers from a young tree I bought 12 months ago, and a fresh supply of buds is appearing on each shoot. The plant is in a 10-inch pot, and syringed daily with tepid water. The surface of the pot is packed with thick Moss, and this is lifted when liquid-manure is applied.—W. H. L.

Roses in Cumberland.—I fear the prospects of my varied collection are miserable, but the following are particularly good: Gloire de Dijon, Reine Henriette, White Bath Moss, La France, and a few others. That second late spell of frosts and subsequent N. E. winds of consecutive days spoiled the shoots. My finest specimen, W. H. Richardson, on a south wall, with its roots close to the greenhouse boiler, is now a fine sight, every shoot with large showy blooms, though have disbudded it largely to gain good quality.—W. H. L.

Rose Stanwell Perpetual.—This is a grand old perpetual Scotch Rose. The foliage resembles that of the Scotch Roses, and here the relation ends, for the flowers are quite as large as those of the Souvenir de la Malmaison, although not nearly so double. The colour is a lovely shell-pink when opening, resembling that of the Maiden's Blush, and the expanded flowers are almost white. If we could but obtain crimsons and yellows of this type of Rose, how fortunate we should be. It should be freely planted in shrubberies facing south, along carriage drives or on rock gardens.

Rose Mme. Moreau.—This variety is of climbing habit, and is something in the way of Mme. Bérard, but quite distinct from that fine variety. Its colour on the inner side of petals is a deep coppery-yellow, but reflexed with a lovely rosy-salmon and apricot, whilst the edges of the petals are of a golden-yellow. The bud is most beautiful and well suited for buttonholes, and the foliage is of a glossy green, and the wood of the reddish colour of Mme. Bérard. As a standard it is very fine.

Rose Homere.—This very useful kind is seen in most gardens, and highly prized for covering low walls and as a bush in favourable places. Many people are charmed with it for cutting from for button-holes, etc.

Rose Belle Lyonnaise.—This is an old favourite, and belongs to the now numerous Dijon group. Its large sulphur-yellow flowers, deepening in the centre to rich lemon, are of fine shape; the buds are also very beautiful. It makes a splendid climber on a south wall, or it repays to grow in standard form.

Rose-leaves unsatisfactory *(Sidney Tuckey).*—You are not feeding your Rose-tree sufficiently, or the leaves would not be so yellow and starved in appearance as those sent. It is probably one of the Rose grubs or maggots that is eating your foliage, but which we cannot say without seeing the insect.

THE KITCHEN GARDEN.

SEASONABLE SEED-SOWING.

A Time Table.

We give a brief time table for autumn sowing of seeds in response to many of our correspondents, who found our spring time table of great assistance. We would point out that so much depends on dates, on soils, and localities it is only fair to add these must be considered. For the north it is necessary to sow a little earlier, and for the south later. Again, in cold, clayey soils a good plant is more needed than in rich or warm soils. We give a margin in our dates, as this will allow of the above points being taken into account. Another important factor is planting. It is useless to sow good seed if there is undue delay in planting. Take Spring Cabbage as an example, which often fails because the cultivator cannot get plants established before the dark, short winter days; the result being that they are cut down by severe frost, or by too much rain. They bolt in the spring, and the crop is lost. Lettuce, if sown during August, gives a full crop in spring, and Cauliflowers are invaluable to follow the Broccoli, if sown from the 10th to the 20th of August. We will give another time table early in the season for spring and summer supplies.

When to sow.	*Variety to sow.*	*When ready.*
July 10 to 25	CABBAGE—	
	Ellam's Dwarf Early	April
	Favourite	March
	Gem	March
	Earliest of All	April
July to Aug.	Rosette Colewort	October
	Hardy Green Colewort	November
July 1, 6, 15	Christmas Drumhead	Dec. to March
	St. John's Day	Christmas to March
July to Aug.	CARROTS—	
	Early Nantes	Dec. to March
	Short Horn	Dec. to April
July 15 to 30	ENDIVES—	
August	Green Curled	Sept. to Oct.
September	Round-leaved Batavian	Oct. to March
July to March	Cress and Mustard	Aug. to March
July	Corn Salad	Nov. to Dec.
August	CUCUMBER (winter)—	
	Syon House	Oct. to March
December	Tender and True	Feb. to April
July 10 to 20	LETTUCE—	
	Golden Queen	Sept. & Oct.
Aug. 10 to 25	Hammersmith, Hardy	March & April
	Scanstead Park	April
	Bath Cos	May
	Hardy Green Cos	May
Sept. to April	MUSHROOM-BEDS—	
	Under cover	Oct. to June
Aug. 1 to 20	ONIONS—	
	Tripoli, Giant Rocca	April
	White Spanish	May
	Giant Zittau	June
July	PARSLEY for spring—	May to Oct.
	Myatt's Garnishing or Curled	
July to Aug.	RADISH—	
	Chinese Rose	Oct. to March
	Black Spanish	
July & Aug.	SPINACH—	
	Victoria Improved Round	Oct. to April
	Long Standing	Oct. to May
July & Aug.	TURNIP—	
	Red Globe	October
	Orange Jelly	December
	Chirk Castle	March
December	PEAS in pots in cold-frames—	
	Chelsea Gem	May
	Gradus	June
	Early Morn	June
Dec. to April	FRENCH BEANS in pots—	
	Syon House	Feb. to. May
	Ne Plus Ultra	
	Early Favourite	

Shallots.—These well-flavoured bulbs have made such good use of the time since planted in January on light soil, that they are fast being pulled and dried preparatory to storing. In selecting for future planting it is well to put aside a few clusters of the very best bulbs, because these reproduce the best stocks. It may seem a small matter, but those who like the best varieties of these things should take note. Even with rooting Potatoes, sets selected for their good form, and from the very best cropping roots, always give the best results the following season. Those who exhibit Shallots at their local exhibitions will do well also to put aside a few of the best clumps or clusters when pulling, as these will, if separated, give the handsomest single bulbs, or if thereon in clusters of say a dozen, which is the best way, then they can be kept so much brighter by turning each one and putting it into soft paper to prevent abrasion until exhibited.—D.

THE GLOBE ARTICHOKE.

This is valuable and wholesome, and can be with care obtained in good condition for at least six months in succession, and is, therefore, worthy of far more extended culture than it enjoys in this country. Commencing with the old-established plants that should have been well protected during the winter, these will afford the first supply of heads in May and June; and then for the next two months heads may be had from a planting of strong suckers made in March; and from the end of summer and in autumn from a successional planting made in May. Another very good plan is to cut back close to the earth's surface, a few old plants early in spring, and occasionally afterwards. These will produce a thicket of shoots, which should be thinned early, by pulling and cutting out the weakest, and allowing only a portion of the strongest suckers to remain. These will produce in succession nice young heads. This Artichoke, if cut when about half grown, possesses a very pleasant flavour, and is a very delicate vegetable, almost the whole of which is eatable if properly cooked; but if the heads are allowed to attain to their full size, or nearly so, before cutting, they are not so fine in flavour, and have lost most of their tenderness, so that then only the base of each scale and the base of the head are fit to eat. The Globe Artichoke will grow very luxuriantly in rich, boggy land in summer, and it is not at all a bad-looking plant in borders and wild gardens, with its noble foliage of a kind of bluish-green, and with its large heads of flowers of a Borage-like blue colour; but it will not stand our winter in wet quarters. As a kitchen-garden plant, it will grow in any kind of soil if well manured, trenched, and pulverised; but no soil suits it better than a good, open, sandy rich loam, trenched and well manured. The plant is at its best at the second and third year after planting. Plantations of this Artichoke may be seen in some places standing in a half-starved state for years, producing only nasty, little, hard and bitter heads. This is why, to a great extent, no doubt, the Globe Artichoke is not so generally appreciated as it should be. These Artichokes are best for the table when cut at about half growth, when they have attained to their delicate and slightly bitter flavour. Get a clear, open piece of good soil, well manured, deeply trenched up into rough ridges for a time to get well pulverised, sweetened by atmospheric influences, and free from trees. Plant it methodically—the first batch in March, and for succession another planting in May—and afterwards keep thoroughly clean and an open, free surface maintained by frequent hoeing and scarifying of the ground about them. A dozen stools will produce as many fine rich heads as double the quantity will do by the old-fashioned crowded and neglectful system of planting. To plant properly make choice in early spring of good strong suckers, taking off the shoots carefully with a sharp, strong paddle-trowel or Asparagus knife, with some root to them or heel of the old stock to hold them in the ground. Plant them singly 2 feet apart in rows at least 4 feet apart, or in groups of three in triangles, and at 4 feet apart in the row. Protect them as soon as planted against the sun and cutting winds with the Sea-kale pots without the lids, or with evergreen boughs or some other convenient protecting material. Those thus early planted will produce nice fresh crisp heads the same summer and autumn. If the stems also are cut close to the ground, as soon as the heads are cut new suckers will soon appear, and these, if duly thinned, will produce a late crop of heads. Thus, by treating this Artichoke systematically, with a little method and forethought, a good supply of nice heads may be obtained in succession from May until October. This plan is much better than that of growing a large piece of

Artichokes and allowing them to come in in June and July, and at one and the same time by the hundredweight when Peas, Cauliflowers, French Beans, Asparagus, Spinach, and a host of other of our most useful vegetables are in full season, and then when the spring and summer vegetables are getting more scarce there are no Artichokes to succeed them. To say the least, this shows a lack of forethought not to have them in full succession all the summer without having a great glut of them all at once, and when only a few are really required.

B.

OUTDOOR PLANTS.

A MIXED BORDER.

Happy effects can, as we see here, be easily obtained by the grouping of masses of hardy plants in the border. Here the *pièce de résistance* is formed by the old-fashioned Sweet William (Dianthus barbatus), backed by Irises, Day Lilies, and such-like. The iron gate, shrouded by its heavy canopy of Ivy, giving a peep through its bars of a further vista, forms a charming background to the fair flowers. Many are the subjects suitable to such borders. The old, sweet-smelling Double Rocket, Pinks, and Carnations; the pure Madonna Lilies (L. candidum), Orange Lilies (L. croceum), Tiger Lilies (L. tigrinum), and the Scarlet Turk's-cap (L.

A mixed border at Winchester. From a photograph by Miss Acton.

chalcedonicum); tall Delphiniums, Campanulas of sorts—of which C. persicifolia alba fl.-pl., the double white Peach-leaved Campanula, and C. grandis may be named—Herbaceous Phloxes of distinct colours, Montbretias, Irises, especially the German Flags, of which flavescens, yellow; pallida, lavender; Florentina, lavender-white; atro-purpurea, dark purple; and Princess of Wales, pure white, are fine self-coloured varieties; Hybrid Alstrœmerias, Michaelmas Daisies, ranging from 6 feet high Robert Parker to the dwarf dumosus; Perennial Sunflowers, one of the best of which is the newly-introduced Helianthus rigidus Miss Mellish; Anemones in variety, not forgetting the White Japanese Anemone, Achillea Ptarmica The Pearl; Lychnis chalcedonica, and a host of other handsome perennials, on which subject pages might be written, will find a congenial home in our herbaceous beds, and will brighten the year month by month from April to September with their blossoms.

S. W. F.

The Flame-flower.—Numerous clumps of the beautiful Scarlet Tropæolum speciosum are growing on a south wall at Dover House, Roehampton. This is rather unusual in the south of England, where it is the custom to establish it on north aspects. The fact serves to show that after all it is a much more accommodating plant than it is usually held to be. The clumps in question were planted originally but from three to four years ago, and as the growths are already from 6 feet to 7 feet in height, and blooming profusely, ample evidence is furnished that where well done roots soon become established. These root-pieces were, when planted, set into turfy loam, for which they seem to have a liking, and these obtained at once a good start. Those who cannot get roots may raise plants from seed, and in due course turn them out from pots. It is sometimes seen growing luxuriantly on a Cupressus hedge.—D.

Pentstemons.—Could amateur gardeners, or, indeed, any person with a garden, but see the fine named varieties of Pentstemons sent out by some of the Dutch growers, who seem to have the finest strains, they would certainly grow these hardy plants largely. It is an excellent feature of the Pentstemon that it seeds freely and generally reproduces its best points in that way. Hence, anyone seeding only a plant each of some half-dozen of the best varieties, may find a single spike from each plant to produce seed enough to raise hundreds to bloom the following year. Also the plants produce side-shoots freely in the autumn, and these made into neat cuttings and inserted into sandy soil in 5-inch pots and stood in a frame or greenhouse, or under a close hand-light or even in a box, over the top of which is laid a large piece of glass, will root freely during the winter months. The cuttings simply need to be kept cool, near the glass, and have as little water as can well be given during the winter. Such plants put out-of doors in May bloom finely during the summer. Colour in Pentstemon flowers varies considerably, ranging from almost pure white to deep red, or heavy purple, but the pretty pinks, carmines, reds, and scarlets seem to be the most effective. Seed, whether saved or bought, may be sown either early in September, the plants being wintered in the seed-boxes in a frame, or else quite early in the spring, under glass, without heat, and from such sowing, strong plants put out at the end of May bloom finely from August to the end of October. Good varieties have flowers of great size and fine rounded form. It is only needful to get seed of a fine strain to have the best results.—A. D.

Border Carnations.—All of these are not sufficiently stout of stem to carry their blooms erect. For that reason they are not effective in borders, although the blooms when cut and stiffened with wire do very well. A few really good, stout, free-flowering, erect varieties, growing in quantity at Dover House, are the Countess, a fine, sweet pure white; Duchess of York, pleasing flesh; Miss Audrey Campbell, yellow; Raby Castle, carmine; Brigadier, scarlet; William of Wykeham, rose; Walter Ware, purple; and, not least, the fine old Crimson Clove. When, as in this case, the varieties are seen growing naturally in large quantities, true characters are fully evidenced. The selection will please anyone. Some also growing here at least show such poor habits that they are not to be recommended on any account. Side shoots seem now to be well matured, ready for layering, and operations to that end should be commenced, and if possible completed by the end of the month of July, or at the latest early in August.—D.

NOTES FROM AN ARMAGH GARDEN.

With the last days of June quite a wealth of floral beauty has come upon us, abundant rains and bright sunshine no doubt contributing to the luxuriant growth.

Single Roses and Briers, planted for effect on trellis-work, walls, etc., have added a new charm here and there in the gardens and avenue. Rosa spinosissima maxima, with large white, thick-petalled flowers and rich golden anthers, has continued for a considerable time in bloom, Rosa gallica violacea is a strikingly handsome single Rose of the rich, deep, velvety crimson of Bardon Job. Hebe's Lip is a very pretty single Rose, white, tinted at the edges with touches of rose. Rosa macrantha, supported by a post over 6 feet high, has formed a very graceful pillar with clusters of buds and flowers of delicate pink. Rosa moschata nivea, with its large white flowers, is also in bloom, and the richly-coloured Brier Lady Penzance, with scented blooms and foliage rambling over and through a screen of lattice-work, has been a very pretty picture for some time, and very much admired. Janet's Pride, another very beautiful Sweet Brier, is growing alongside it, and is joined by, and mixed up with, the little Climbing Polyantha Rose Allister Stella Gray. This Rose is a decided acquisition. Last summer the small, beautifully-formed flowers, yellow and sweet-scented, and growing in clusters, were produced in great profusion. Paul's Carmine Pillar furnished a very brilliant and striking bit of colour in the early part of June. It is very uncommon and sure to attract attention. Among

Weigelas a very rich, deep-coloured variety named Peschal is worthy of mention; very small plants flower freely. This good quality also applies to

Philadelphus Boule d'Argent, a plant of which, not quite a foot high and fully 14 inches across, is now in bloom. The flowers are pure white, large, double, and sweetly scented; it is a very charming little shrub. Philadelphus Lemoinei and P. hybridus erectus are also in bloom; they are both beautiful white-flowered shrubs, but very similar. The dainty little Philadelphus microphyllus, however, is distinct, and in a cosy corner in a rock garden it has developed into a very robust plant, much finer than one that had protection during last winter. In a front position in a garden

Spiræa decumbens occupies an appropriate site. It has been in bloom for some time, although less than 4 inches in height, and about as many in width. It is an extremely neat little white-flowered plant.

Delphinium Nutalli, now in bloom, is by no means a showy plant, but there is a delicate beauty in the pale cream flowers, tipped with green, and with rich blue spots. Delphinium Belladonna, of exquisite shade of blue, and neat dwarf habit, makes a fine contrast.

J. McWalters.

Rudbeckia Newmani.—Dwarf, showy, and compact, and producing quantities of blossom at about 2 feet high, this is a most serviceable plant for massing in various parts of the garden. It is in some respects the most worthy member of the Coneflower family, being so perfectly hardy and free-flowering. The golden ray florets surrounding the black cone in the centre are effective, and for cutting it is always highly esteemed. Another feature of the plant is its well-furnished habit of growth, the plant spreading out into the most handsome tufts imaginable. For bedding on a large scale it is among the most desirable plants that could be named.

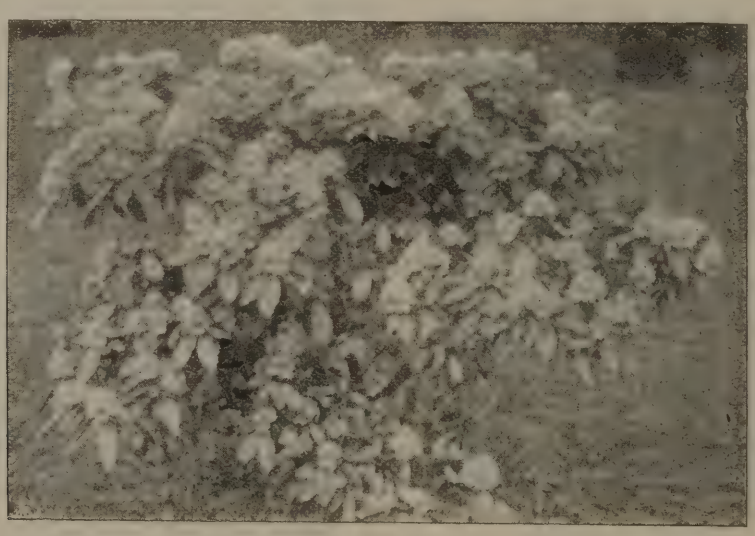
Telekia speciosa.—A very striking subject this at the present time in the large border, where its heads of golden flowers, towering well above many things, may be seen at some distance. Where only space for dwarf things exist this should not be included, as unless space is afforded for free and full development its beauty is lost. But where a group of half-a-dozen may be planted the effect is very good, and for such positions it is worth encouraging.

TREES AND SHRUBS.

HYBRID RHODODENDRONS.

The Hybrid Rhododendrons are amongst the most beautiful and enduring of evergreen flowering shrubs. In addition to their hardiness they are also useful for planting in or near towns. R. ponticum—a very fine shrub in its way—is met with almost everywhere, but how seldom do we come across really fine examples of the better, hardier, and free-flowering hybrids? There is great diversity in the colours of the flowers, which range from pure white through many shades of pink and rose to deep crimson. There is great variety, too, in the size of the blossoms, and unlike many other showy flowers, the flowering season is a fairly long one, commencing March or April and continuing until the end of June and occasionally into the early part of July. The uses to which this class of Rhododendron may be put in the garden are by no means few. They are well adapted for growing as single specimens on the outskirts of the lawn, and those of dwarf habit are very useful for planting in the front of taller-growing shrubs, while others of more vigorous growth make fine banks of colour when planted in sufficient quantity in the shrubbery border. As some of the early-flowering section respond very freely to gentle forcing they are very welcome additions to the conservatory in early spring. They are not at all particular as regards soil, so long as lime and chalk are absent. Loam, with which is incorporated a quantity of leaf-mould, is all that is required. Peat is not a necessity, but, if available, will be found useful, especially if the soil is very stiff and heavy. Good drainage is essential, as the Rhododendron abhors anything like stagnation at the roots. They thrive in almost all positions, but prefer one which is sheltered from the fierce mid-day sun and cold spring winds. For the convenience of readers we give below the names of a few of the best of the early and late-flowering varieties.

Amongst the early-flowering varieties Kate Waterer is very distinct; its bright rosy-crimson flowers are heavily blotched with yellow. Purity is very handsome; white, with a delicate yellow eye. Everestianum is one of the freest in bloom; its rosy-lilac flowers are spotted and beautifully fringed. Præcox is of dwarf habit and exceptionally free-flowering; in some cases the pretty rose-coloured blossoms completely hide the foliage; it is one of the first to flower. Verschaffelti is another first-rate variety; the colour of its flowers is tinted lilac, marked with dark purple spots. Auguste Van Geert has moderate-sized flowers, the colour being clear, rosy-purple. Fastuosum fl.-pl. is a very continuous bloomer; the flowers large, double, and of a lilac shade. Limbatum, white, edged with deep crimson. Marchioness of Lansdowne is very distinct and handsome, having pale-pink flowers with dark spots. Of the late-flowering sorts Mrs. John Clutton is very good. Its flower-trusses are large, of good form, and the individual flowers of much substance. The habit, too, is all that one desires in a good Rhododendron. The Warrior bears large trusses of clear, rose-scarlet flowers. Minnie is a very distinct variety; flowers blush-white, spotted with chocolate. John Spencer is very effective; its fine trusses of rose-coloured bloom are beautifully margined with pink. The Queen should find a place in every collection. It is a first-rate grower and very free-flowering; colour blush, changing to pure-white. Barclayanum has brilliant crimson flowers of perfect shape, borne in immense trusses. Alexander Dancer is a grand variety; flowers large, compact trusses, colour deep pink, paler in the centre. Fine for massing. Ajax.



Rhododendron in a Scottish garden. From a photograph by Mr. E. Pickering, Kerrowghtree, Newton Steward, N.B.

Plants for Devonshire garden (*Hope*).—The list of plants that naturally flower in the winter out-of-doors is a very small one. The Winter Flag (Schizostylis coccinea) often blooms well in light soils during November, and the beautiful Iris stylosa and its white variety produce their flowers freely through that and the following months. Christmas Roses are *par excellence* the open-air flower of the winter, and of these there are several varieties, of which the best for general cultivation are Helleborus altifolius, H. major (the Bath variety), H. juvernis (St. Brigid), and H. Riverstoni. The Winter Sweet (Chimonanthus fragrans) bears its fragrant flowers in mid-winter, and in South Devon succeeds as a standard, while the yellow Jasminum nudiflorum is at that season covered with its golden stars, which are especially pleasing when associated with the scarlet berries of Cotoneaster microphylla. For the rest "Hope" will have to trust to the mildness of his climate and his sheltered garden for the retention in bloom of subjects that are really summer or autumn-flowering, and for the production of spring flowers rather before their time. If the weather is favourable, Chrysanthemums should keep the garden bright during November, while in the same month flowers of Aubrietias, Sweet Alyssum, Cornflower, French Marigold, Stock, Eschscholtzia, Nicotiana affinis, Ivy-leaved Pelargoniums, Mesembryanthemum, Doronicum, Arabis, Periwinkle, Erigeron, and Geum coccineum may often be gathered in the south-west, but of these there are only a few stragglers left, which exist rather than flourish out of due season. Abutilon vexillarium, Habrothamnus, and Lapageria are often still in bloom in the open during November. In December the possible list is even shorter, but in mild winters the Winter Aconite sometimes opens its cups before the close of the year, and occasionally Narcissi of the Polyanthus section may be found in bloom. January in ordinary seasons is no better off, though in warm, frostless winters Anemones, Hepaticas, Crocus and Snowdrop, Lenten Roses, and the Winter Heliotrope will often flower in that month, while bloom may be found on shrubby Veronicas, Pyrus japonica, and the Laurustinus. In February, should the weather be fairly open, the spring-flowering plants will begin their reign. The best Palm is undoubtedly Chamærops Fortunei, which grows to large size in the south-west, flowers well, and produces fertile seed.—S. W. F.

FERNS.

FERNS FOR BASKETS.

Many Ferns thrive remarkably well planted in wire-baskets suspended from the roof of the greenhouse, stove, or indoor fernery, as the case may be. A special advantage of this plan of culture is that many Ferns are seen to much better effect in this way, and apparently are much happier than when placed in pots. By growing the drooping species of Ferns in suspended baskets, a large area of otherwise unused space may be turned to a good account, and where stage room is limited, this is a consideration not to be lost sight of. Capital baskets are those made of stout galvanised iron-wire, and these should be half globe-shaped, with three wires as arms by which to suspend them. The baskets may vary in size from 6 inches to 2 feet in diameter, the depth decreasing as the basket widens, so that a basket 2 feet across is only 1 foot deep, while those of 6 inches in width are the same in depth. A lining of thin slices of fibry peat should be placed all around on the inside of the basket, which is then filled up with a compost according to the requirements of the plants it is intended to contain. Two kinds of Ferns or a Fern and a Selaginella may be planted in each basket, the one to occupy the upper portion, the other to cover the soil and sides of the basket. If the house in which these baskets are suspended is not kept very moist it will be found safer to take down each basket once a day in the growing season and dip the whole into water. Less water will, of course, be required in winter. A stout iron rod with a hook at the top, like a butcher's hook-stick, is a useful tool for taking down the baskets. A little attention is necessary at first to the training of the growths which are to cover the sides, after which the plants may be allowed to take their own way. The following are some of the most striking Ferns and Selaginellas for the purpose in view, Davallia Mooreana for the central plant, with Selaginella flexuosa for the sides. These two graceful plants combine with the most charming effect, the pale green of the Davallia and the striking character of the spreading fronds going well with the slender growths of the Selaginella, the leaves of which are dark shining green and the stems purplish coloured. Asplenium Belangeri and Selaginella uncinata — the first a well-known Fern of great beauty, and its companion, the "blue" Selaginella, whose metallic tint and creeping, fast-growing habit render it especially useful for covering baskets, etc. Either the common Selaginella Kraussiana or the above-mentioned may be used for baskets containing plants of the following: Adiantum Farleyense, a first-rate basket plant (especially as exemplified at Chatsworth); A. gracillimum, beautiful anywhere, but particularly so when grown in a basket; A. Moorei (synonym, amabile), the best of all the Adiantums for basket work; A. Wagneri and A. caudatum, or, as it is sometimes called, A. Edgworthi. Other Adiantums, no doubt, will do well under basket treatment, especially A. longissimum, with its very long fronds; this fine Fern should find a place in all collections of basket Ferns. Polypodium appendiculatum and P. lachnopus are very desirable, and so also are Pteris scaberula, Pteris cretica, and Pteris cretica albo-lineata. That Ferns can be well grown in baskets is now abundantly evident. Of course, it may be said that almost any plant will do well in a basket suspended under glass, and given the proper amount of attention; but it is the special adaptability of Ferns for this treatment, as seen in their superior appearance, that leads me to recommend this practice for more general adoption in gardens, where suitable positions on the stages for Ferns are but limited.

H. B.

THE COREOPSIS.

This is a family of North American Composites, which includes also the Calliopsis, and is divided into annual and perennial kinds. The varieties of Coreopsis have many advantages over the general run of Composites, both on account of their hardy nature, and also on account of the striking beauty of their variously-coloured flowers. No garden, however small, should be without its own particular strain of these plants, for, as in the case of C. tinctoria, the kind cultivated to the greatest extent in gardens, they are extremely variable in colour and markings. One other advantage, and one of great importance to the small grower, is that they may be sown in the open air along with other annuals. Those

Coreopsis tinctoria.

sown in autumn bloom early in spring, and the produce of successional sowings from March until the end of April gives flowers until destroyed by frost. To succeed well they require a rich soil, and if moist rather than dry, especially in the case of those sown early in spring, all the better. Seeds ripen freely enough, and they may either be sown as soon as gathered or kept until spring, the former plan being, however, the better one. The following are some of the best, viz.:—

C. Atkinsoni is, perhaps, the most graceful species belonging to this large genus of useful garden plants. It does very well in the ordinary flower border, and seems specially well adapted for small beds, or even mixed with summer bedding plants, as it lasts a considerable time in full beauty, and supplies a bright colour not too plentiful amongst that class of plants. Successions may be had by sowing at different times, the first and second to be made in pans and placed in a heated house. The young plants should be pricked out when ready to handle and be gradually hardened off until fit for planting in the open border. It generally grows from 2 feet or 3 feet to 4 feet in height, and has a fine, graceful habit. The flowers are rarely less than 1½ inches in diameter, set off charmingly by a dark purple blotch at the base of the ray florets. It is found on river banks in Oregon, Washington, etc., and was first collected by Douglas.

C. cardaminifolia.—This species is much dwarfer in growth than C. Atkinsoni, although the general appearance of both somewhat corresponds. It grows from a span to 1½ feet in height. The flowers, which are each from 1 inch to 2 inches in diameter, are of a soft yellow hue, and extremely handsome in the dusk. It is an excellent plant for cutting from, and as it is easily raised from seed, large quantities may be readily grown for that purpose. It may also be used, in the case of Atkinsoni, for bedding, as it has a neat, compact habit. It comes from the low grounds in West Louisiana and Texas, and flowers with us in autumn.

C. aristosa.—This is also an annual, and produces large golden-yellow flowers. The stems, which grow from 1 foot to 3 feet in height, carry a large, flattish, panicled head of clear golden-yellow flowers 2 inches or more in diameter. The flowers, which are set on longish stalks, are surrounded by an involucre of eight or ten bracts. It blooms in September or October, and is plentiful in swamps in Michigan, Iowa, Missouri, etc. It may be sown with the others early in spring in the open border.

C. Drummondi.—This species (figured below) is very distinct, both in flower and leaf, from all its associates. It is best adapted for pot culture and makes an excellent plant for the greenhouse, as it flowers with the greatest profusion all through the autumn months. It rarely exceeds 2 feet in height. The flowers, which are borne in pairs or singly on long, slender stems, are over 2 inches in diameter and of a very rich golden-yellow. It is found on sandy soil in Texas, etc.

C. coronata is a dwarf species common in gardens, where it is generally very effective, especially when placed near the front of mixed borders. It is very free-flowering and continues a considerable time in perfection. It grows from 1 foot to 2 feet in height, is sometimes quite hairy, and at others free from hairs, the stems being shiny. The flowers, which are bright yellow, each measure from 2 inches to 3 inches in diameter, the outer edge of the rays being prettily notched, and with brown or purple lines or spots towards the base. It flowers late in summer and autumn, and is a native of E. Texas.

C. tinctoria.—This is, perhaps, the most variable of all the Tickseeds, having given rise to various named garden forms, amongst which are C. bicolor and C. bicolor nana. The latter

Coreopsis Drummondi.

is very dwarf, and could, no doubt, be utilised in many ways as a decorative plant. C. tinctoria grows from 2 feet to 3 feet in height. The flowers are rarely less than 2 inches in diameter, purple or varied, and very showy. They are

A perennial Coreopsis (C. auriculata).

produced in summer. This species comes from low ground in Texas and Arizona.

Perennials.

C. lanceolata and the variety grandiflora are the finest of perennials, both being very beautiful garden plants. C. lanceolata, beautiful though this be, is eclipsed by the greater splendour of C. grandiflora, which is a flower for every garden. From June until quite the autumn its bright flowers appear, and one can gather many handfuls of bloom for the house. Arranged simply in a tall vase their beauty is well displayed. It should be treated as a biennial, as it is so free-flowering that it is apt to disappear simply through distress at such a strain upon its constitution. The plant is readily raised from seed, and seedlings should be planted out in the autumn where they are to bloom. It is quite hardy.

ALLOTMENT TOOL-SHEDS.

A very unusual class in a schedule of prizes was one found in that issued by the Richmond Corporation Allotment Holders' Association. There are on their extensive and admirable allotments—two hundred in number—many small sheds, shanties, huts, or tool-houses erected for shelter and to lock up tools, baskets, etc., in. But the majority are far from being decorative, and rather resemble such a hut or shelter as is often found in our streets for the night watchman when drainage is in progress. It occurred to Mr. E. J. Holney, Chairman of the Surrey County Council, who has from the first taken great interest in these allotments, that the structures erected on them were by no means ornamental, and especially that, being close to the railway, he wished to see some tool-sheds that did combine a little of beauty with usefulness. For that reason he offers a prize of twenty shillings this year for the best tool-house, neatest in design, etc., but with special

reference to external appearance. This prize was supplemented by a member of the Richmond Corporation, Councillor Ratcliff, who gave another twenty shillings in three lesser prizes. The judging was left to the County Council horticultural instructors, with Mr. Ratcliff, and the result was that a very neat little span greenhouse, 7 feet by 4 feet, now occupied with Tomato-plants, the tools being placed beneath the shelves and the door securely locked, was placed first. There were no attempts to decorate the house externally, although some Roses or dwarf climbers round the lower portion would have materially helped. The owner is a carpenter, who does his plot well, and he erected the little house himself. The second prize was given to a rather smaller glasshouse, but of a cruder nature, span-roofed, and the shelter within filled with flowering plants in pots, capitally grown, and very decorative. The tools were arranged within in high order, and with exceeding neatness. Here, again, there was no attempt at external decoration, but the building was not at all unsightly. This was erected by the owner of the plot, an old man, and the corporation beadle, whose garden also was admirable. These were the only two structures of this nature, and the judges were guided in their decision, not only by the fact that such glasshouses could be made so useful in spring and summer seasons for many purposes, but also that because, being of glass and neat, they would look unobjectionable all the year round. They also gave shelter, if needed, at any time from heavy rains. A few sheds, all of wood, were inspected. Some of these were very rough structures, and although efforts had been made with boxes, etc., to dress them somewhat with plants now, they would be very unsightly objects during the winter. One very neat sloping hut, having a glass front with some lattice-work over it, and a stout lock-up box within for holding tools and forming a neat, quite a neat though entirely undecorated object, was placed third. This was erected by a carpenter, the allotment-holder; and the fourth, rather smaller and low, very neat, yet unpretentious, erected by a bricklayer, was placed fourth. It is hoped that the prizes, if continued, may stimulate to the erection of more tasteful tool-houses. Even some of the crude ones now on the ground might be readily beautified by covering with lattice-work, painted green, and training over them some suitable climbers. There are plots splendidly cropped and kept and having delightful flower borders, yet the tool-houses are almost hideous-looking objects. A. D.

Hippeastrum reticulatum.—As a fine-foliaged plant this is very pretty, for the deep green leaves have each a broad ivory-white midrib, while the flowers are of a blush-white or soft pink, veined and reticulated with red. It must not be dried off as the other kinds are, owing to its evergreen character, but needs to be treated much as the general run of stove plants. H. reticulatum is a native of Brazil. Several hybrids have been obtained between H reticulatum and other species. If H. reticulatum could be induced to flower more freely than is usually the case, its value as a decorative plant would be greatly enhanced.—H.

GODETIAS.

These hardy annuals when well grown are, as may be seen in the accompanying illustration, extremely ornamental in the flower garden, the large pure white or brightly coloured blooms forming fine masses of colour, very telling for distant effect, the individual blossoms, with their shiny satin petals, also possessing great beauty. The culture of Godetias presents no difficulty, but they prefer a light, rich soil to one that is heavy and retentive of moisture. Only last week I saw a little garden on the edge of the moor, the open soil of which had been well enriched, literally ablaze with admirably grown Godetias. The plants in question were sown very thinly where they were to bloom in the autumn, and protected by a light covering of well-rotted hot-bed manure, being thinned to 8 inches apart as they increased in size. Neglect of such rigorous thinning results in weakly-grown plants, unable to do justice to the inherent possibilities of beauty they undoubtedly possess. Many sow in April or May in the open ground, the plants then coming into bloom during August and September. The most general method of culture, however, is that of sowing in seed-pans in autumn, pricking out and wintering in a cold-frame, and planting out in the spring. Many of the newer varieties are especially attractive, and amongst these may be named The Bride (here illustrated) and Duchess of Albany, pure white; Lady Albemarle, bright crimson; Duchess of Fife, flesh-white, with a bright carmine spot at the base of the petals; and Apple-blossom, pink and white.

S. W. F.

Godetia The Bride. From a photograph by Mrs. Barton, The Grove, Wishaw, Warwick.

Tropæolum speciosum.—The trailing growths of this hardy climber are all aglow with its vivid-coloured blossoms, and by numerous buds promises a display of its flowers for some time to come. It requires time and patience to establish it in some gardens, and particularly in the south of England. Deep and firm planting appears to be needed, and in many instances it appears to have a liking for association with brickwork, as when planted at the foot of a wall it is usually more successful. In good condition it is among the most brilliant climbers of the garden. In those instances where it is desired to transplant it the best seasons are early in October, or with renewed growth in spring.

POTTING CYCLAMENS.

Seedling Cyclamens, which have been growing on during the spring for next season's flowering, should now be large enough for the final shift. A 5-inch pot is quite large enough for the first year. It is not well to overpot them the first year. The compost should consist of good loam, with the same quantity of leaf-soil and sufficient silver-sand to keep the mixture open. The plants after potting should be placed as near to the glass as possible, but a warm frame is best, with plenty of light to prevent them from being drawn. Attention must be given to watering until the plants are well-rooted in the new soil, and after a warm day a slight syringing overhead is beneficial. Shade slightly on very bright days to preserve the foliage and to obtain a much better colour.

Plants also two years old, which were potted in 5-inch pots last year, should now be started and ready for shaking out and potting off into 6-inch or even 7-inch pots if the plants are large enough. But the soil should be of a different quality at this stage, and made up of the following: 2-5ths of yellow loam, the same quantity of leaf-soil, 1-5th of dry cow-dung, and sufficient sand to keep the whole open. The cow-manure should be collected in dry weather, and placed in a dry place until the time of using, when it may be used in a dry state, and easily crumbled to pieces between the hands. But the loam and leaf-soil should be used in a moist condition when potting.

When syringing the foliage overhead care should be taken not to close the lights of the frame at the same time, as this causes the foliage to become drawn, and prevents the plants from growing sturdily. The foliage should be allowed to get dry before the frames are closed. Another yet important point with Cyclamens when growing is never to allow them to be crowded, but always give plenty of room, so that the air may circulate around them and robust growth be maintained. Care must also be taken after repotting to water sparingly, as once the plants become sickly it is a difficult matter to get them into condition. These plants do not require so much heat at this season, but careful supplies of moisture, and a genial temperature after potting. W. J.

Aquilegias from Aberdeen.—I am delighted with the grace and beauty of the Columbines, but have never had an opportunity of seeing a fine collection. Will you please say if the specimens I send you are good? The flowers of many are past, but these remain still in abundant bloom.—R., *Aberdeen.*

*** *A delightful assortment. We have seldom seen a collection so varied in colour.*

THE EUCOMIS.

A CONSIDERABLE number of our favourite garden plants owe their popularity to a bold and healthy appearance rather than to any particular beauty of leaf or flower, and of such plants are the Eucomis. They are as easily grown as Horseradish, and they never look unsightly, pushing up their bold, broad, rich green leaves in the spring, these being followed in autumn by stout erect spikes like those of glorified Hyacinths, crowded with star-shaped greenish flowers and crowned with a little tuft of leaves like the Crown Imperial. They scarcely change from this till the frost comes and cuts them down to the ground, leaving their large bulbs safe enough below to repeat the performance in the following year. Once established in a wet border with a south aspect, preferably against a wall, they will remain till doomsday, unless someone digs them up and destroys them because they are so ridiculously easy to grow. There is at Kew a border full of them, which has been a crowd of leaves and spikes annually for the last ten years. But good-natured and handsome though these plants are, they are not as much grown as they deserve to be even by lovers of out-of-the-common hardy plants. They are also worth a place in the conservatory, growing well and flowering freely when planted in pots, as is shown by the accompanying illustration, representing a well-grown plant of E. punctata, the commonest species. This has been cultivated as a greenhouse plant since 1760, when it was grown by Philip Miller at Chelsea. In 1806 it was described as "a common greenhouse plant of most easy culture." Its leaves are about 2 feet long, thickly spotted with dark purple, and its flowers, which are green stars with pea-shaped purple ovaries in the centres, are borne on purple-spotted spikes about 8 inches high.

Eucomis punctata. From a photograph by Mr. F. E. Pope, Coombe Down, Bath.

E. REGIA has shorter, broader leaves of a paler green and has no purple spots. The flower-spike is less than a foot high, and the flowers are pale green with a white margin. It was introduced from the Cape by Masson in 1774 and is in cultivation still.

E. UNDULATA is a common plant in S. Africa, where the natives call it "Makanda ka insele" or frogs' eggs, and find some medicinal property in its leaves. It has wavy leaves a foot long and from 1 inch to 3 inches wide, green, not spotted, the scape also green, the flowers, which are very numerous, being green too. It was grown at Kew a hundred years ago and is there still.

E. NANA has leaves a foot long by 3 inches broad, toothed along the margins, green, unspotted. The spike is a foot high and thickly clothed with green flowers on the upper half. This species is another old garden plant.

We now come to recent introductions, of which the best is

E. BICOLOR.—In this species the leaves are each 1 foot long by 4 inches wide, green, unspotted, with a crisped margin. The spike is 1 foot or more high, stout, the upper half clothed with flowers which are greenish-white, with a distinct purple margin. I call this a really ornamental plant, well worth a place in the most select collection of greenhouse bulbs.

E. AMARYLLIDIFOLIA was first flowered at Kew in 1878, having been received from Cape Town. It is like E. undulata, but has narrower leaves, with plain edges, spotted, the flowers green with a yellow ovary.

E. ZAMBESICA was introduced from Lake Nyassa. Its leaves are 18 inches long by 1½ inches wide, and the scape is a foot high. The whole plant, flowers and all, is entirely light green.

E. PALLIDIFLORA.—It is remarkable for the size of its leaves, which are each 2 feet long and 5 inches wide, green on both sides, unspotted, not wavy along the margins. The flower-spike is 2 feet high, very stout, the upper half crowded with flowers, which are greenish-white. W.

FLOWER GARDEN NOTES.

MIXED FLOWER-BEDS.—Now that mixtures of every conceivable kind are so much in vogue in summer flower-beds, it may not be out of place at this season to offer a few remarks on the best styles of planting. A point in connection with such mixtures that is often overlooked is the advisability of making them as natural as possible, and one can in this take a lesson from Nature both in the contrasts of colour and in the manner of distribution. Want of harmony in the association of colour is seldom, if ever, to be found naturally. From the early masses of Primrose and Daffodil with their grassy carpet, the blue of the Violet and the wild Hyacinth respectively, with Wood Anemones and huge clumps of wild Parsley down to the autumn-time, when the widely-stretching carpet of Heath is dotted here and there with irregular masses of Bracken just putting on its golden tinge, the contrasts one sees are always perfect, and the distribution of the different subjects in their relationship to each other invariably quite in keeping with the true shadings. There are two or three distinct forms of flower garden planting in connection with the above subject that are hardly to be recommended; first, the severely regular, that is, taking scarlet-crimson or pink shades in Pelargoniums or Begonias, and planting them alternately with Koniga, Gnaphalium, or variegated Pelargoniums, as the height may be required. The contrast in colour in such arrangements may be pleasing enough, but the style of planting is patchy and artificial—not at all, to follow the thought raised earlier in these notes, like the happy mixtures of Nature. Again, a combination of plants of formal habit is not advisable, no matter whether the plants are large or small. I saw an instance of this the other day in which bold clumps of Echeveria glauca had been used to relieve Cannell's Dwarf Ageratum. All the flowers had been removed from the Echeveria and the beds were flat and formal. I could not help thinking that if the flowers had been left they would have shown to great advantage against the Ageratum, and given just that bit of graceful inequality that is one of the best features in summer bedding. The same stiffness on a larger scale is painfully evident in the association of Aster bessarabicus or A. acris with Desgrange Chrysanthemum. Here, again, the contrast in colour is pleasing enough, but the bed as a whole has a table-like formality. Contrast such a bed with one in which bold clumps of scarlet Lobelia are springing from a carpet of either pinks or a good white-flowered Tufted Pansy, and the advantage in effect is altogether on the side of the last named.

Seedling plants of Pentstemon gloxinoides relieved by Acacia lophantha are looking remarkably well just now, and this mixture may be recommended for large beds. Pentstemons and Antirrhinums do well with Tufted Pansies, and the larger plants can be planted in large or small clumps, as the size of the bed requires. A chief point in the planting of mixed beds, whether the materials used are only hardy plants or with other things used in connection with them, is to avoid the employment of anything that is not seen to advantage in company, but is much better alone. Beds that are a veritable "olla podrida" of all the odds and ends are never satisfactory. Most of the above remarks are quite as applicable to carpet bedding. Although this is gradually dying out, there are still places where a few beds are annually required. There is a wonderful difference displayed in such planting, and it is hardly too much to say that if the work in this direction had always been performed in good taste, the objection to this particular style of flower gardening would hardly have been so violent. The objectionable features were the various little mounds built up in different forms, the plastered sides, and the intricate and formal patterns, the latter severely regular, like the squares of a chess-board, and the former often so very minute that the proper development of individual varieties was quite impossible. There is a wide difference between this style of planting and the more natural style that provides a broad carpet of the best dwarf plants in variety, to be in their turn thinly planted with some nicely contrasting subjects of taller growth, either single or in small, graceful patterns, as the size of the bed may require. T.

Dracæna Sanderiana.—Although when grown singly this does not spread sufficiently to make a useful plant, when three or more are grown together it is very effective, and, being of easy culture and not at all inclined to run out or lose the pretty silvery-white variegation, it should become a popular plant. Many plants with white variegation are much inclined to run out, but, as far as my experience goes, this Dracæna is constant. I find cuttings strike freely in the stove propagating-pit, and after the first tops have been taken from the plants they soon break out again and give a further supply, but it is not advisable to keep the plants cut back too close. They should be allowed to grow to a good height before taking the first top, and when they start again the next cutting may be taken off close to the old stem. After the first few cuttings have been taken the plants should be let make a good growth before cutting again. By careful treatment the same stock plants will last a long time. Potted in a light compost and grown in a moderate stove temperature they soon make nice plants. If rooted singly in small pots they may be put together when ready for potting on, or they may be grown on singly until required for use, and then put together. Six plants put together into a pan when they are from 15 inches to 18 inches high are very effective in groups of mixed fine-foliaged plants, and will be found to stand well. Phrynium variegatum and Cyperus alternifolius variegatus are both very pretty silver variegated plants when in good condition, but, unlike the Dracæna, they are much inclined to run out, especially the Phrynium, which I find many people fail to grow satisfactorily.—A.

FRUIT.

STRAWBERRIES AS ANNUALS.

Growers of this favourite fruit should lose no time in layering runners for making new beds. I have this season gathered splendid crops of fruit from plants layered early last July, and henceforth I intend to grow a large bed each year as annuals. Treated as such, one may plant closely and get a large amount of fruit; then take new runners, and afterwards dig old plants in. I have had a much finer crop of Dr. Hogg on plants of one season than those which are now two years old. The bed which I planted last September from large 60 pots contained Laxton's Noble, Royal Sovereign, Vicomtesse Héricart de Thury, Dr. Hogg, Gunton Park, and Latest of All, and I gather in the following order—

Noble	June 8th.
Royal Sovereign	June 12th.
Vicomtesse	June 14th.
Dr. Hogg	July 3rd.
Gunton Park	July 5th.
Latest of All	July 5th.

Every plant was clean and healthy, and yielding an excellent crop of handsome fruits. Young plants grown like this keep so much freer from red-spider—that great enemy to the Strawberry—than older plants. My best fruits of Gunton Park weighed ten to 1 lb., while some of the Sovereigns weighed 1½ oz. without any disbudding. I think the list named is a good one for all purposes. Latest of All, perhaps, does not come up to the others for flavour, but is valuable on account of being a good cropper, and also as it comes late. A. G. Gatland.

The Gardens, Connington Castle.

Good flavoured Gooseberries.—It is astonishing what a difference there is in the flavour of some Gooseberries compared with others. Some kinds are worthless for eating ripe, and should only be grown for cooking and preserving. It does seem strange that in some gardens there is a large amount of attention given to obtain highly-flavoured Melons, Grapes, and other fruit, while no attention is given to obtain good flavoured Gooseberries; and yet there are but few people who do not enjoy a good dish of well-ripened Gooseberries. Many there are who prefer them in this state to Grapes and other fruit. This being so, I think more attention should be given to this fruit for eating ripe. For many years I have made a point of growing only highly-flavoured kinds for this purpose, and having had to grow fruit for three different families during this time, I have found that good Gooseberries are more appreciated than most things. To have them good for this purpose the bushes must be in good condition and the fruit allowed to hang till thoroughly ripe. I consider it a mistake to grow many kinds. Obtain a few really good ones that follow each other, and grow them in quantity. The following I grow and find very good: White and Red Champagne, Early Yellow (or Yellow Sulphur), Whitesmith, Ironmonger, Red Warrington, Industry, and Hedgehog.—J.

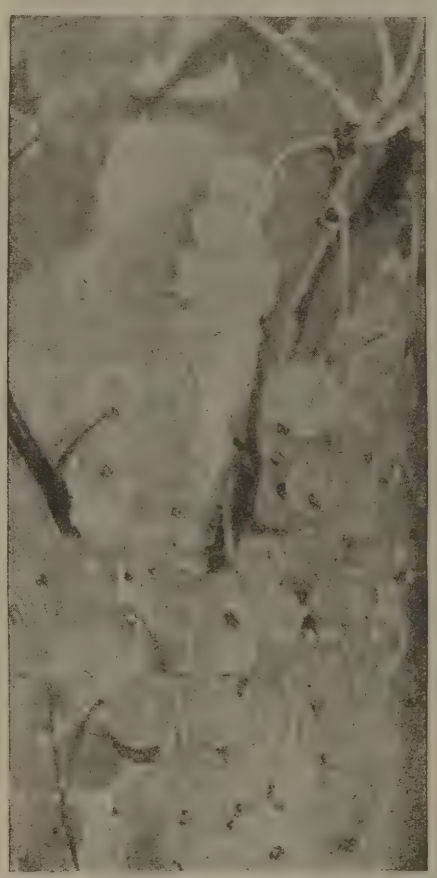
Strawberry Latest of All. — This variety appears likely to be rather largely grown, for it possesses qualities that cannot be ignored by growers of this fruit. It is of vigorous growth, sets freely, and the berries come larger than those of any variety with which I am acquainted, Auguste Nicaise, perhaps, excepted. The only fault is that the fruit is pale in colour, but this is compensated for by the flavour, which resembles that of British Queen, so useless in the majority of gardens on account of its shy-bearing character. Latest of All itself is a seedling from British Queen, crossed with Helena Gloede, so that after many years it seems probable we are on the point of seeing our markets well supplied with Strawberries that possess the true British Queen flavour.—J.

Strawberry Newton Seedling.—This is a wonderful cropping variety of average table excellence. Cottagers and others who are not too fastidious as to taste and like plenty of what they grow, will find Newton Seedling Strawberry to suit them well. The fruits are of good size, rich colour, and of fair quality The smaller fruits do remarkably well for preserving. If runners that are moderately rooted, of this or any other variety, can now be obtained, it is a good plan, having forked some short manure into a small plot of ground, to beat it down moderately, then to dibble the runners in all over about 4 inches apart, giving a good watering, and shading during hot sunshine for about ten days. Once well rooted strong growth is made, and by the end of September plenty of fine-rooted plants with stout crowns are furnished. These, transplanted carefully into rows 20 inches apart on to good ground, would carry fine fruit the following year.—D.

WHITE CURRANTS.

In Gardening, July 3 (page 242), an illustration of Red Currants was given, and I now refer more closely to the white varieties. In former days the amateur grew White Currants to a greater extent than at the present time. It is useless to go at length into the reasons why this useful fruit is not more largely grown, and my note will be to point out their excellence and simple culture.

Varieties are not numerous, neither is there any value in mere numbers. The one illustrated shows how well this fruit can be cultivated, and amateurs can grow them to perfection at a small cost. I have found few fruits more profitable than Red and White Currants grown on a north or east wall. The chief labour involved in their culture is merely spurring back the new growths at this season, and in the winter thinning out of old spurs, cutting back closer those left at the summer pruning. There are some half-dozen good white varieties. These I will describe. Fortunately, of late years Mr. A. F. Barron, an authority on fruits, classified these, and out of some twenty varieties got half-a-dozen distinct ones. These I have given a trial to, and found a great saving of time and labour in growing the best.



Currant White Dutch.

The following are, I consider, the cream of the white varieties: the Cut-leaved White, also known as Wilmot's Large White, and Shilling's Queen, a slow grower, but profuse bearer, shoots small, but in profusion, berries large, very bright and clear-skinned, sweet, and one of the best for dessert, and a grand cropper. White Dutch comes next in my estimation. It is a popular variety, known under many names, a vigorous grower, and a grand wall variety, with large leaves and berries, the latter clear white, whilst the flavour is excellent. For size Macrocarpa is a distinct type, of erect growth, and large leaves with a yellow margin; the bunches are of medium size, but with berries of a darker colour than the preceding varieties, and of an acid flavour. It is a very heavy cropper and a variety that does well on most soils. The Common White, a variety grown in many gardens, also has many names. This is noted for its crop, but berries are small, although very sweet, with a clear skin. It is a good bush variety, but of late years this has been superseded by larger kinds. White Imperial, or as it is known under the name of White Versailles, is a fine type for dessert, with large berries, very long bunch, and of very fine quality; plants grow freely, and one should get new wood laid in annually to produce very fine berries. Another variety, Grosse Blanche, often called Knight's Large White, is of fair quality, large berries, and a free cropper, but so much like some of the others that it is not needed. For size La Versailles is one of the best, but for crop, Cut-leaved White or White Dutch are recommended.

For dessert, when grown specially, White Currants are much valued, and another point is the long time they hang on the trees if the latter are clean. Unfortunately the trees are neglected at times, get dirty, then the fruits are not presentable. It is an easy matter to keep wall-trees clean, as one may reduce the foliage, and good syringing with Quassia-water, or even soap-suds, before the berries begin to ripen will clear off insect-pests. With wall culture there is less injury from frost in late spring, so far as my experience goes. I have never failed to get a full crop of fruit from walls, and another good way for amateurs (rarely adopted) is to make a fence of their Currants—that is, to grow them as espaliers or cordons. Once the trees have made these growths they give little trouble other than annual spurring in and manures for the roots. I have seen dwarf divisions between gardens, 4 feet to 5 feet high, formed of Currant-trees. The fruit garden is divided from the flowers and trees grow well treated thus. They get more light than when grown as bushes. If a fence is needed in a short time, some wire strained to strong stakes and trees grown as upright cordons will soon cover it and give a lot of fruit. Many housekeepers of the present day do not know the value of the White Currants as a jelly or preserve. The juice of the fruit is much valued for mixing with Apricots or other dry preserves. Many bare east or north walls would grow White Currants, and few trees are more profitable. I am aware birds are a sorry pest in the case of the ripe fruits; but it is an easy matter to cover a wall, and gathering is much easier. When planting, my advice is plant early—October is a good month—and secure good plants. These are reasonable, and if at all small much better grow simply for their growth the first season, not taking the fruit. By this means the plants will get a better start and furnish a wall much quicker. When grown as bushes they are often much too thick. An open tree provides the best fruit; and few fruits get more neglected in the way of food. They well repay for it, and it may be given as a mulch or in liquid form. I prefer to give the surface a good covering of manure in the winter after pruning, as then it is not forgotten, as is often the case if left till later in the season. W.

Pelargonium King of Denmark.—This produces large massive trusses of salmon-scarlet flowers. The trusses are of large size and almost globular in outline.

A curious Clover.—I have this year met with what appears to me to be a curious form of the white Dutch Clover. The flowers, you will observe, are on long stalks, and instead of forming a close head, the seed-pod is projecting far beyond the heel of the florets, and in some cases seems to be turned into leaves. In some the ordinary flower-heads have thrown up another head from their apex. If it is not Clover, would you kindly give name? —Somerset.

*** *Certainly Dutch Clover. A curious and interesting feature, similar, however, to what occurs in many other plants. We have seen it before.*

A curious Foxglove.—I am sending a spike of white Foxglove with a curious formation at the top. If you think it worth while please comment on it, and give an illustration of it in your paper. I would like very much to know the reason of such a strange freak of Nature. I hope it will arrive in good condition.—Thomas Leslie.

*** *Simply a freak which often occurs in the Foxglove. We gave an illustration of a similar specimen in* Gardening, *August 4, '94, p. 502.*

ORCHIDS.

Naming imported Orchids *(Rock).*—It is impossible to name correctly the pieces of imported Orchids sent from East London, as the family includes a very large number of plants, which, even when out of bloom, are so much alike that it is difficult to distinguish one from the other. Those marked *a* and *c* are, without doubt, Angræcums, and is a species of Mystacidium. As regards your attempts to resuscitate the plants after their long journey, it is not necessary that the Moss should cover the wooden blocks for the purpose of holding moisture; you have put on quite sufficient. As the Moss becomes so very dry we presume that your plants are exposed to strong sunshine, which not only dries the Sphagnum quickly, but is detrimental to the welfare of the plants. Keep them well shaded at all times, afford a little fresh air on all favourable occasions, and close the house early each afternoon; at the same time lightly syringe the plants overhead. It appears to be useless for you to attempt the cultivation of these Orchids with so low a winter night temperature as 40 degs. Practical experience proves that 55 degs. is quite low enough. Even with that temperature the plants will sometimes deteriorate, especially if the atmosphere approaches near to saturation. The cause of the leaves of Angræcum *c* going wrong is probably from damp. Keep the plants rather on the dry side at the root for a few weeks, but preserve a warm, moist atmosphere always. Disa grandiflora, D. longicornus, D. tripetaloides, D. crassicornus, D. Herschalli, D. ferruginea, D. graminifolia, and D. racemosa would all grow well in a cool greenhouse with a temperature of 40 degs. in winter. In summer these plants require plenty of fresh air at all times, to be kept well shaded from the sun, and a cool and evenly-balanced moist atmosphere are the principal points to ensure success. The following Orchids, which are natives of the Cape, would also thrive under the same kind of treatment: Satyrium bicallosum, S. membranaceum, S. pumilum, S. carneum, S. candidum, and S. Gauthieri. There are also several species of Habenaria worth growing; if not very beautiful, they are curious and interesting. The best time to collect and send home Disas and Satyriums is while the tubers are dormant, so that by the time they arrive in this country they will be ready to re-start into growth. There are so many really good bulbous and other plants which grow in the neighbourhood of the Cape of Good Hope that it is difficult to advise you which are the most desirable to meet your requirements. We would recommend you to obtain, if possible, dried flowers of the different species your friends can gather, and then you could make a selection according to your own taste and discretion.

Treatment of certain Orchids *(H. J. Guest).*—Your Lycaste should be grown in a cool, shady part of the intermediate-house. While the plant is in bloom very little water is needed at the root. After the flowers fade, and the plant begins to grow it may be repotted if necessary. It should have ample pot room, as Lycastes make plenty of roots. For the compost use rough loam, fibrous peat, and Sphagnum Moss in about equal parts, with a drainage of broken crocks to about half the depth of the pot. After repotting use water sparingly, as the young growths are liable to damp off; but when the new roots have penetrated through the soil, and have laid hold of the sides of the pot, then the plant should be freely supplied with water. Paphinias naturally grow in a very humid atmosphere, and care should be taken to shade them from direct sunshine at all times. Being of dwarf growth, and producing a pendulous inflorescence, they should be grown in small shallow pans or baskets, and suspended near the roof glass in the ordinary plant stove. The plant requires only a very thin layer of peat and Moss to root in. Your Bulbophyllum should be afforded the same kind of cultural treatment.

National Carnation and Picotee Society's Show (Southern Section) will take place on Wednesday, July 21st, in the gardens of the Royal Botanic Society, Regent's Park, London.

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GARDEN PESTS.

GROUND BEETLES (CARABIDÆ).

The members of this family are very numerous, being about three hundred in number. They vary in size from about ⅛ inch to rather more than 1 inch in length. They are nearly all smooth, shining insects, mostly black, blue, or green in colour. They are all very quick and active in their movements, and are, as a rule, very useful in gardens, as they are carnivorous, feeding on small worms, grubs, etc. Their grubs are long, whitish or brownish creatures of about

One of the ground beetles (Pterostichus madidus).

the same length as the perfect insects. They are also very active and carnivorous. Their mouths are armed with a pair of long, sharp, powerful jaws, and one pities the small insect that comes in contact with them. In the woodcut is shown one of our commonest species and its grub (Pterostichus madidus). This insect is about 6-10ths inch in length, and black in colour, but it sometimes has reddish thighs. The full-grown grub is of the same length as the parent insect, and is brownish in colour; its body terminates in two spines. The female beetle lays her eggs in the ground or under stones. The grubs are hatched out in the course of a week or ten days. In the autumn they become chrysalides, in which state the insect remains all the winter. In the following spring the beetles emerge from the chrysalides. Some of these ground beetles (apparently of late years) have departed from the good old ways of their forefathers, and at certain seasons are not content with grubs and similar coarse food, but they must have Strawberries and young Mangold roots. The species just described is one of the worst culprits, as it has been found damaging both Mangolds and Strawberries. In the figure is shown Mangold roots injured by this insect. There are at least two other members of the family that are the cause of injury to the Strawberry crop—Pterostichus vulgaris and Harpalus

Young Mangold-roots injured by the beetles.

ruficornis. The latter seems to be found more commonly on Strawberries than the other. Both these insects very much resemble that shown in the figure, but P. vulgaris is rather larger and stouter, and H. ruficornis is somewhat slighter, the feelers and legs are reddish, and the wing-cases lightly covered with a very fine yellowish down; beneath the wing-cases are a pair of large wings, which the insects make good use of. As far as I know none of these beetles have English names. The means of destroying these pests are not very satisfactory, lurking as they do under any shelter they can find near the roots of the plants, and as they are so smooth, hard, and active, no insecticide is of any practical use. No straw, lawn-mowings, or any litter of any sort should be allowed to lie about near the plants, and if the fruit could be propped up in any way so that it does not touch the ground, it would be kept out of reach of these insects, and of the spotted snake-millipedes which are also very fond of them. Small wire-work supports used to be made for this purpose, but I do not know if they are to be bought now. The beetles may be trapped by laying pieces of raw meat near the plants, and covering them with sacking or something of that kind. The beetles are attracted by the meat on which they feed, and the sacking provides them with shelter. These traps should be looked at every morning. It will make no difference to the effectiveness of the baits if the meat is not of the freshest. Gallipots sunk into the ground so that their tops are level with the surface and kept nearly full of water would be the means of catching numbers of them. I am indebted to the courtesy of H.M. Stationery Office for the illustrations to this paper.

G. S. S.

Black ants *(H. Roberts).*—Ants are very tiresome pests in houses, and are very difficult to destroy. If you can find the entrance to their nest put some clay round it so as to form a kind of cup without closing the entrance, and fill it with paraffin-oil or diluted carbolic acid. Either will probably soak into the nests. The ants can be trapped in saucers of treacle with pieces of wood or paper placed so that they can crawl up to it; or by soaking pieces of sponge in treacle, and when they are covered with ants dipping them into boiling water. In the garden the best thing is to open their nests with a spade and pour in boiling water. I should place the plants in pots in a bucket and pour water in until the earth in the pot was just covered, and leave it till the ants are drowned.—G. S. S.

Vines *(C. J. Myers).*—The stalks of your Grapes are infested by a fungus. I very much doubt if you can save your crop, but you might try spraying with Bordeaux mixture, which may be made as follows: Dissolve 1½ lb. of sulphate of copper in a little warm water, slake 1 lb. of freshly burnt lime and make it of a creamy consistency with water, then strain it through coarse canvas into the solution of copper, and add 11 gallons of water; or 1 oz. of carbonate of copper, made into a thick paste with a little water, then add ½ pint of ammonia; if this does not entirely dissolve the paste, add a little more until all is dissolved, then dilute this mixture with 9 gallons of water. Cut away and burn any of the bunches that are sure not to come to perfection.

Oats diseased *(Failure).*—Your Oats are attacked by the grubs of a beetle nearly allied to the Asparagus-beetle, I believe; but as I was not quite sure, not having seen the grubs before, I sent them to our best authority on these matters, and I have not yet had his reply, hence the delay in answering your letter. Strewing quicklime, wood-ashes, soot, powdered chalk over the plants, when they are wet with dew, would be very useful; or wetting the leaves with ¾ lb. of soft-soap, the extract from ¾ lb. of Quassia-chips, to every 10 gallons of water, would probably kill the grubs. I will let you know as soon as I hear the real name of the insect.—G. S. S.

Pansy-plants attacked *(Viola).*—Your Pansies are attacked by the grubs of a fly, probably the root-eating-fly (Anthomyia radicum), or the Cabbage-fly (A. brassicæ). Plants which are only slightly injured may often be saved by watering them with 1 part of ammoniacal liquor from the gas-works, to 2 parts of water, making sure that the mixture soaks well into the earth round the roots; three or four applications should be given. Lime-water used in the same manner has been found effective. Any plants which are hopelessly injured should be at once removed with as many of the grubs as possible. They should be put into a basket or some other receptacle that the grubs cannot drop out of, and be immediately burnt. The holes made by removing the plants should be filled with lime, gas-lime, or soot, so as to kill any grubs which may be left in the soil.—G. S. S.

Verbenas diseased *(N.).*—The leaves of your Verbenas are attacked by a fungus. If all the leaves are in the condition of the one you sent I should pull up and burn all the plants. If only a few are in that state, you might spray

the plants with "Bordeaux mixture," which you can make as follows: Dissolve 1½ lb. of sulphate of copper in a little water, slake 1 lb. of freshly-burnt lime, and make it of the consistency of cream with water, strain it through some coarse canvas, and mix it with the carbonate of copper; then add 11 gallons of water. Or use in the same way 5 oz. of carbonate of copper, made to a thick paste with a little water, add ½ pint of ammonia. If this does not entirely dissolve the paste add a little more ammonia until it is all dissolved, then add 9 gallons of water.—G. S. S.

Marguerite-leaves attacked *(T. I. Watts).*—The leaves of your Marguerite Daisy are attacked by the grubs of the Marguerite Daisy-fly (Phytomyza affinis). This insect also infests Cinerarias and Chrysanthemums. Cut off and burn any leaves that are so bad as to be useless to the plant, and hold the others up against the light, when you will be able to see where the grubs are. Then pinch the leaf at that place and so kill the grubs. This may be tedious, but it is very effectual.—G. S. S.

White saw-fly on Roses.—I have been plagued for several summers with the tiny white saw-fly on the back of my Rose-leaves, a place where syringing has very little effect. I should like to know at what season the larvæ, which I believe lodge in the ground, are most get-at-able, as I think that watering the ground at the right moment with paraffin and water might perhaps put an end to the pest which so completely destroys foliage?—Susie.

*** I do not understand what insect you allude to when you speak of a white saw-fly, whose larvæ live in the ground. No saw-fly that I ever heard of has larvæ that live in the ground. Please send some specimens, and I will tell you what they are and how to get rid of them.—G. S. S.

Vegetable roots attacked *(Mrs. R. C.).*—Your vegetables are attacked by the grubs of a fly. See the reply to "Viola."—G. S. S.

Grapes attacked *(Anxious).*—Your Grapes are attacked by a Fungus. See my reply to "C. J. Myers," whose Grapes are attacked exactly in the same manner.

GARDEN WORK.*

Conservatory.

Now that the summer has fairly come, many stove or tropical plants will do in the conservatory if the conditions are made suitable. Very often at this season a cool-house if required can be made into a warm one by giving less air and using more moisture. It is not often that huge masses of bloom are required under glass at this season. Choice blooming plants in a setting of elegant foliage usually give more satisfaction at this season—Palms and Ferns, with plenty of hanging drapery in the shape of Passion-flowers, etc. The variegated Cobæa scandens has a light and pretty effect hanging about now, and Mandevillea suaveolens is very fragrant. Solanum jasminoides is free growing, and the growth is light and elegant, and the plant flowers freely when allowed to ramble pretty much at will. Brugmansias and Plumbago capensis are useful plants now, either planted in the border or in pots or tubs. Choice groups of Tuberous Begonias may be a special feature. The Pearl Tuberose in a setting of Ferns, several dozen in a group, will continue to flower for a long time; but a light shade should be used, as the flowers soon lose that purity of tint if exposed to hot sunshine. I wonder Tuberoses are not more grown for summer flowering in the conservatory. Good sound bulbs are safe to flower all right. There is no mystery about their management. The flowers, perhaps, may not be quite so fragrant grown cool, but they will last longer and be more useful for bouquet work. There are several ways of growing them for flowering now. They may be potted singly in 5-inch pots, or three bulbs in a 5-inch pot, and when filled with roots shifted into 6-inch pots. Liquid-manure may be used freely when the spikes appear. Night air proportionate to the wind and weather will be beneficial to all greenhouse plants now, and abundance of water will be required.

Stove.

Cissus discolor is an old plant, but is very effective as a basket-plant, especially for draping the base of baskets containing Ferns, and the long sprays of coloured foliage are useful for table decoration. Asparagus plumosus nanus is still one of the best for cutting, and should if possible be planted out; it may be grown against a wall and trained up under the roof, but must have a light shade. One has to be careful about the purity of the syringing water used among foliage plants. Nothing but pure rain-water is permissible, as the least spot on the foliage spoils the attractiveness of such things as Caladiums, Marantas, and things of like character. Young winter-flowering plants should be grown on freely, and pinched occasionally till a good base has been secured. Hoya bella is a pretty species now in flower. Makes a pretty basket-plant. Should be grown in fibrous material, and the drainage must be perfect. Medinilla magnifica superba is a fine plant for the summer shows when well done, but requires good culture, especially as regards watering and drainage, with rich old turf and fibrous peat. The stove Hibiscus rosea sinensis and varieties are deserving more attention. They are easy to grow, and flower freely when the growth is well ripened.

Ferns under Glass.

These are now in fine foliage. Plants intended to supply fronds for cutting should not be too heavily shaded. Adiantum cuneatum and A. elegans are in some establishments grown very largely for the purpose, and are frequently grown on shelves near the glass, with only a light shade over them on bright days. Water must be given abundantly, and a little sulphate of ammonia sometimes will improve the colour.

Vineries.

A little shade will be useful over Black Hamburgh and Madresfield Court Grapes if they have to be kept long. A double thickness of fish-netting will break up the sun's rays, and be left on till no longer required. If possible the house should be mulched down with litter to keep down dust and keep the moisture in the border. I have heard of a good many cases of mildew on late Grapes, and if neglected for a single day the quality of the Grapes must be injured. Sulphur in some form is the acknowledged remedy. I have heard a good account of the XL All mildew-wash of Mr. Richards, the inventor of the vaporiser, and whenever mildew appears something prompt in its action is necessary, and not only so, but the cause of the attack should be ascertained and removed. Dryness at the root, cold draughts, and imperfect ventilation generally may cause mildew.

Red-spider on Peaches.

This is a terrible pest on the Peach foliage. The remedy is thorough syringing or washing with the engine or hose at closing time, not later than 4 p.m.—3.30 will be better—saturating the atmosphere at the same time. A chink of air may be given later in the evening.

Window Gardening.

Cut down show Pelargoniums, and put in cuttings. They will root outside. Cyclamens which have dried off after flowering will soon be starting, and should then be stood out and repotted in same size. Sow a pinch of Cineraria and Primula for late flowering, also Calceolarias.

Outdoor Garden.

Routine work will be most important now. Surface stirring, mulching, watering, destroying insects, and many other jobs in the garden come round year after year, and success is mainly based upon prompt attention being given to each matter as need arises. Budding Roses, layering Carnations, and striking Pinks are largely matters of routine in the sense that they must be performed annually if the stock of plants are to be kept in good condition and up-to-date. Maiden Roses generally produce the finest and freshest blooms and usually come in a little later than the old plants. Young Carnations and Pinks are a necessity if the stock is to be kept up. Hollyhocks are now largely raised from seeds, but new kinds must be struck from cuttings. Cuttings of the flower stems will strike freely when the wood is getting just a little firm in July. The side stems are cut into single joints or buds, with a couple of inches of stem below and ½ an inch or so above the bud. Insert them in sandy soil under handlights or in a frame. Keep just moist till rooted.

Fruit Garden.

There are always insects to be dealt with in a fruit garden, and method and persistence are necessary to keep them at bay. It is better and easier to prevent than to cure; and so far as outside fruit culture is concerned and in many respects inside culture also, well-nourished trees are less subject to insect attacks than where the culture is careless, and the trees left pretty much to find their own food. This is the time whenever if the upper stratum of soil lacks moisture the roots go down too deep in their search for it. A light mulch on the surface would have prevented this. Mildew on Grapes seems rather prevalent this season—at least, I have seen several bad cases within a small circuit. In one case the cause was a cold current through the house. In another it might have been dryness at the root. Dry sulphur is generally recommended, or at least sulphur in some form, and no doubt sulphur will kill mildew, but it leaves less deposit on the fruit when used as a wash.

Vegetable Garden.

Do not forget to sow the Cabbages at the right time for each special locality. Plant out Walcheren Cauliflowers for autumn use. The Walcheren when true is a good Cauliflower and comes of a suitable size and white. The Autumn Giant is generally too large and coarse for a second-course vegetable. The main crop of Celery should be in the trenches now, and kept moving by liberal supplies of water. If the weather is very hot and dry scatter a little Moss-litter-manure along the trenches on each side of the plants. Where the culture has been good among general crops of vegetables if the hoe is used sufficiently to keep a loose surface there will not be much necessity for the water-pot to be used. The middle of the month is a good time to sow Bath Cos Lettuce for autumn and winter use; sow again at the end of month, and once in August. The Green-curled Endive is hardy, and well adapted to stand the winter, sheltered from frost. Fill up all bare places with Coleworts. Tom Thumb Savoys will answer the same purpose planted thickly. There is just a chance to get a few late Peas from a sowing of the earliest kinds in a warm place.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 19th.—Put in cuttings of New Zonal and Ivy-leaved Pelargoniums. Cut down show and fancy Pelargoniums and put in cuttings. Sowed Red Globe Turnips and Bath Cos Lettuce. Planted out Green-curled Endive. Sowed Chervil; Mustard and Cress are sown twice a week in shady border. Potted off Crotons, Dracænas, and Gardenias, also seedling Aralias, and Grevillea robusta.

July 20th.—Planted late Broccoli after Strawberries. Planted new bed of Strawberries: Royal Sovereign, President, Sir J. Paxton, and James Veitch. Cut all runners for plantations intended to remain for another year. Layered Carnations and Picotees. Rose-budding is being done at every favourable opportunity. Drew a little earth up to Leeks. Sowed Parsley and Early Horn Carrots for autumn and winter use.

July 21st.—Planted out more Red Celery. Tomatoes in cool-house are ripening plentifully now. Plants are stopped when they reach top of stakes. Top-dressed with Moss-litter-manure. Made a first sowing of Spinach for autumn and early winter use. Main crop will be sown later. Sowed Heartwell Cabbage, also a few seeds of Blood-red for pickling. Planted Coleworts and Tom Thumb Savoy. Gave liquid-manure to Asters, Hollyhocks, etc.

July 22nd.—Cut Evergreens and other hedges. Finished potting late-flowering Chrysanthemums; 7-inch pots are used for them sometimes; two plants are placed in one pot. Lincoln and Lady Lawrence, when potted late, are generally treated in this way. Put flower-pots on the top of Dahlia and Chrysanthemum-stakes to trap earwigs. A little dry Moss is placed in each pot and they are examined daily.

July 23rd.—Put in cuttings of side-shoots of Hollyhocks in cold-frames. Gave liquid-manure to Asparagus-beds. Peaches ripening under glass will have less water, but will not be injuriously dried. Use the hose or engine for red-spider. Top-dressed late Melons in frames with good loam and pegged out shoots. Fertilised blossoms as they expand. Removed the breastwood from Pears on walls.

July 24th.—Propagated variegated Begonias from leaves, also Asplenium bulbiferum; some of the fronds are very full of little plants. These were taken off and pegged down in boxes of sandy peat, and will be kept close until established. Potted off Hydrangea cuttings. Potted more Tuberoses for late blooming. Cleared off early Peas, and prepared ground for winter Onions and Spinach. The hoe is used freely among ground crops.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1049—**A good recipe for pot-pourri.**—Can I keep dried Rose petals until the winter without putting any spices in them? Is it injurious to Rose petals (for pot-pourri) to gather them whilst the dew is on them? I dry them gradually in an airy room out of the sun.—Countess.

1050—**Fuchsia serratifolia.**—Would some reader kindly say where this can be obtained?—Hope.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1051—**Fern turning brown** *(Mrs. Brook).*—The Fern is Polystichum angulare (Prickly Shield Fern). Its brown aspect is due to dryness at the root.

1052—**Strawberries** *(Harrow).*—The injured portions of both Strawberry-plants and perennials may be cut off, but it is too early yet either to manure the Strawberries or cut down the perennials. The latter will make new growth and blossom yet.

1053—**Spanish Irises and Anemones** *(Harrow).*—The roots of the Pyrus japonica cannot be healthy, or the leaves would not shrivel. Nothing can be done now. Early in October replant it, using some sandy soil next the roots, and mulch the surface with half-rotted manure.

1054—**Begonias** *(C. E.).*—Not too much overhead watering; an occasional sprinkle is all very well, but continuous wetting is sure to cause decay. Sun coming into contact with wet foliage will also cause the brown spots you mention, and we think if you watered early or late these would be avoided.

1055—**Tomatoes not swelling** *(Sidney Tuckey).*—We can only suggest that your Tomatoes are not properly impregnated while in bloom, and hence this failure to set fruit. It cannot well be from any treatment accorded, or the others upon the same plant would not look so promising.

1056—**Malmaison buds decayed** *(Nemo).*—The plants have received a check in some way, either by injury to the roots, or they have caught a chill. One cannot tell. Stable-manure and soot-water may easily be strong, and if it killed the tips of the roots this would cause the premature decay in the buds.

1057—**Gentiana acaulis** *(Harrow).*—Soil somewhat light in character, and with which is mixed old lime, mortar, and broken bricks or sandstone is suitable for Gentiana acaulis. When the plants have flowered give the roots abundant supplies of water during dry weather. On no account let them suffer for want of it.

1058—**Spotted Zonal Pelargoniums** *(A. H.).*—The sole cause is neglect to keep free from insect pests, and the excrements from these, especially green-fly, are so sticky that all other dirt and impurities adhere to the leaves. It is ruin to the health and beauty of any plant. Wash your plant well after picking off the worst leaves.

1059—**Treatment of Grape-Vines** *(T. Weaver).*—Your plan is the correct one, and will produce fruit next season. There is no reason why the canes should not have fruited a second year, provided they were properly treated. Of course, hard forcing of so young a cane is a considerable exhaustion, and the plant would do better after a season of comparative rest.

1060—**Cucumbers for market** *(Constant Reader).*—Allow as many shoots to grow from the plants as there is room on the trellis to admit of the leaves developing fully. Overcrowding shoots and leaves is detrimental to success. Pinch the shoots at every second joint, thin the fruit out constantly, directly it is formed. Too heavy crops are hurtful—the plants cannot continue in good health.

1061—**Flowers for spray bouquet** *(Aucklochan).*—These are sometimes scheduled as sprays, spray bouquets, and ladies' sprays. It is simply a longer arrangement of flowers made up for the breast and shoulders of ladies. As to what are the best flowers, we are somewhat puzzled to say. Roses, Lily of the Valley, and, we think, Pansies, are among the prettiest when one is tied to productions from the open.

1062—**The Carnation-maggot** *(Nemo).*—The small black-fly (Hyelerina nigrescens) deposits its eggs in the Carnation plant at different seasons, but we find them most active in spring. There is no remedy known to me except to watch for the appearance of the maggot, and get it out with a needle. If any correspondent knows of a remedy, they would confer a great boon on growers by telling what it is through the pages of GARDENING.—J. D. E.

1063—**Fuchsia buds dropping** *(Yorks).*—Want of moisture at the roots is the cause of your Fuchsia buds dropping. Place an inch of horse or cow-manure on each pot and thoroughly soak the soil at least twice daily; perhaps oftener will be required if the pots are small. Give plenty of air, and keep the plants as near the glass as possible. There is no work on Fuchsias alone. The pages of GARDENING contain sufficient information on this plant from time to time.

1064—**Tecomi Smithi** *(C. E.).*—This is one of our most handsome greenhouse flowering plants for autumn and early winter blooming. Seed may be sown at any time, and it is as easily grown as the Chrysanthemum. It is a biennial, and only needs an ordinary greenhouse temperature. Do not pinch out the shoots Your plants will bloom all right if in a good loamy soil, to which a little thoroughly decayed manure and coarse sand are added. If not in such a compost, turn out of pots, remove a little of the soil, and repot into one size larger at once.

1065—**Mulching vegetables** *(M. W. Campion).*—Half-decayed stable-manure is much better for mulching than fresh litter from the stable. The latter should be thrown into a heap and partly decayed before using. It is a great mistake to sow good seed too thick; not only is thinning more tedious, but the plants remaining are not so stocky, besides, there is the waste seed. It is immaterial whether the mulching is done before the runners are staked. Most gardeners are thankful for information received from GARDENING. Your gardener appears to be of a peculiar type.

1066—**Pæonies unsatisfactory** *(Regular Subscriber).*—Seldom indeed can Pæonies be established under three years to give satisfaction. If the soil is not deeply dug and well manured with considerable attention bestowed on supplying them with water during dry weather, they are even longer in establishing themselves. An open position away from walls is best for this hardy plant. Mulch the surface now with horse-dung or leaf-mould to conserve the moisture in the soil. If there is any doubt about their not being well planted take them up in October and treat as directed.

1067—**Spring Cabbages** *(J. Scott).*—Sow seed of Ellam's and Flower of Spring, the former the last week in July, and the latter the second week in August in a bed of moist soil. Directly the plants are a good size, and before they are in any way drawn up weakly, plant the former in rows 15 inches wide, the plants 1 foot apart, on deeply-dug and well-manured land. Before planting draw out a drill with the end of a hoe, as you would to sow seeds. In this drill dibble the Cabbage carefully in, securing the roots. Keep them free from weeds. Flower of Spring requires rather more space than Ellam's.

1068—**Taking cuttings of certain plants** *(S. S.).*—Young shoots of the Antirrhinums (Snapdragon) may be taken in September and rooted in a cool-frame. These are best propagated from seed sown in July and transplanted early the following spring. The same applies to Margaret Carnations. Her Majesty Pinks are best layered in August and transplanted in the autumn or early spring. Delphiniums may be rooted by taking young suckers not more than 3 inches high, either in autumn or when new growth commences in spring. Use single pots of light compost, and keep them in a cool-frame for a few weeks.

1069—**Bermuda Buttercup** *(M. S. V. Cottle).*—The plant known as the Bermuda Buttercup is Oxalis cernua, a native of the Cape of Good Hope, but which is now cultivated largely in Bermuda, from whence great numbers are sent to this country during the dormant season. If the bulbs are potted in the autumn and placed in the ordinary greenhouse they will, if the soil is kept slightly moist, start into growth early in the new year, and flower towards the end of spring or soon afterwards. When in good condition a succession of charming golden blossoms is kept up for nearly a couple of months. It is difficult to say the reason of the plants in question dying down so soon without flowering, and all that can be done now is to keep them dry till about the end of September, when they may be potted in a mixture of loam, leaf mould, and sand. Four or five bulbs in a pot 5 inches in diameter will form a neat little specimen, and in potting, the bulbs should be kept about an inch below the surface. Avoid overwatering, particularly till growth commences, after which they may be treated much as a Pelargonium.

1070—**Showing vegetables** *(A Constant Reader).*—Kidney Potatoes certainly would carry the most weight of any of the kinds you name. No collection of vegetables can be perfect without Potatoes. Parsnips would count the least of those you have in August.

1071—**Horse-manure and sawdust** *(E. N.).*—Sawdust is in itself not the slightest use, in a beneficial sense, but mixed with horse-droppings it would assist in lightening heavy soil, and would do no harm to the crops. It, however, ought not to be used for more than one season. It would be useless for Mushroom culture.

1072—**Primula obconica** *(Perseverance).*—Some defect in the culture, as allowing the root to become dry, thus giving a check to growth, causes the leaves to go off in this way around the edge. Perhaps the roots are in an unsatisfactory state also for want of repotting. Either of the reasons given would render the plants unsatisfactory.

1073—**Making propagating-bed** *(Be).*—Presuming you require the bottom-heat for raising seeds and cuttings, cover the hot-water pipes with broken bricks or stones, 9 inches deep; through this the heat from the pipes will rise and warm the plunging material above. For this latter tan or Cocoa-nut-fibre-refuse 1 foot thick is best. Your query can never have reached us. The utmost care is taken with every query sent.

1074—**Grapes mildewed** *(Attention).*—Admitting air to Vines when in bloom at both the top and bottom of the vinery, thus causing a draught, especially when the house is at all exposed to the east, is the source of more mildewed Vines than anything else. Give air at the top only when the Vines are in flower, except, of course, when the day is very warm and the house in no way exposed to east wind.

1075—**Best artificial manure** *(Bunny)*—Dissolved bones sprinkled about the surface of growing crops during showery weather will act as a stimulant. Nitrate of soda for all the Brassica tribe is excellent. Soot, too, may be employed freely. For Potatoes special manures are prepared by growers to be used at planting time. Very fine crops of Potatoes are grown yearly with no other manure than that named.

1076—**Treatment of old Currant-trees, etc.** *(Bunny)*—Prune away all weakly branches, cutting them close to the main stem or branches as the case may be. This cutting out will give space to those branches remaining, enabling them to mature their growth; without this fruit cannot follow. The pruning should be done as soon as the fruit is gathered, and should be so done as to give free space to those branches left. From these the growth of the current year may be cut in the autumn.

1077—**Grapes unsatisfactory** *(Leicestershire).*—The Vines are badly mildewed, and as far as the present crop is concerned, quite useless. The discontinuing of the fire so early was one reason of the mildew fungus spreading so fast. Too much ventilation too, has been given, causing a draught, which is the cause of more mildew than anything else. Watering the border every night too aggravates the defect, causing as it does too much atmospheric moisture. Sprinkle flowers of sulphur over the bunches and leaves, also mix sulphur with water to the consistency of paint and coat the stems of the Vines all over. Sprinkle sulphur about the house, which ought to be kept dry and warm.

1078—**Berries of Madresfield Court Grape unsatisfactory** *(J. Friend).*—The berries of Madresfield Court Grape received were "scalded." This is common at this season of the year with some varieties, notably that named and Lady Downes, where the management is not of the best. The cause is through the sun striking on the berries early in the morning while the skin is yet wet with condensed moisture through the atmosphere being too heavily laden by reason of the ventilators being too closely shut at night A little warmth in the hot-water pipes for a few nights at this stage, combined with an admission of air, will maintain a buoyant atmosphere in the vinery, and thus prevent scalding.

1079—**Maidenhair Ferns** *(G.).*—Ferns or other plants continually kept in rooms do not require water every day. Sometimes once a week is often enough Feel the soil in the pot, or rap the outside of the pot with the knuckles; if it sounds hollow give enough water to wet the soil thoroughly, if the soil feels dry water in a similar way. An occasional wetting of the fronds is beneficial in keeping them free from dust, but daily sprinklings are injurious. Plants far away from light in a room do not succeed as well as those that get more light, through the window even. Move your Ferns to the window at times, securing them from direct and powerful sunlight, and attend carefully to watering them.

1080—**Allamanda grandiflora not flowering.**—Can you tell me the cause of an Allamanda grandiflora which is extremely healthy and makes wood abundantly not flowering? It is planted in the border in the hot-house.—G. M. A.

*** *Too much root room prevents the maturation of the wood sufficiently to enable the plant to blossom, which it should do abundantly. Confine the roots to a 3 feet space, water freely if the drainage is perfect, if it is not, correct it. Train the shoots thinly close to the glass to assist in their maturation.*

1081—**Treatment of Gladioli and Dahlias.**—I should be much obliged if you would kindly inform me through the medium of your invaluable paper whether Gladioli and Dahlias, planted at a depth of some 5 inches in clayey loam, should be lifted every year. I have no wish to separate the bulbs, as I prefer to see them growing in clumps; but I would like to know whether if left in the ground they would suffer much from frost or heavy rains. Can Cannas (Crozy) also be left in the ground if properly mulched before the winter frosts come on, or should they be repotted and placed in a cool-frame during winter?—INTERESTED.

*** *In some seasons all the plants named would be secure from frost, but neither are absolutely safe; therefore, our advice is to take them up yearly. If they are not taken up they ought to be planted in sandy soil with 6 inches of drainage under and thickly mulched during the winter with leaves and coal-ashes.*

1082—**Brugmansia suaveolens not flowering.**—I have in my greenhouse a Brugmansia suaveolens, which was apparently healthy, but does not bloom. It throws out young shoots which promise well, but after a certain stage cease to make any progress. It has never flowered during the two or three years I have had it, and I shall be glad to know what treatment is likely to make it more successful and throw it into bloom.—G. M. A.

*** *Want of maturity of growth is the cause of the non-flowering. If in a pot stand the plant out-of-doors in a sunny spot, supply the roots freely with water and occasionally with liquid-manure, if the pot is small; or what would still be better, repot into a larger one. If the plant is growing in a border give it all the light possible to enable it to mature the growth made.*

1083—**Lilium auratum flowers blind.**—I send some buds of Lilium auratum which have come blind for the second season. Last year I grew them outside in ground, this in pots, with a like result. Would you kindly enlighten me what is wrong?—ZELGNAC.

*** *The cause of the non-development of the auratum buds is due to defective bulbs; the reason is most difficult, for sometimes the most healthy-looking plants will behave in a similar manner. The best remedy is to plant deeply in well-dug and freshly-manured soil. Under and above the bulbs place 4 inches of sandy peat. Mulch the surface with manure or decayed vegetable refuse to protect the plants during winter, and to conserve moisture in the soil during the summer.*

1084—**Medlar-tree.**—Could you tell me how to treat a Medlar-tree? Apparently flourishing, it has each year a good crop of fruit, which never ripens, and remains as hard as wood. The garden faces south, on a slope, is sheltered from cold winds, and with a good soil. Everything else thrives to perfection. The garden is in Cumberland.—C. F. C.

*** *The variety is most likely an inferior one. If the tree is young and makes vigorous shoots, root-prune it in October by digging a trench 2 feet deep and 4 feet from the stem all round, cutting off any strong roots. If the tree does not grow freely, thoroughly soak the soil several times during the summer, autumn, and winter with liquid-manure to encourage more freedom of growth.*

1085—**Black Hamburgh Grapes colouring.**—Will you kindly give me assistance through your valuable paper, GARDENING? I have a good lot of Black Hamburgh Grapes. They have begun to colour in the warmest part of the house. Must I still continue fire, or no, and must there be ventilation by night as well as by day? I have closed the house and damped down on bright days, as the sun goes off about 3.20 p.m., but I am keeping it drier now and a little fire by night. I have Hare's-foot and Maidenhair Ferns in same house, and I water early in the morning. Will you kindly advise me concerning fire-heat and ventilation?—YOUNG BEGINNER.

*** *The hot-water pipes should be warmed at night if the weather is cold, but not otherwise; it is not necessary. Give abundance of air during the day through both top and front ventilators. At night a little through both also is beneficial. Do not create any moisture in the house after 2 p.m. The Ferns will do no harm if they are watered, as you say, in the morning.*

1086—**Sweet Pea buds falling off.**—I have four batches of Sweet Peas. Three are doing well, but in the fourth (Countess of Radnor) the buds while small have turned yellow and fall off when touched. All have received same treatment. Soil, clay; plenty of sun. Will you kindly tell me the reason of above failure and suggest a remedy?—S. H. BARTON.

*** *The constitution of Sweet Pea Countess of Radnor is not so strong as some other varieties. Mix with the clay about the roots sand, road-grit, and manure. If the weather be dry mulch the surface with half-rotted manure, and keep all seed-pods cut off. Have Peas of any kind been grown on the same site within the last three years? If so, it is against their success this season.*

1087—**Strawberries rotting.**—I shall be much obliged if you can tell me the cause of Strawberries rotting? I have a splendid crop this year, but before they are quite ready to ripen turn rotten, and we are able to gather very few. My gardener says he hears that other Strawberries in the neighbourhood are doing the same. How is it accounted for? Do you think it is mismanagement?—A. B.

*** *Perhaps the variety is not a good one. The present season is not one favourable to premature decay of the fruit. Have the plants had straw placed under them to keep the fruit clean and off the ground, so that the air may blow about them freely? This latter is a means of preventing too early decay of the fruit.*

1088—**Cutting back "Syringa."**—How and when should the large flowered Syringa be cut back? It is in bloom now. Should the young wood be cut back? If so, how far? It has made shoots this year 1 yard long, also the flowering shrub Deutzia?—K. W.

*** *Never cut out the new wood of either Syringa or Deutzias. This is what flowers best the following season. If you must remove any, let it be the older wood as far as possible. Prune either in autumn or early spring; we prefer the latter.*

1089—**Use of old petroleum cask.**—I propose to use an old petroleum (kerosene oil) cask as a water-butt. Will the water from it be in any way injurious to flowers in pots? It has been empty two or three months.—F. W., *Blackheath.*

*** *Before using the cask, get some straw and shavings and burn these in it. This will not only remove the whole of the petroleum, but will char the inside and make it more lasting. Petroleum and other similar oils are deadly to the roots of plants, and must never be applied with water. The little which runs down stems from syringing with insecticides, containing paraffin and other oils, is so minute that not much harm can accrue, but we have more than once been able to trace failures to the presence of such oils around the collars of plants.*

1090—**Preserving vegetables.**—Would you kindly inform me of an easy method to preserve vegetables, such as Peas, Beans, and Asparagus heads for winter use?—C. GLAMIS.

NAMES OF PLANTS AND FRUITS.

*** Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Albert Briggs.*—1, Potentilla atro-sanguinea; 3, Geranium pratense album; 4, G. pratense; 5, Philadelphus inodorus; 6, Spiræa confusa; 7, Hemerocallis fulva; 8, Spiræa Aruncus; 9, Allium Moly; 10, Double Sneezewort (Achillea Ptarmica fl.-pl.); 12, Cotoneaster frigida.——*George Clark.*—Weigela or Diervilla rosea.—*W. T. Richardson.*—Roses: 1, La France; 2, Margaret Dickson; 3, Not recognised; 4, Sultan of Zanzibar.——*Algernon R. Baker.*—If the stem of your Raspberry is not prickly the proper name is Rubus odoratus, a North American introduction, and one of our showiest flowering shrubs. Unfortunately you did not send up a portion of the stem. It is not a British species. Names of Roses: 1, Probably Laurette Messimy; 2, Mme. Falcot; 3, Alba rosea, syn. Mme. Bravy; 4, Fallen to pieces; 5, Suzanne Marie Rodocanachi.——*Countess.*—1, Mrs. John Laing; 2, Docteur Ballion; 3, Shattered; 4, Unrecognisable; 5, Antoine Mouton; why break the thorns off this? They are often our best guide to fading blooms; 6, Senateur Vaisse. Your deformed blooms are caused by changeable weather acting upon the outer petals of extra double varieties. There is no remedy.——*H. O. Stratton.*—1, Mme. Chizaud; 2, Henry Bennett; 3, Too many like this to name from such an indifferent specimen; 4, General Jacqueminot; 5 and 6, Baron Maurice de Graviers; 2 and 4 are worth growing, but the remainder could be much improved upon. Early next autumn we shall be publishing a list of Roses most suitable for various purposes, giving the leading colours ——*Constant Reader.*—The plant is Orache, or Mountain Spinach, which will continue to grow yearly from self-sown seed. It was no doubt sown there some time. It is edible, and is employed in some gardens to produce an effect in the sub-tropical beds.——*Ferns.*—1 and 3, Adiantum concinnum latum; 2, A. concinnum; 4, A. Legrandi; 5, A. Pacotti; 6, A. decorum. ——*E. C.*—1, Veronica spicata; 2, Anchusa italica (Italian Alkanet); 3, Salvia patens; 4, Corn Marigold (Chrysanthemum segetum).——*B. J. W. W.*—Italian Alkanet (Anchusaitalica).——*J. A. Newington.*—Rosy Zephyr-flower (Zephyranthes carinata). It blossoms freely in the open border if kept dry in winter, and should be grown in light sandy loam, but it is not very hardy. In cold localities grow it in the greenhouse or a frame.——*P. M'D.*—French Willow Herb (Epilobium angustifolium).——*G. I.*—Ornithogalum pyramidale.——*William C.*—The red flower is Metrosideros floribunda (the Bottle-brush-flower); the other is the common Alyssum (A maritimum).——*Lady W.*—Campanula sarmatica.——*G. Fryer.*—Anthericum graminifolium.——*W. Pitt.*—1, Saponaria cæspitosa; 2, Pulmonaria azurea.——*R. G. G.*—Yours were the poorest specimens to name we have received this year, and that is saying much. 1, Begonia Weltoniensis; 2 and 4, Impossible to name from the scraps sent; 3, Nephrolepis exaltata; 5, Begonia Haageana. The plants were a mass of greenfly and scale. Fumigate at once with Tobacco; but it would be better to destroy the stock and commence again. ——*J. P.*—Very poor specimens, unfortunately. 1, Oxalis of some kind, but too withered to name; 2, Spanish Iris, but kindly send fresh flowers to make certain; 3, Probably Impatiens glandulifera.——*E. D. C.*—In all probability Miss Bateman, but the flower was rather withered.—— *S. S. Kennedy.*—1, Merveille de Lyon; 2, Probably La Reine; 3, Aurora du Matin; 4, So shattered we cannot recognise.——*S. D. L.*—Veronica virginiana.——*W. Walbrook.* — Cistus ladaniferus maculatus (Gum Cistus) —— *H. A. A.*—1, Olearia macrodonta; 2, Not recognised.—— *Mrs. D. Watt.*—Hypericum perfoliatum.——*R. W. W.*—It is most difficult indeed to name plants from seed without flowers. Grow them in a greenhouse, and when in flower submit specimens, and we will endeavour to oblige you.

Names of fruits and vegetables.—*E. N.*—If you had given the height that the Pea requiring naming grows we should have been able to be more accurate in naming. We, however, think the Pea is Telegraph —— *W. Piper.*—Apple Five-crowned Pippin.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Orothamnus.—The only place likely to suit you would be Messrs. Clibran, nurserymen, Altrincham, Cheshire.—— *Exhibitor.*—It is a very simple matter to get "F.R.H.S." affixed to your name. It means paying a subscription each year. You can get all information from the Secretary, Royal Horticultural Society, 117, Queen Victoria-street, London. As regards the Crystal Palace, apply to the superintendent of the gardens there, Sydenham, London. ——*J. Gallimore.*—Mrs. Jocelyn's garden is situated nearly in the centre of Cheshire, and is about two miles from the smoke of Northwich and Winsford, but the smoke does not affect the herbaceous plants, shrubs, Rose-trees, or bulbs in the least.——*Ego.*—There is an excellent collection of essays on the culture of different forms of the Pansy, published by Mr. W. Sydenham, Tamworth, Staffs., which can be had for sixpence, and contributed to by the leading growers. There is also a little book on "The Pansy: How and when to Cultivate it," by Alex. Lister, Rothesay, N.B., and published at a shilling. We also know of one in the course of preparation which should be useful to amateurs particularly. However, for the present you could not very well do better than read Gardening regularly, as Pansies are seasonably dealt with.——*A. E. Mortimer.*—You must show whatever you have in best condition, whether Currants, Gooseberries, or Grapes. Of course, the more prized the fruit the greater chance you have of winning the premier award. That is to say, a dish of Nectarines or Peaches would count more than a dish of Currants. But study the schedule well and do not show indoor fruit if outdoor fruit is desired.

Phlox Opera.—This is a very handsome variety with large heads of flowers of a vivid carmine, very decided in its tone of colour and extremely effective in the mass. Those in favour of decided colours should note this one.

BEES.

STARTING AN APIARY.

I want to start an apiary, and shall be glad of a few hints as to the best kinds of hives to get, also kinds of Bees? Should I get a swarm or a stock of Bees now (July) with safety? My only fear is how they will travel, because swarms will even have made their combs by now.—Countess.

*** The best hive for the beginner in Bee-keeping is the ordinary square bar-frame hive, containing ten standard frames, running at right angles with the entrance, having a movable floor-board on deep joists, to keep the hive well raised above the ground, and a ridge roof, which is the best form for keeping out the rain. In addition to the frames the inside of this house is furnished with two division-boards, to be used in contracting or expanding the brood-chamber as necessary, besides two or three thicknesses of quilting to cover the tops of the frames, and keep all snug and warm. Many hives are provided with double walls, to be filled with chaff or Cork-dust to keep out the frosts of winter; but these are not necessary where good, stout material is used in the construction of hives. In all frame hives provision is made for supering by means of sectional boxes placed in shallow crates over the tops of the frames, and in many extra bodies are provided, containing frames for extracting purposes. What is known as the combination hive is a very useful kind of hive, containing fifteen frames in place of ten, and these hang parallel to the entrance instead of at right angles to it. Many Bee-keepers, however, object to this hive because of its great size; still, it is well to remember that a large hive can at any time be made smaller by means of the division-boards. But so much depends upon the kind of honey season we get, for in some seasons the largest hive will overflow with Bees and honey, while in others a hive of very small dimensions will meet all requirements. Then, again, some races of Bees are much more prolific than others, and require more space for rearing of brood, although it has been proved that though in exceptional seasons foreign races of Bees will occasionally work wonders, still, taking year by year, they do not give results equal to ordinary English Bees. The rage for possessing stocks of Italian and other foreign Bees is now subsiding, and Bee-keepers are rightly coming to the conclusion that there can be no race of Bees better adapted to our climate than the ordinary English Bee. Newly-built combs cannot travel with safety. It would not, therefore, do to purchase a swarm that has been hived more than a day or two, and stocks would not be in good condition for travelling during hot, summer weather. In Heather districts we have known July swarms to do very well on account of the lateness of the honey harvest in such places; but all swarming is probably over for this season. If, therefore, you are unable to obtain a newly-hived swarm we should advise you to wait till the autumn, and then obtain a strong stock that has thrown off one swarm this season, as such a hive will possess a young queen—the old queen always leaves with the first swarm. A swarm would have to be removed with great care, even in the autumn, on account of the tenderness of the combs. S. S. G.

AQUARIA.

Management of aquarium (*G. L.*).—Although light is necessary to the production of oxygen and to the growth of the aquatic plants, an excess of light encourages the development of conferva or freshwater Algæ, which not only appear upon the sides of the aquarium, but will grow also upon the stems of the aquatic plants and retard their development, besides making the water thick and unpleasant to the eye. The more you can shade your fish-pond from the direct rays of the sun the less will be the confervoid growth, and another advantage from shading is that it keeps the temperature of the water from rising too high for the well-doing of the fish. The sun shining direct upon your somewhat shallow pond would soon render the water impure. The average summer temperature of the water should be about 50 degs., and should not vary 10 degs. more or less than this. The position of an aquarium or fish-pond is an important matter in respect to its success or failure. Your fountain, although very valuable in aërating the water, will not keep it clear while too much light is admitted. Besides shading your aquarium as well as you possibly can, you should introduce a number of fresh-water snails, as some species of these feed upon Algæ and decayed vegetable matter, and are consequently very serviceable in keeping all clean and bright, while their eggs and fry provide the fish with food. It is, however, well to be careful in the selection of these, as some of them will eat the healthy, growing plants, and do a good deal of damage. A very suitable species of water-snail for the aquarium is Planorbis corneus, the shell of which is flat-coiled in shape, of a dark reddish-brown colour, sometimes almost black, and about an inch in diameter. It is to be found in slow-running or stagnant water, and is a great favourite with aquarium keepers. There are others, as P. carinatus and P. marginatus, that are very useful scavengers in the aquarium, but are smaller. Do not use spring or rain water—that from a clear pond or river is the best. Gold fish will live but a short time in hard spring water.—S. S. G.

LAW.

Improvements made by tenant.—I took a house and buildings and 3½ acres of land for twelve months from March 25th last, with the option of a lease for seven years or of purchase during the twelve months. I have planted a lot of fruit-trees, and made other improvements, and now my wife does not like it. What is my position? If I give up possession at the end of the twelve months shall I be entitled to any compensation for the trees I have planted and for the improvements I have made? Can I remove the trees during my tenancy, as the landlord is a bad one? If I cannot get anything should I be liable if I cut the trees off?—Justice.

*** Such a contract as you made last March would probably be in writing, as if it was not in writing it would not be binding upon your landlord. It may contain express stipulations as to compensation on quitting if you do not purchase or accept a lease, and if it does contain any such stipulations your rights on the termination of your tenancy will be such as are therein provided and expressed. If the agreement provides for the cultivation or treatment of the land as a market-garden I think you will be entitled to compensation for the trees you have planted, and for certain other improvements, under the Market Gardeners' Compensation Act, although even this is doubtful, as your tenancy is not for a term of years, nor yet from year to year, but for a twelvemonth only. If you care to send us a copy of the agreement the point shall be carefully considered; but until a copy of the agreement can be seen it is futile to speculate further as to its contents. In the absence of any written agreement you can obtain no compensation under the Act, as the Market Gardeners' Compensation Act does not apply to holdings let after January 1st, 1896, except where there is a written agreement for cultivation as a market-garden, and the Agricultural Holdings Act does not apply to tenancies for the term of a twelvemonth only, and your holding is so large as not to come within the Allotments and Cottage Gardens Compensation for Crops Act, and all the compensation you can claim will be such as local custom will allow and admit. You cannot remove the trees, and should you cut them off the landlord may recover exemplary damages from you.—K. C. T.

A curious Potato.—The enclosed seems to me very curious—a Potato bearing a sort of tuber up the stem as well as at the roots. Has this been observed before?—W. H. Palmer.

*** *It is not at all unusual to find examples of Potatoes the same as you send. We can give no definite reason for it, but both Tomatoes and Potatoes are eccentric in this direction.*

Eucryphia pinnatifida is a charming shrub. It is indeed a lovely plant, and the masses of pure white blossoms are handsome in the extreme. Very pretty, too, and in distinct contrast with the purity of the flowers are the brown-tipped anthers. The plant is a native of Chili, and well-grown bushes of it would be most effective.

Poultry queries are unavoidably left over until next week.

GARDENING ILLUSTRATED.

No. 959.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JULY 24, 1897.

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FRUIT.

STRAWBERRY-GROWING.

Establishing the plants.—The soil used for this purpose consists of about a half of well-decayed manure and half loam taken from an old Cucumber-bed. This is passed through a half-inch sieve to mix it thoroughly and render it fine enough for use in small pots. In such a mixture the plants soon take root and become established. For layering, 3-inch pots are used, and these, being filled with the above mixture (no crocks are used) and taken to the beds where plants are growing, are plunged up to the rim. The best and strongest runners are then selected, one being pegged down in the centre of each pot and stopped at the first joint. These soon root, and by the end of July or beginning of August have filled the pots and are ready for planting.

Preparing the ground. — Strawberries delight in a rich, fertile soil, and for this reason special preparation is necessary, where the soil has become at all exhausted, to encourage growth as much as possible. If it is intended to plant on a piece of ground lately occupied by another crop, a liberal dressing of manure should be given, and the soil afterwards dug as deeply as its depth will allow, care being taken not to turn up any of the poor subsoil. In doing this all clods on heavy ground should be broken to pieces, so as to render the soil as fine as possible. Rows should then be marked out, in which operation the cultivator must be guided by the quality of his ground. If it be strong and in good condition he should allow a distance of 2 feet 6 inches between the rows, but if, on the contrary, the soil be shallow and light, then 2 feet will be found sufficient.

Planting.—This may seem a simple process to some, but on it the well-being of the plants depends to a great extent. No one would think of simply putting a plant into a pot and then filling the latter with soil; on the contrary, the mould is rammed firmly round the ball till all is as hard and firm as if the plant had been growing there for years. Yet how little pains is bestowed on plants in the open. They are often just stuck into the soil and left to grow haphazard, and if by chance the weather is dry at planting they may get a little water, but as often as not they have to do without it, for planting is too often delayed till it is too late in the season for the plants to make any progress. When planting, make a hole in the centre of the fresh soil that was brought, and turning the plant out of the pot, put it in so deep that the base is about an inch below the level of the surrounding ground. Then with a blunt stick ram the soil round till all is quite firm; it will then be seen that each plant is in a shallow basin. Planting should never be done if the soil is too moist to admit of its being made quite firm, for unless the roots can take a strong hold of the soil growth will be unsatisfactory. The foliage will be soft and flabby, and the crowns will not ripen thoroughly.

Watering.—Plants in pots that are prepared for forcing have every attention paid to them in this respect; then why should not those in the open ground be similarly treated? As before remarked, there is a hollow or basin round each plant, and if the weather prove hot and dry watering will be needed three or four times a week. Such weather often occurs in August and September, and when this is so special care is required if the plants are to make steady progress. They will not only require watering regularly, but will benefit by the application of weak doses of liquid-manure. If this cannot be had, sprinkle the surface of the soil round the plants with artificial manure once a week after the plants have become established, which will be in about a fortnight after planting. Assuming this to be done the first week in August, the plants would grow up to the middle of October or even later during a mild season.

Subsequent treatment.—All runners should be removed as they show themselves. Weeds must be kept down so as to admit all the light possible, and by the time the plants have done growing, large, plump, well-ripened crowns will be the result. Should the winter be severe, it will be well to cover the crowns with Bracken or other litter during hard frost, but this should be removed when a thaw sets in, or the plants will suffer from damp. Plants so treated will produce good crops of fine fruit the first season, and though the crop may not be so heavy as on two-year-old-plants, the fruit will be larger and in every way superior.

Varieties.—To get a long succession of fruit, the planting or preparation is the chief point in the production. I admit we have made rapid progress in the way of variety, earliness being the chief point; but we must not lose sight of another equally important one in private gardens—that is flavour. John Ruskin is a little later than Noble, and a Strawberry not so much grown as its merits deserve—viz., Pauline, is only three days behind John Ruskin and King of Earlies. Pauline, I admit, is not a handsome fruit, but it is of good flavour. As will be seen, there is a lack of early fruiting kinds. Vicomtesse Héricart de Thury follows these early varieties very closely, and is still one of the best Strawberries grown. It this note it is scarcely necessary to travel over ground often traversed and give the qualities of the midseason kinds, such as La Grosse Sucrée, President, Keen's Seedling if true, British Queen, and the Pine section, of which Elton is a good type. Royal Sovereign is a splendid kind, free fruiting, rich in flavour, and is every way excellent, early, and useful for pots. P. H.

SCALDING IN VINERIES.

Much of this evil may be arrested by a little shading during the hottest part of the day, and though I am not an advocate for shading, in seasons like the present it is a necessity. The well-known but not sufficiently-practised plan of giving a little air on the top ventilators at sunset is a good one, and though I have seen air left on at closing-time to save labour, it is not a good plan, as when the house is closed and damped down, with air left on, the moisture given soon evaporates. Those with iron or metal houses will need to shade partially during bright sunshine. I do not advise a permanent shade, such as a wash of any kind, as I find in our erratic climate one cannot expect full sunshine daily. Muscats are often scalded, and to get the best results I allow a little more lateral growth in exposed houses if the Vines are far apart and the ventilation defective. I am aware scorching is at times caused by too early closing, but it often happens through a deficiency of moisture accompanying such early closing. Though I do not hold with roasting of the foliage at the time named, I am not in favour of dilatory closing, as much good is done in checking insects by maintaining a genial warmth with ample moisture, the size of house and state of growth being considered. In the case of young Vines not fruiting it is necessary to be on the alert and to prevent the loss of the main leaves at the base of the buds needed for next year's fruit, and if these are burnt and the canes are hard stopped it causes these buds to burst and the fruit is lost. I know this can be prevented to some extent by a liberal growth from the end laterals, but I have known Vines which were scorched refuse to swell and perfect their earlier made growth. Buds not carefully matured often refuse to break at forcing-time, so that a little shade is well repaid with Vines near the glass.

W.

GOOD FRAME MELONS.

While the majority of Melons will grow and crop well enough under Melon-house treatment, many of them are anything but certain grown in pits and frames, especially if the summer happens to turn out wet and sunless and labour cannot be afforded for the building up of linings to preserve both the top and bottom-heat. More often than not when once the bed is made up and planting completed, no after additions of fermenting material are made, the crop of fruit having to contend with sudden and often great fluctuations of temperature and ripen off as best it can, although considering that a maximum of heat is absolutely necessary to ensure perfect flavour in Melons, the renewal of linings should be attended to, even if other work is suspended for the time being. Yet there are Melons which, on account of their free setting qualities and hardy constitutions generally, will submit to rough-and-ready treatment with impunity. Perhaps the variety which does the best of any in a cool temperature is Little Heath, a large scarlet-fleshed variety; but then its quality is so inferior, except in extra hot summers, that few care to grow it. Probably for all-round excellence no Melon is suited for the purpose so well as that good old green-fleshed variety Bromham Hall. It is still to be had true from several firms, and even for ordinary house culture is worthy of being included in the most select list. I have seen this Melon planted in pits facing south from which successional lots of forced Potatoes had been lifted, and from which most of the bottom-heat had departed. Yet they made wonderful and speedy headway and ripened off good well-flavoured crops of fruit. Of course, in this case they were not planted till June. Gunton Orange, though worthy of the best cultivation possible, is a capital sort for frame culture, set-

ting most freely in a comparatively low temperature, and swelling off far quicker than most varieties. This is doubtless one of the very best scarlet-fleshed varieties in cultivation, its useful medium size being a great point in its favour. Another good scarlet is Scarlet Premier, and hard to beat at any time. It is of oval shape and well netted. Heckfield Hybrid may well be included. Having an exceptionally good constitution, it is well suited for the purpose named, and although, as a rule, frame-grown Melons do not reach their normal size, they are quite large enough, and the flavour, even in a minimum amount of heat, is fairly good. Lastly, a Melon of recent introduction and very suitable for this kind of culture is Hero of Isleworth. This medium-sized fruited variety possesses a wonderfully hardy constitution, produces short-jointed wood, and often bears fruit on the first formed laterals. Few sorts arrive at maturity so soon as this. Notwithstanding the extra hardy characters of these Melons, success cannot be expected unless ordinary attention is given in the matter of duly thinning and regulating growth, supplying the roots with tepid water, and closing early in the afternoon, so as to husband sun-heat. J.

FERNS.

ADIANTUM FARLEYENSE.

Formerly, when Ferns were grown under green glass and heavy shading, this lovely Maiden-hair was of no service outside the stove fernery, and much of its beauty was lost, as it is only when well exposed to the light that the young fronds have that lovely rosy-pink hue. Even when well exposed they soon lose their colour if we get dull, damp weather. Another advantage in growing it fully exposed to the light is that the fronds will last fairly well when cut, and plants may also be used for decoration except in very exposed positions. Since many other Ferns have become so common, florists have had to look for something fresh, and A. Farleyense has come to the front, being now used extensively by our London florists.

Although it may frequently be met with growing luxuriantly and appearing to give but little trouble, there are many who fail to hit on the right method of treatment. I find that when plants do get into a weak, sickly state it takes a long time to get them to make a good start again, but once get them into a healthy state, with genial surroundings there is little difficulty in keeping them so. Like most other Ferns, it deteriorates with age. Plants grown on from single crowns make the finest fronds As no fertile fronds are ever produced, it has to be propagated by division. I find it best to divide young plants. If done before the pots get too full of roots, they will soon start away again; but where only old plants are to be had they may be broken up so as to secure some good roots with each division, and then be divided again after they have made a fresh start, or some of the crowns may be taken off and all the fronds cut away. If put into Sphagnum Moss, peat and sand in equal parts and kept close, giving them similar treatment to young seedlings, they will start away and may be potted singly after they have made a few fronds. By this method it takes some time to establish useful sized plants. I therefore prefer to divide young healthy plants. The compost for potting should consist of good fibrous loam, some horse-manure which has been well dried, cleansed from worms and other insects, some sand, or if the loam is heavy and not much fibre in it, a little good peat may be added, but it is quite unnecessary to use peat if the loam is good. Care should be taken that the compost is neither too wet nor too dry when used for potting. Good drainage should be given, and in potting, the plants should be kept fairly well down, but not buried too deeply. The new soil may just cover the crowns, and should be pressed moderately firm.

Few plants require more care in watering than A. Farleyense. Newly-potted plants, or those which have few fronds, will not require much, while healthy pieces with large fronds and the pots filled with roots will take more water than many plants. I believe that letting the plants get too dry is often the primary cause of their being unhealthy. It is easy to tell when a plant has been too dry, although no outward sign may be visible. On examination the under fronds will be found to be shrivelled up, and if these are left they cause damping as soon as they get a little moisture on them, and this evil will extend to the young fronds that are just starting up. Weak liquid-manure may be used after the pots are well filled with roots. A. Farleyense should never be grown under the shade of other plants or crowded. It may be stood upon inverted pots or suspended from the roof with plenty of room for the air to circulate round it. In a temperature of from 60 degs. to 70 degs. the plants will continue to grow throughout the winter. I have kept Farleyense healthy where the temperature has often fallen much below 50 degs. in winter. It is not so much heat that is required as a regular temperature, and where it cannot be sustained it is better to keep the plants on the cool side than otherwise.

I may add that where large specimens are to be grown they should be potted on from time to time, taking care that it is done before they get too much pot-bound. A.

CHRYSANTHEMUMS.

SUMMER NOTES.

Training.—For the culture of large blooms the stems of each plant should be limited to three. These are selected from a considerable number which spring from the upper part of the original stem, and caused by the growth of a bud known as the first break. All excepting the very late sorts have reached this condition. Many varieties have indeed arrived at another stage, and are pushing flower-buds at the points of three retained stems. These are called crown buds. It is much too early to allow such to remain on the plants to develop blossoms. If they were retained, in most instances the resulting blooms would be wanting in colour and character. The proper thing to do, then, is to pick out the flower-buds as well as most of the little growths which are clustered with them. Leave two growths on the point of a stem for a few days, then take away the least promising of these, and train in an upward direction those that remain. There are various modes of tying the growth of Chrysanthemums. Some growers use three sticks to each pot and train the shoots fan-shaped. We use one stick only and tie the three stems loosely to it. I think the last the better way because the wood is moved hither and thither by the wind and thus becomes ripened. One has only to be careful that the tying material is strong; then there is little danger of the stems being snapped off. Some sorts grow to a great height. The new kind, Australie, for example, will run up 8 feet or more before the season is over. This is an exception, and sticks of 5 feet in length are found long enough for the general collection. If the plants are stood in rows, as they should be, it is necessary to fix stout posts at either end, and to these fasten wires, to which the sticks may be tied. Bush-trained plants do not need such care in fastening because they do not grow tall, but, whether for abundance of flowers or a few huge blooms, it is advisable to allow the plants

Plenty of room to grow.—Satisfactory blossoms cannot be obtained if the leaves and stems grow soft. Do not attempt, therefore, to cultivate a hundred plants in a space not large enough to develop half the number properly. If the plants are trained to three stems only, each pot should be about 18 inches from its neighbour, and the rows not less than 4 feet apart. This space makes the work of watering, thinning, and so on, pleasant and conveniently done. One must be prompt in destroying insect pests. Green as well as black aphis is easily killed by dusting the same with Tobacco-powder. This is a better method than syringing with mixtures that are sometimes used too strong. Earwigs may be caught. The leaf-mining maggot again is troublesome; its marks may be followed on the leaves and the pest killed. This spreads rapidly if left alone.

Watering is perhaps the most important item of culture now. It must never be thoughtlessly applied, but during bright summer days the roots are in constant need of moisture. A fatal mistake, however, is made if we give plants water when the earth in the pots is already moist. The Chrysanthemum, although taking great quantities when the top growth is abundant, is easily thrown into bad health by an overdose. When the potting has been done properly—that is, the soil made very firm in the pots—a large quantity of earth gets into a comparatively small compass, and when once moist a considerable time must elapse before the roots can use the same. We rarely find at this time of the year, however hot the weather, that a plant requires more than once watering in a day. But what is more important, every plant does not require it at the same time. This necessitates more than one examination and makes watering somewhat laborious. Go through the collection in the morning, and if the day promises hot give a thorough watering to every plant approaching dryness; this condition may be found by tapping the pot with the knuckles if there be a doubt. When dry at the ball there is generally a ringing sound; or the pot may be lifted, and if the grower judges it right, water may be given. Then again at midday we water those plants not requiring any in the morning, and in the evening a third look through is given; but at night I do not water any plant unless the leaves incline to flag through drought. Comparatively dry earth is best through the night; this tends to sweeten the soil which is soured if kept constantly in a moist condition. The water used should be warm and soft. I have a good supply of rain water, which is used in preference to any other; but if from pipes tubs are filled and the water not used until it has stood some hours. I do not favour the use of stimulants until well on in the season. Liquid-manures are not needed if the leaves are of good colour and the growth steady and satisfactory. I mean it is not advisable to obtain stems and leaves of extra size and strength by pushing them with a lot of fertilisers. These aids are employed later to keep the plants in health when the virtues are taken from the soil by a mass of roots, and to develop blooms to their utmost capacity. If, however, the leaves become yellow in appearance and look stunted, it is advisable to assist the plants even now. Soot is invaluable to give a healthy tone to the leaves. Put a peck or so of this in a bag; place this in the water-tub. It will soon just colour the water, and in this clear state it may be used regularly. If the leaves be syringed with this simple stimulant it will have a marked effect.

H S.

Chrysanthemums—late final potting (*A. M. S.*).—The fact that your plants are in such fine condition is against the success of your proposal to defer final potting until the middle or end of August. Of course this may be done, but you must not expect to get any really good blooms. You may keep the plants growing and in a fairly satisfactory condition by an occasional dose of liquid-manure. The valuable constituents of the soil will by this time be used up, and to keep the plants going ahead you must supply in liquid form what the soil lacks. Another serious objection to potting up your plants so late is the fact that the majority of the buds of the Japanese sorts should have been retained by the time you wish to carry out the final potting, and you cannot possibly expect to get good results from such treatment. Can you not get the plants sent on before you leave your present address, and looked after by someone in your new quarters?

Chrysanthemums—different kinds of buds (*Novita*).—These particulars have been given in Gardening repeatedly, but we repeat them again for those thinking of the bud retaining next month. A "crown" bud is the second bud forming in the points of the shoots, the first bud being defined as the "break" bud, because from these first buds shoots break out from the axils of the leaves. A late crown bud may be either a second crown bud—*i. e.*, the third bud forming in the points of the shoots; or else a first crown bud somewhat late in appearing. Some varieties give three or four sets of crown buds, while others simply produce one or two sets. A terminal bud is one of a number that appear at a termination of the plants' growth, and quite a cluster generally form in this way. The best shaped and largest buds of the terminal ones are those which are most often recommended.

OUTDOOR PLANTS.

ASTILBE (SPIRÆA) JAPONICA.

This Spiræa, now often classed as Hoteia or Astilbe, has attained the wide recognition it enjoys chiefly owing to its adaptability for forcing, for which purpose many thousands of plants are annually grown. Although valuable as a pot plant for conservatory decoration and for the production of cut bloom during the winter months, it is seen at its best when growing naturally in the open garden by the waterside. Here it assumes fine proportions, and its leaves become a dark, glossy green, showing up the white, branching flower-panicles in charming contrast. The plant is perfectly hardy in the south-west, and will stand 20 degs. of frost with impunity, shooting up more strongly year by year if its site be moist enough for its liking. Its variety named multiflora compacta is considered superior for forcing, but has not the grace of the type, which is to be preferred for the decoration of the garden. S. palmata, S. venusta, S. astilboides, as well as the Dropwort, S. filipendula, and the fine S. Aruncus, are very ornamental in the open, especially where their surroundings are not too formal; fairly open, moist spots in the wild garden and the banks of lakes or streams being admirably adapted to their wants. In Devonshire cottage gardens Spiræa japonica may often be seen growing in great luxuriance, sharing the little plot with tall Campanulas, Sweet Rockets, or White Pinks, doubtless owing its presence among the old-fashioned flowers to discarded clumps that had done duty in the forcing-house, which had found their way into the cottager's hands.

S. W. F.

Astilbe (Spiræa) japonica out-of-doors in a southern garden. From a photograph by Mr. S. W. Fitzherbert.

Wild garden planting (*R. J.*).—We usually plant Narcissi in Grass by turning back the sods, making two cuts at right angles, and then pressing up and back the sod, laying it back on a hinge, as it were. We put in a few bulbs mostly round the sides of the hole, and simply turn the sod back and tread firmly upon it. The question is largely one of convenience and the ground one has to plant. If one could carefully improve the bottom it would be better for some soils, no doubt, but if the work is done in a bold way, and there is much other planting going on, it is not easy to get time to plant things in the Grass with care. Sometimes in breaking ground or carrying out changes one gets a chance of throwing in some bulbs before the surface is levelled up. Once in planting Grape Hyacinths in an uneven grassy slope we placed them on the turf in the hollows, and then levelled up with earth, and both Grass and bulbs soon came through. Once some bullocks passed an evening where they "didn't ought to" in a grassy enclosure near the house, and as their impressions were too many in one spot, they suggested a group of the Apennine Wind flower. A few of its roots were put in and the holes filled up. A wily man will see odd ways now and then and change a little the words about style of a great French writer: "All ways are good except the stupid one." When men are building sod banks for the only true field fence—a live one—is a very good time to put in a Sweet Brier, White Clematis, or anything we have to spare in the bank. In certain soils seeds may be sown betimes—seeds of Foxglove, Evening Primrose, and stout biennials. Fragile bulbs will want more care and less depth than the bolder Narcissi. Man's ways are good, though far more important than any way of planting is thought as to the wants of the thing we plant, not only as to soil, but association with the things that will grow about it in Grass, in hedgerows and rough places, for plants are not all garroters like the great Japanese Knotworts and the big Moon Daisies; and little ducks must not be set among barn rats. In putting climbers round trees it is better to plant towards the outside of the tree. Some people fail with the White Clematis, but we have not had any trouble, planting against outer branches of Yews or other trees, and protecting the stem by just putting a tall stake to support it against the tree for a few years.

Clearing a lawn.—Could you give any hints for clearing a lawn which has been much neglected for years, and the Grass is almost obliterated with Daisies, Dandelions, and other weeds? I thought of taking out as many weeds as possible in autumn, resowing Grass-seed, and top-dressing in winter. What would you advise for the top-dressing?—Elgin.

*** As your lawn is so bad we would prefer to remake entirely. After you have dug out the Daisies, Dandelion, etc., it will be so torn about that remaking in the first place would be cheaper and better. It is of little use to take out some of these weeds and not complete the job. The remainder will spread and grow all the stronger from the dressing applied to aid the Grass. Take off the top spit of soil to a depth of 3 inches, carefully lift out the remainder of such roots as Dandelion and Plantain, and then add a dressing of good compost free from weed seeds. If you burn some stiff soil, old vegetable refuse and weeds with any old hedge clippings or general garden-refuse, you will have a compost free from roots and seeds of weeds. Add a good proportion of stiff soil. Rake the whole down level, sow some good lawn Grass mixture, with the addition of an extra ounce of White Dutch Clover to each pound of the seed, roll well, and then stretch some pieces of thread across the lawn to keep off birds. Do this early in September, and if you can get it ready, and sow just previous to a shower, so much the better. As the Grass grows, dress over with soot or wood-ashes, keep it well rolled, and begin to cut it early in the spring. This will make a far better job than any attempt to renovate one so full of noxious weeds.

ROSES AND CARNATIONS IN A CHELSEA GARDEN.

Chelsea is not a rural spot. It is a sea of houses which are not blessed as a rule with gardens worth the name, but the growth of flowers is successfully managed by Mr. Toby, who lives in St. Mark's-grove, near Chelsea-station. For upwards of fifty years Mr. Toby has resided here, and in a comparatively small space grows Roses and Carnations thoroughly well. Carnations are less adverse to town life than Roses, which are not considered suitable plants for confined gardens in crowded neighbourhoods.

We were, however, surprised a few days ago to see a wealth of bloom from rows of sturdy plants, all of the Hybrid Perpetual race. As it may interest readers to know the varieties that succeed so well, we give the names. They are as follows: Captain Christy, which was remarkably healthy, Louis Van Houtte, Prince Arthur, Marquise de Castellane, Prince Camille de Rohan (in splendid health), Baroness Rothschild, Fisher Holmes, Marie Bauman, Earl of Dufferin, Etienne Levet, Mrs. John Laing, Chas. Lefebvre, Duchesse de Vallombrosa, and Sultan of Zanzibar. The plants are all dwarfs, on Brier-stock, and Mr. Toby enriches them with a cow-manure mulch, which keeps the roots cool in a garden so confined and exposed to the full sun.

The Carnations and Picotees are a pleasure to see. We noticed amongst the Picotees such favourites as Miriam, Thos. Williams, Little Phil, Clara Penson, Amy Robsart, Favourite, John Smith, and Mary. More important, however, than these were the new self-Carnations, the majority raised by Mr. Martin Smith. We noticed that few comparatively had burst their bonds, the petals being held well within the calyx. Bendigo, rich purple; Seagull, flesh colour; Exile, rose; Nabob, a beautiful apricot shade; Winifred, also of a rich apricot colour; and The Spy were conspicuous. The Spy is a splendid Carnation, pure white, with full flower that does not burst. We scarcely expected to see so many new varieties in a small garden. Amongst old favourites Germania was flowering freely, and Lothair, which Mr. Toby has had for nearly thirty years; its flowers are of a pleasing rose shade and very fragrant. Present-day raisers are too much engrossed upon size, thinking little, unfortunately, of the sweetest attribute of the Carnation—fragrance.

Besides Carnations and Roses Mr. Toby has many trained specimens of Zonal Pelargoniums, which are rare at the present time. This Chelsea garden shows how much may be accomplished by an enthusiastic love for flowers.

ROSES.

LA FRANCE AND ITS PROGENY.

Doubtless we shall soon speak of the La France race of Roses as we do now of the Dijon race. We scarcely appreciate the beauty of La France in full summer-time when there is such a wealth of lovely Roses, but when autumn approaches, and many of our favourites are almost flowerless, then it is that we value this unique variety. But it is not to praise this Rose itself—for that is unnecessary—so much as those that have been raised from it. The first to claim our attention is that splendid variety

Augustine Guinoisseau, sometimes called the White La France. It is of a delicate blush colour, reminding one at times of Viscountess Folkestone, but quite distinct from that well-known variety. It is an exact counterpart of its parent save in colour, and one cannot well have too many of it in the garden. Another very fine Rose is

Caroline Testout, a seedling from La France. It has a most beautiful shell-like petal, and is altogether a fine, bold flower, decidedly distinct from La France in form, its exquisite clear pink colour, combined with its freedom of blooming, being qualities which will recommend it to all lovers of this type of Rose.

Duchess of Albany is another grand addition to this La France race. During the summer the difference between this variety and its parent is not so marked; but in autumn it is of a very fine, rich pink when fully open, the buds being almost a light red. It a splendid variety for forcing, and the more heat given the richer the colour becomes. It is a sport from La France.

Danemark is another seedling of great merit, especially for pot culture. In form it is simply perfect and of good size, but it does not open well in a wet season. The habit is quite different from that of La France. The stems are stiff and the flowers well thrown up above the leathery foliage. Last, but not least of this La France tribe, must be mentioned that fine variety,

Mrs. W. J. Grant. Like many new Roses, it has had to contend with the excessive propagation resorted to when a Rose is known to be good. I believe most of the plants imported from America died soon after they were distributed. Doubtless when budded on some strong Briers we shall see the beauty of this fine hybrid. The colour is of a beautiful even pink of a deep shade, and the form of flower is exquisite.

Seeing all these Roses in flower as it were simultaneously, I could not but think what a fine effect would be produced if they were all massed together in one bed. W. H.

Gloire de Dijon Rose-leaves turning white.—Will you kindly give me some information why my Gloire de Dijon Rose foliage has turned white, like the one I have enclosed? It is planted by a wall facing south. This is the second year it has been planted. In planting I dug a hole 5 feet long, 3 feet wide, 3 feet deep, and filled it up with a compost of loam, cow-dung and clay—three parts loam. The sub-soil is sand. Can I do anything to prevent it?—H. H.

*** Your Rose-tree is much infested with red-spider. No method of planting would affect it in any way. You must wash well with some insecticide. Even a thorough syringing with soft water every day for a week or so will have much cleansing power, and is a useful help against this pest.

Roses on walls—As an old subscriber to Gardening I should be much obliged if you will give me your advice. I have read with much interest "B. H.'s" note on "Roses on Walls." I have for many years grown Roses on their own roots against a wall due east. The flowers until this year have been good, but each year the leaves become more and more blighted with dark brown spots in spite of every care. I am told the wall is too hot, and that is the cause. Would you advise me to take the Roses down and put up wire and iron rods, so that the air can circulate round them? The other side of the wall Roses—half-standards—do well, but they are 6 feet from the wall and in the Grass. The rosery is sheltered by trees north, east a high hedge of 30 feet, the same south, a lawn-tennis ground being between all. I live at Bexhill, some distance from the sea, on a hill.—L. L. H.

*** Your Roses are affected by mildew, brought on by the changeable weather, and rapidly increasing during the present spell of keen east winds, to which your position is so exposed. You can only wash and treat as per our advice in the issue for May 22nd, where the matter is fully dealt with. A wall is much better than any iron or wire fence.

Roses from cuttings.—I have a large number of Roses (H.P.) which I have raised from cuttings put in open border last November. Please say how I should treat them so as to have them in flower early in May if potted, also treatment after potting? I have a cold-frame.—A Beginner.

*** Lift and pot your plants carefully early in October, or as soon as growth has stopped. Give a rich loamy compost, with a little leaf-soil, stand in the frame until middle of January, prune slightly, and introduce to a gentle heat, rising from 45 degs. to 60 degs. as the season and plants advance. You do not say if you have a greenhouse or not, but a cold-frame is not suitable, being far too uncertain in temperature and dependent upon outside influences.

Polyantha Roses.—Do the Polyantha Roses grow high, and are they suitable for covering tall poles? And, if not, what Roses would do best and give the largest mass of bloom?—Miss D., *North Devon.*

*** What are generally meant by Polyantha Roses are the little Fairy or Lawrenciana section. These very seldom exceed a foot in height. There are two rampant climbers often erroneously called Polyantha grandiflora and Polyantha simplex, the more correct names of which are Rosa multiflora grandiflora and Rosa multiflora. Other rampant climbers are found in Rosa macrantha, Reine Olga de Wurtemberg, Madame Alfred Carrière, Rêve d'Or, The Garland, and Félicité-Perpétuée.

Rose Sombreuil.—Although this Rose is upwards of forty years old, it still remains one of our best free-flowering, semi-climbing White Roses, especially during the autumn months. The shoots are produced about 3 feet in length, and terminate in a bunch of three to six lovely Roses. The form of the flower is globular, the petals rather loosely arranged somewhat in the manner of Souvenir de S. A. Prince. I prefer Sombreuil to the last-named variety for garden decoration, as there is no tendency to hang the head, which is rather a peculiarity of Souvenir de S. A. Prince. In Sombreuil there is just a tinge of blush-pink as autumn approaches, which, if anything, rather enhances its beauty. It would be admirable as a standard or semi-climber on a low wall.—W.

China Rose Cramoisi-Superieur.—In the rage for large full blooms as seen at exhibitions one is apt to pass by many beautiful Roses. The Rose noted may be classed as such, for a richer scarlet-crimson it would be difficult to find. It is of moderate growth as a dwarf plant, but I saw it growing capitally budded on Briers about a yard high. In this form it is a very showy object, being exceedingly free-flowering.—T.

Rose Duchess d'Auerstadt (Tea).—This climbing Rose is as vigorous as Rêve d'Or. The flowers are large and of a beautiful golden-yellow, shaded at the base with a cinnamon or nankeen tint. It would certainly be a fine Rose for covering a south wall quickly, for it has the true scandent habit which is not always found in these so-called climbers. It would require careful protection in a hard winter, for it is not hardy, but it will amply repay for any extra attention in this respect.

Rose cuttings (*J. D.*).—In the course of a few issues we shall give an article dealing fully with Rose propagation from cuttings. Please look out for this.

Mildew on Roses (*M. M.*).—Mildew is a disease whose origin it is not always easy to trace. Plants in shady places are more likely to be affected by it than those that are well exposed, and anything which makes the plants unhealthy predisposes it to an attack. There are various remedies. You can syringe, and then dust with flowers of sulphur, or apply sulphur when the leaves are dry. Syringing with water in which soft-soap (2 ozs. to the gallon) has been dissolved has been recommended as a remedy.

Seedling Briers (*A. G. N.*).—You must raise seedling Briers from hips. Fresh young shoots from an older Brier-root will do for budding, but will not transplant so well as a healthy young seedling.

ORCHIDS.

HARDY LADY'S SLIPPERS.

Among hardy terrestrial Orchids the Cypripediums are pre-eminently the most beautiful. They are easily grown provided a few very simple cultural details are attended to; and, simple though these may be, they are at the same time absolutely essential for the continued success of these plants. Primarily their chief requirements, perhaps, and excepting minor details, are shade, moisture, and peaty soil. For such kinds as macranthum, spectabile, californicum, and others, a moist peaty soil and cooling shade are absolutely necessary. In all large gardens, low-lying, shady spots are of a surety to be found, and even if non-existent, may at little trouble and expense be prepared for these and plants whose requirements are similar. It should be remembered that this class of plants flowers for the most part in summer, and starting as they do rather late into growth, provides ample opportunity for other things, particularly early flowers, and an equal chance of late things also, to flower without in the least interfering with the subject of these remarks. In this way what was really meant for a bed of hardy Cypripediums may readily be converted into a peat bed for many things, and thereby provide an interesting array of choice and beautiful plants for the greater part of the year. As an instance of what I mean by this mixed arrangement of peat-loving subjects, the cultivator may embrace such things as Trilliums for very early spring, especially grandiflorum, erythrocarpum, and californicum, to be succeeded by Anemone nemorosa cœrulea, as a carpet here and there, and a few masses of Primulas, such as Sieboldi varieties, rosea, cashmeriana, and others; then for May, the yellow Chrysobactron Hookeri, to be followed a little later by the earliest Lilies, such as pomponium, pulchellum, and the orange carniolicum, with which would flower the masses of Cypripedium spectabile. Then for a later display other Lilies may be relied upon, which would make the whole beautiful and interesting for a long time. But if it were intended to embrace the majority of the hardy Lady's Slippers, these alone would require a bed of several feet across, and much would depend on individual taste and other things. The following are among the best of these plants, and as a rule quite successful in the open garden in the position indicated above:

Cypripedium acaule (the Stemless Lady's Slipper).—The specific name here given is rather difficult to understand, since the beautiful purple-rose blossoms are borne on stems about 6 inches or 8 inches long. The plant is a native of North America, and is usually flowered from collected roots and rather difficult to establish in this country.

C. Calceolus (English Lady's Slipper).—The only British representative of the genus, and almost extinct as such, though abounding in Germany, Switzerland, and other places, and may be obtained quite cheaply in the autumn of each year. The fragrant flowers are produced on leafy stems 1 foot or more high, the sepals and petals of a purple-brown hue, with rich yellow labellum. This species grows quite freely in loamy soils, particularly such as contain a certain amount of lime, and shade is not absolutely needful for it. Protected from cutting winds, this is a charming plant in early spring and one quite easy of culture, and being inexpensive may be freely planted.

C. arietinum (Ram's-head Cypripedium).—This is a curious little plant, possessing no real merit from a garden point of view, though full of interest botanically. Its flowers are insignificant compared with those of the best members of this beautiful race of plants. Native of North America.

C. californicum.—This is a rare and beautiful species, very difficult to establish successfully. The flowers are white and tinted rose, the sepals of a greenish-yellow and petals pale yellow. This species should be grown in peat and Sphagnum Moss in moist, shady places.

C. candidum (white Lady's Slipper).—This is another with small flowers of no great value except to the botanist. It is a rare species from North America, growing 1 foot high, the sepals and petals purple and white, the labellum pure white. Should be grown in shade in moist, peaty soil and decayed leaves.

C. GUTTATUM (Spotted Lady's Slipper).—A beautiful and rare species from Siberia and parts of Russia, the plant attaining 1 foot or more in height, and producing on leafy stems its pleasing flowers. These latter are of fair size, the labellum white and distinctly spotted with rosy-purple. It is rare under cultivation and very difficult to

Siberian Lady's Slipper (C. macranthum).

keep after the first year. This species is very distinct in its roots, the latter not unlike the creeping underground stems of the Lily of the Valley. In a very large consignment received some years ago only one or two plants produced flowers. Could this species be freely established, it would figure among the best of the group.

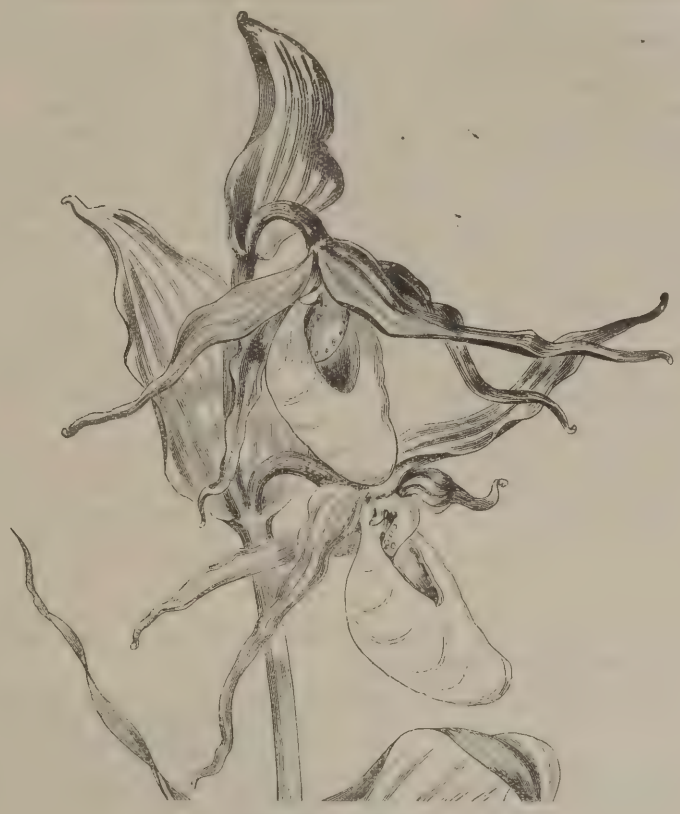
English Lady's Slipper (C. Calceolus).

Those who attempt its culture should grow it in very shady spots in peat and well-decayed leaves, keeping it as cool as possible and in comparatively dry places.

C. JAPONICUM (Japanese Lady's Slipper).—A neat and beautiful species, perfectly hardy, and having handsome flowers, in which the sepals

Spotted Lady's Slipper (C. guttatum).

and petals are greenish-purple and the labellum white. The plant is not so difficult to cultivate as some, and may be grown in peat and loam in equal parts, with shade and summer moisture. Though quite hardy so far as winter frosts are concerned, it needs protection or a sheltered spot from the harsh winds of spring.



Cypripedium occidentale.

C. MACRANTHUM (Large Lady's Slipper).—This is a handsome species from Siberia, with large flowers of a uniform purplish-rose colour with deeper coloured veins. Under cultivation it succeeds best in loamy soils in much the same way as the English Lady's Slipper.

C. OCCIDENTALE (MONTANUM) (Mountain Lady's Slipper).—A pretty species growing 18 inches high, with slightly pubescent leaves and from one to three flowers on a stem. The petals are brownish-purple, labellum white; it should be grown in damp peat and shade. Native of California.

C. PARVIFLORUM.—This species, also pubescens, has the outward aspect of C. Calceolus, but the flowers are much smaller. Both kinds are of easy culture, having brownish sepals and pale yellow lip, and differ in the size of the flowers and other minor details. Should be grown in loamy soils with leaf-soil added, and, planted in a good depth of this, quickly becomes established in shady, sheltered places.

C. SPECTABILE (Moccasin-flower).—Undoubtedly the most beautiful as well as the showiest, and at the same time most easily grown of all the tribe. It is impossible to over-praise the merits of this chaste and lovely species, for it is at once the most satisfactory of all either on a large or small scale. It loves a deep bed of peat and decayed leaves, with ample shade overhead and constant cooling moisture at the root, and in such a position quickly establishes

The Moccasin-flower (Cypripedium spectabile).

itself and flowers freely each year. In a moist, boggy bed of peat with a trickling stream keeping the bed ever moist I have grown this plant to perfection, the large masses planted intact as received producing in some instances a dozen of the leafy spikes, many bearing two flowers. The plant is rather variable in the flowers, some being very rich and deeply coloured, and others nearly pure white, exceedingly chaste and delicate. In all its forms it is a most delightful plant, and as such should be made much of in English gardens. The best time to plant this unique species is late autumn, as soon as the fresh importations are to hand, and, having carefully tested the vitality of the roots, which should be of a creamy-yellow tint if fresh and healthy, plant without further delay. Any brown, decayed roots should be cut away and the fresh roots spread out horizontally, covering them and the strong, plump crowns with peaty soil. In the finest masses the crowns are nearly buried from sight in an accumulation of leafy matter, while usually the old flowering stems and growth of the year are adhering thereto. Well established, it attains 2 feet high and more, considerably so in its native home, where it is found in boggy woods, moist meadows, and the like, conditions we must imitate if we would succeed in its culture. It is a prince among its kind, and one wonders why some attempt has not been made to hybridise this with such as macranthum, Calceolus, or pubescens, as a series of hybrids of these could not fail to be of interest.

E.

Dendrobium Bensoniæ.—A nice plant of this favourite Dendrobe is still in flower, and it is among the prettiest of the deciduous kinds at this season. The blossoms are freely produced upon the last season's pseudobulbs, which are erect and about 15 inches high. The sepals and petals are white, the lip white in ground colour, marked with two blotches of dark maroon and a yellow throat. Plenty of heat and moisture and a clear bright light are necessary while this Orchid is making its growth, and when the terminal leaves have formed it may with advantage be placed outside by day in the full sun. It requires a long rest in a cool, dry house—if suspended from the roof so much the better—and after all the foliage has fallen it must be kept quite dry till growth reappears. If by any means the bulbs are not well ripened this system of drying off entirely must not be practised, but if firm and hard, as they should be—and as they must be if they are to flower freely—no shrivelling will occur. Badly ripened plants need careful winter treatment, or in all probability the new growth will be but weak. Some growers on account of this have set up D. Bensoniæ as a difficult plant to cultivate, but give the plants all the sun possible in autumn when the leaves are falling and keep the roots in as small pots or pans as they may conveniently be got into, and but little trouble will be found with it for a good many years after being imported.

Cypripedium Sedeni.—This pretty hybrid is again in flower, and the progress made by the plants, as well as the number of flowers produced, is remarkable, and shows the vigour of hybrid kinds. Grown in pots of peat, loam-fibre, and Sphagnum in about equal proportions with plenty of crocks and charcoal, it does well in an intermediate-house. It seems never at rest, for as soon as one set of growths is complete, another begins to form, and almost every one carries a flower-spike, on which the blossoms are produced over a long season. It is, perhaps, the most popular of all hybrid Cypripediums, and a variable plant as regards colour.

Lælia elegans prasiata.—This may be regarded as one of the very finest forms of this variable kind, unfortunately rather more rare than most of the varieties. The flowers are each nearly 6 inches across, of very good form and substance, and distinct in colour. The sepals are light magenta-purple, the petals deeper and yet rather brighter than the sepals. The side lobes of the lip are pure white, the blotch in front a glossy purple-crimson. It usually blooms later than the paler coloured forms, making a fine show if freely bloomed and requires much the same culture as L. purpurata.

Phalænopsis violacea.—This is a very distinct and charming species, bearing a short scape, with several of the pretty little blossoms successively produced upon it. The sepals and petals are light yellow at the tips, deepening to a rosy purple shade at the base, the lip being bright purple with a yellow centre. The flowers last well in good condition, and have the additional recommendation of being pleasantly scented. Grown in baskets of clean Sphagnum Moss and charcoal in a warm, moist house, the plants will be satisfactory if judiciously attended to, a free, yet solid, growth and a resting, but not drying, season being required. It was introduced in 1861 from the islands about the Malay Peninsula.

THE WHITE LILY IN FRANCE.

As I am a constant subscriber to Gardening, which I find most interesting and helpful, I think, perhaps, you may care to see photographs of groups of Lilies in my old-fashioned walled garden here. Last year they grew from 6 feet to 7 feet high, but this season they have been quite a foot shorter. I also send a photograph of a bed of white Gladiolus The Bride, which has been very lovely. The bulbs I leave in the ground all winter, with only a top-dressing. In the same bed I have planted clumps of Anemone japonica to come on later.

F. Mordaunt-Jones.

Madonna Lilies in the South of France. From a photograph sent by Mr. F. Mordaunt-Jones, Rue Gambetta, St. Jean de Luz.

*** The accompanying illustration shows one of the charming groups of White Lily (L. candidum).

Tufted Pansies dying off (*J. H. T.*).—We fully sympathise with you and all growers of the Tufted Pansies (Violas) in the loss of their plants during the height of the flowering season. Upon close inspection, however, there may be found traces of an insect at the roots, or rather the main stem. In many instances the plants fall a prey to wireworm, while in other instances it is the result of the depredations of the leather-jacket grub. Either one of these evils is bad enough in itself, but the two in combination may cause immense mischief and quite alter the appearance of the hardy flower-garden. The plants sent to us appear to be affected by both the wireworm and the leather-jacket grub. There is little chance of a remedy being applied until after the flowering season. In the autumn the soil should be turned over and left in a rough condition during the winter, as by these means the frost should get well into the soil and thoroughly pulverise it. Any insects in the soil would then have little chance of surviving such treatment. If the garden is much infested with these pests still more drastic measures are necessary. A layer of gas-lime may be spread over the soil in the autumn and left thus throughout the winter, digging this in early in the spring. By the same rule the free use of soot may be made to answer the purpose, this being sufficient in many instances to eradicate the evil. Two of the plants sent to us appear to be sound enough, and we can only attribute their failure to a disease at present undefined. Any ground in which Pansies have been growing for two or three seasons seems to get what is known as "Pansy sick," the plants dying off one after the other in the beds without there being the faintest trace of an attack of any insect. Those who grow these useful plants on a large scale, therefore, now invariably change the position of the plants each year, or two years at the most, planting other subjects in the position formerly occupied by them, and returning there again after the lapse of a season. The Tufted Pansy is a gross-feeding plant, and very quickly absorbs a large proportion of the soluble properties of the garden soil, and, unless some good fertiliser can be placed in the soil to return to it what has been taken from it in large quantities, often causes failure. It is surprising how far-reaching are the roots of these plants. It is only when we can properly appreciate this fact that we can fully understand the value of an application of some thoroughly reliable concentrated fertiliser. Wireworms may be trapped by placing pieces of Potato, Carrot, or anything of a somewhat similar substance, in pieces in different parts of the garden, their position being denoted by a small stake. These may be inspected at intervals of half a day, when these troublesome insects may often be found attached to them.

Constructing mound for trees and shrubs.—Will you be good enough to advise me as to the quickest and least expensive method of constructing a mound on which trees and shrubs would grow so as to form a screen? In the storm on the 24th June I had a large number of old Elms blown down, in one place exposing a corner of the grounds opposite some buildings which were hidden before the storm, and which I am anxious to grow out again as quickly as possible. Could the "brush," with the leaves and smaller clumps of trees, be utilised, with some chalk and brick rubbish, as a foundation, and a surface of 2 feet or 3 feet of soil? Would the "brush" and stumps be injurious to the growth of the young trees?—Robert Griffin.

*** Never bury roots or wood of any kind. We have so often experienced sad disappointments from this. Such roots and wood soon decay, and even while sound are a great cover to insect pests. Many a mound and rock garden has been ruined by the numbers of insect pests harboured. You do not say if the desired cover is to be permanent, or only for the present summer until proper planting can be done. It seems a pity to make a temporary mound of soil. Why make a mound at all if plants are to take the place of the Elms later on? There is nothing you can put in now that would provide sufficient screen before late autumn, and by then you could commence the planting of permanent trees. If you must have a mound, throw up some of the surrounding soil, previously deep digging the present surface and removing old roots as far as possible, and then add loam, decayed garden refuse, etc., until the desired height is reached. Lombardy Poplars will grow up as quickly as anything, and form a better screen in a shorter time than more Elms; but if you want evergreens, try the Cupressus macrocarpa, being careful to use plants from pots and which have not made tap-roots through these. We should prefer the evergreens, and the one recommended can be cut at will.

Traps for slugs and snails.—Some of the readers of Gardening who may be much troubled with these pests may be glad to know of the following plan, which I have found most successful. I lay little heaps of bran about, and towards dusk, when the slugs come out to feed, they make straight for the bran, as they are very fond of it. The heaps are soon covered with them, and one can then go round and pick them off and destroy them. After a shower they come out in still greater numbers.—Abbey.

HERBACEOUS AND TREE PÆONIES.

Herbaceous and Tree Pæonies are amongst the most gorgeous and interesting plants we possess. And there is no doubt that all named varieties of them do not flower equally well, and that amateurs are often disappointed because they do not know which ones to buy. Many people have said to me that they bought a collection of them some years ago, but that they never flower. It must certainly be annoying, and I should like to let intending purchasers know how to avoid this.

For one thing, Pæonies must have good soil, and if it is naturally poor it must be fed with manure. In strong soil even they like a liberal addition of farmyard-manure thoroughly well dug into it previous to being planted; but in poor soil I am sure the manure ought to be in equal proportion to the soil. In either case the bed in which they are planted will need a good, deep top-dressing of farmyard-manure every year, and the best season to put it on is in the spring, when the leaves are a few inches high. This for two reasons: One is because then is the time for it to benefit the plants by feeding them just when coming into bud; and how about the later, June-flowering section of Pæonies? I can recommend all I am going to name. I have many which do not flower myself, some which flower only moderately well and only in some seasons, and those which never fail with me to bloom freely. Some of these flower a little earlier than the others, but these earlier ones will not be over before the others bloom. I will mention the earlier ones first: Caroline d'Allain is a pale creamy-pink, a beautiful flower, and Marie Houillon is very like it in every way. Jeanne d'Arc has pale pink outer petals and a yellow centre; it is very beautiful; and Whitleyi, which has a very yellow centre and a pale pink outer rim of petals, is perhaps the freest flowering and most beautiful of them all. Annie Fache is a pale pink, and so is Eugénie Verdier, and I can really recommend them both. L'Elégante is a little deeper in shade, and is a very good one, and Comte de Manteuil and Duquesclin are pink also, and desirable from every point of view. Taglioni has very large flowers, dark pink outer petals, and pale pink centre; and Etendard du Grand Homme is a very deep rose self, which flowers freely and has large blooms. Alba-plena is an erect and free-flowering white. Reine des Françaises is a white also, with a yellow tinge, with here and there a streak of deep crimson. I consider it one of the best, and candidissima is the most free-flowering white Pæony I know; it has a faint primrose tinge.

A very little later than those mentioned, Mme. Loise Mère comes into flower, and there is no Pæony I admire more. It is a lovely very pale pink self, and bears a great quantity of large perfect flowers on erect stems. Couronne d'Or flowers at the same time, and is a beautiful Pæony. It is pure white, has a faint streak of red here and there, and bright golden anthers peep out amongst the centre petals with lovely effect. It flowers freely and has a good growth. Marie Lemoine is another pure white, which everyone admires much. Like the others I have named, it flowers freely and grows well. It has stiff stems.

There is no doubt Pæonies like moisture, and flower better in a place where they can get it; but the bed in which I grow most of mine is not a moist one, and only if the weather is very dry indeed, when the buds are swelling, do I have the bed watered. If I do have it done, though, I have it done thoroughly, and ascertain for myself that the water given has been sufficient to go to the bottom roots. The mulching given in spring, being fairly deep, helps to keep the bed moist, of course, and that is one reason why I consider that a spring mulching is very important.

Pæonies ought to be staked up before they come into flower. If once they are allowed to fall down they can never be well staked afterwards, and the flowers, being so large, are apt to break off unless tied up. Even if they do not break off they are naturally not improved by coming into contact with the soil beneath them.

I am quite aware that the colours I have given do not always tally with those in the catalogues of nurserymen; but they will be found to be the real colours of the Pæonies mentioned by me.

The Tree Pæonies (Pæonia arborea) do not so quickly make strong plants as the herbaceous section here in Cheshire; but they are well worth a little extra patience, and my experience is that they are quite hardy. They do not die down in the winter like the Herbaceous Pæonies, but grow into a bush, and nothing in a garden will give the possessor of it much more pleasure than these Tree Pæony bushes after they have been planted a few years, have grown large, and are crowded with their huge and beautiful flowers. Even in a young state many of the named varieties will flower. Good kinds are Beauté de Canton, large flowers of a lilac tinge; Bijou de Chusan and Lactea are beautiful white ones; and Louise Mouchelet, Mme. de Vatry, Reine Elizabeth, and Uraine are three of the best of the rose-pinks. I have tried a great many of them myself, and have found these flower freely, have large flowers, and survive a hard winter with me. Of course, I expect most of the named kinds would do well in the South of England or on the west coast (I have seen enormous bushes in gardens in North Wales), but I like to write only of things I have proved by personal experience. I find they are unlike the Herbaceous Pæonies in this respect—they prefer a fairly dry to a moist soil, and though they like plenty of nourishment I do not think it well to give them quite so much manure at their roots as the herbaceous ones require.

It is said in the advice given in gardeners' catalogues that Tree Pæonies require protection from frost and severe winds when their leaves are in a young state in spring; but unless the spring is very unfavourable they will do very well without, and mine never get any protection. I have a great objection against plants that are

Tree Pæony at Abbot's-Leigh. From a photograph by Mrs. Albot, The Priory, Abbot's-Leigh.

and the second, because the thick foliage will quickly hide the unsightly manure. I think the best distance apart to plant Herbaceous Pæonies is a yard all ways, and, personally, I prefer them in a bed by themselves (the early and late sections separately); they flower and thrive better so than when they are amongst plants. Of the

Early section, in the single European varieties, Decora elatior is a good kind, with a stiff growth, free-flowering habit, and a fine, rosy tint. Arietina Northern Glory is a beautiful one, and has foliage of a lovely grey-green tint. It has a fine habit, and flowers freely, and is of taller growth than some of the others. The flowers are large and very lovely. Officinalis blanda is also very fine, and, like the others, flowers freely; and so does officinalis rosea, the flowers of which are of a deeper shade than those of officinalis blanda. Officinalis anemonæflora is one which everyone should have. I have experience of many other early-flowering ones, but find those I have mentioned are the most free-flowering and satisfactory. In the same bed with them can be planted the old double red, double rose, and double white European Pæonies. They will flower at the same time, and are of sturdy growth.

supposed to be hardy, but which really need great coddling and care. There is more trouble than pleasure about such plants, and when there are so many plants which will flourish and be beautiful without protection, I never can see the use of trying to grow tender plants or shrubs.

Mrs. Robert Jocelyn.

*** The photograph shows a splendid specimen of the Tree Pæony in the garden of Mrs. Abbot, The Priory, Abbot's-Leigh. It bore this year four hundred flowers of a clear pink colour.

TREES AND SHRUBS.

How to propagate Aucuba japonica (*Yorkist*).—The Aucuba is generally increased by cuttings taken off about the middle of August and inserted in a bed of sandy soil, and covered with hand-lights or frames. The cuttings should be several inches long, and the lower leaves removed. Be sure that the base of each cutting is made quite firm in the soil. A watering overhead with a fine rose water-pot should be given occasionally. Protection from the sun can be afforded by means of mats or tiffany spread over the glass. By spring roots will have been formed, and it will then be necessary to transplant into nursery rows. It can also be propagated by layering. This operation should be done about August, and severed from the parent plants in March. We do not recommend propagation by seed, as the seed frequently takes two years to germinate.

When to prune Thuja Verveneana (*E. S. Whimple*).—It will be quite safe to trim your Thuja now. It is a good-tempered conifer, and bears the knife well. Cut the loose branches back so as to make room for young and more vigorous growths. If the plant is handled with care it will soon break away again and form a well-balanced head. The perennial Peas are readily propagated by division of the roots in spring. Also by seeds sown in the open ground.

Rhododendron campylocarpum in Argyll.—Since this beautiful yellow Rhododendron was introduced from Sikkim in 1851 it has, in the majority of gardens, been treated as a greenhouse shrub. Though often described as such it is hardy, and under favourable circumstances where the climate is mild, will grow and flower in the open without the aid of protection. On the river bank here is a beautiful specimen, 10 feet high, which is thoroughly established in a peaty soil, and grows freely and flowers every season.—G. S. Macdonald, *Poltalloch Gardens, Argyll.*

The variegated Wellingtonia (*Llewellyn*).—Though by no means a common plant, it can be supplied by nurserymen who grow Conifers and hardy shrubs on an extensive scale. Many large firms have it, but we do not recommend individual men. In suitable positions and good, well-drained soil, this Conifer makes a handsome specimen.

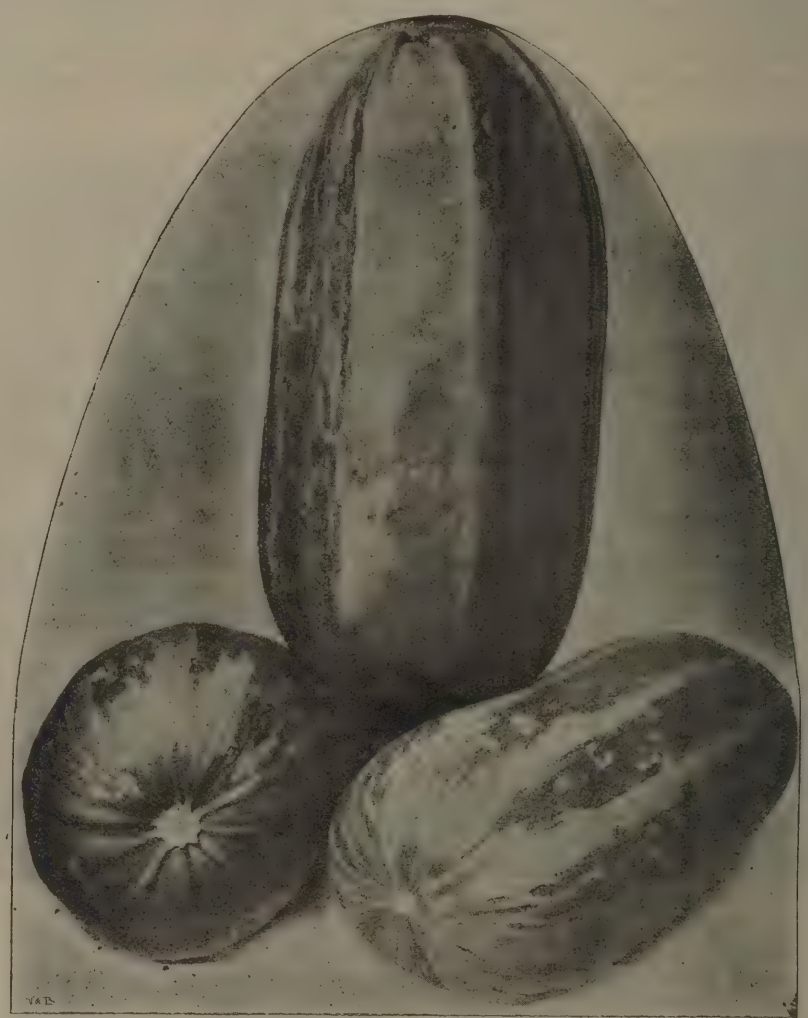
Cottagers exhibiting vegetables.—There is room for much improvement in the manner in which cottagers, as a rule, stage their produce at local exhibitions. In some few districts, and where a society has been in existence for a good many years, the above-named class seems to have taken a leaf out of the professional gardener's book, their collections, instead of being huddled together on an ordinary-sized tea-tray or on the table, being neatly-arranged on a green wooden tray sufficiently large to admit of fair space between each variety, a garnishing of Parsley giving the whole a neat and finished appearance. A cottager who takes these pains stands a far greater chance of winning a first prize than his slovenly opponent. Of course, all single exhibits cannot be garnished with Parsley, but in the case of Potatoes, Tomatoes, and a few other things, which may be laid regularly on a cushion of Moss or some soft material, the intervening spaces being filled in with Parsley, a great improvement is effected. I think that by a little endeavour on the part of the committees of country shows this rough-and-ready mode of staging might be done away with. If a special prize were offered for the best collection of vegetables in which neatness of arrangement was to form a special feature, an all-round improvement would soon be visible.—C.

Genista tinctoria fl.-pl.—For producing a fine trailing mass of flowers of a golden-orange hue at this season this plant has perhaps no equal. Of special value is the fact that it is also well suited for dry, hot positions.

THE KITCHEN GARDEN.

VEGETABLE MARROWS.

At this season the amateur who grows Vegetable Marrows will reap the benefit of his labours if ample attention has been paid to the plants in the way of early planting and getting a sturdy growth at the start. My note on varieties earlier in the season will have prepared the way, and I will now briefly refer to the culture and the uses to which the Marrow can be put. It may be used as a fruit or vegetable, and for the latter the fruit should be cut quite young and boiled whole, not left until the seeds form. As shown in the illustration, Marrows may be grown to a good size, and in any garden, providing there is light and sun, as the shade makes the plants tender, encouraging, too, an elongated growth and few fruits. It may be asked—why write on position for plants now, when they are growing freely, and anyone must make the best of position? Simply because failures may be prevented in future. The plants given ordinary culture are much more profitable than those grown on too strong or in rich soils with a mass of manures. Many amateurs (gardeners also) think the more manure employed the better results are obtained. This is a mistake, as with plants on a mass of rank food there is a gross growth, and little, if any, fruit. We are often asked why do our Marrows grow so strong and fruit so sparingly? The reason is they are often given too much food at the wrong time. If fed more when full of fruit there would be better results. In some cases I have seen several barrow-loads of manure for one plant, in others they occupy the whole manure-heap. In this latter position they may answer a good purpose as a screen, but as fruit producers they are useless. I am a strong advocate for food given at the right moment, but not when the plant is young and only forming leaves. A little food at the start is beneficial, but not excess of any kind. Far better feed when in fruit. Few foods are safer than liquid-manure; not poured over the leaves, but to the roots, and a thorough watering overhead after a hot day will work wonders, as it keeps red-spider at bay and promotes a strong, clean growth. It is well to use clear water over the foliage. These plants may often be grown to advantage on a fence. I have seen splendid results by growing on a raised position, and allowing the plants to drape a bank or bare wall. Of course, grown thus, very large fruits are out of the question, neither are they needed. For preserving very old fruits are not required, and it should be understood when plants form seeds they cease to produce a succession of fruit, as their energies are directed to seed formation. Much may be done by stopping gross shoots and getting more fruit. At this season, when the sun is very hot, it is a good plan to mulch the surface, and retain the food or moisture given, as the plants root so near the surface they soon suffer from drought. The dwarf growers are most suitable for thin soils, as these require less time to mature and fruit earlier. These are best planted much closer than the long, trailing varieties, and the fruits should be cut quite small. Pen-y-Byd is a very good one for this work, and less grown by amateurs than it deserves. W.



Vegetable Marrow Long Variegated.

Cabbages.—How difficult it is to secure really good stocks of Cabbages from small traders. Doubtless they get the best they can, but they seem to adhere to old or stereotyped varieties, and do not favour the better selections which the best seed-houses hold. It is annoying to see on allotments and in small gardens fairly good samples and very coarse ones intermixed, painful evidence of lack of care in growing and selecting. It is very difficult for small growers to save their own Cabbage seed true, even if they do get plants of the very best stocks, as any other form of Brassica growing near will do exceeding mischief in fertilising harmfully. If growers of every class would ignore large-headed

and coarse-leaved Cabbages entirely and get and grow only select stocks of the small or medium-sized and earlier varieties, planting in such case closer together, the gain would be great. It is now being more generally understood that the best cooking quality in all vegetables is found in those early to mature and of medium size.—A. D.

FLOWER SHOWS AND SOCIETIES.

National Amateur Gardeners' Association.—On Saturday, July 3rd, this association held their first public exhibition and garden-party. Although the display made by the members was not a very extensive one, the exhibits were thoroughly well-grown. The exhibition was held in the large marquee. Flowers, fruit, and vegetables were each represented. Roses were a pleasing feature, the class for six Hybrid Perpetuals being the best filled. In this Mr. Geo. Moules, Hitchin, Herts, was placed first with flowers of large size; the second prize was secured by Mr. E. R. Smith, Muswell Hill, N., who ran the first prize lot very closely. A class for twelve Tea Roses, in not less than six varieties, brought out a beautiful stand of flowers from Mr. G. W. Cook, Torrington Park, North Finchley, who had fresh and well coloured flowers. The most noticeable blooms were: Mme. de Watteville, Innocente Pirola, Mme. Hoste, Princess of Wales, Honble. Edith Gifford, and Mme. Cusin. These easily secured for him the premier position. Mr. John Bateman, Highgate, was placed second. In the class for nine trusses Roses distinct: Mr. E. R. Smith was an easy first with superb examples of large size and beautiful colour. The "Pye" championship for twelve sprays of Pansies distinct went to Mr. R. T. Dougall, Walthamstow, with fresh flowers arranged in neat sprays with foliage. The best sprays were Maggie, Nellie, Mrs. C. F. Gordon, Nerah May, and Florizel. In the class for six sprays, Mr. B. G. Sinclair, Highgate-road, N.W., was an easy first with fresh blooms of good size. Hardy flowers were well shown, the competition being very keen, and many excellent exhibits staged. Classes were also provided for Tuberous-rooted Begonias in a cut state, Tufted Pansies arranged in saucers, Sweet Peas, and Zonal Pelargoniums. Plants were also shown of Double and Single Tuberous Begonias, Coleus and Tufted Pansies in pots, the latter by Mr. B. G. Sinclair, who was awarded the Royal Botanic Society's bronze medal. Mr. J. W. Jones, Woking, staged two beautiful exhibits of cut Roses and cut flowers, each in the pink of condition. Mrs. A. J. Rowberry, S. Woodford, had a large table of cut flowers arranged for decoration, and Mrs. Nellie Morris, Enfield, also made a neat display of a similar kind with Iceland Poppies. Miss Amy M. Harman exhibited a pretty hand-basket arranged with Coreopsis grandiflora and a fine vase of Sweet Peas. The majority of the vegetable exhibits came from Messrs. F. M. Vokes and H. Victor Vokes, of Sholing, Southampton. Salads as well as others for hardy fruits came from the same gardens. The display made by the members would have been much more representative had the exhibits been arranged earlier or later in the day, Saturday being rather an inconvenient time for many.

The trade ably supplemented the efforts of the members with an interesting and varied display. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, S.E., exhibited a group of Double and Single Begonias, arranged in a pleasing manner with pretty foliage plants. Messrs. H. Cannell and Sons, Swanley, Cannas, including many very fine sorts. Mr. W. Rumsey, a large collection of cut Roses. Mr. W. Baxter, Woking, Tufted Pansies arranged in sprays. Messrs. W. Cutbush, a charming group of Malmaison Carnations, which were much admired. A very beautiful collection of Sweet Peas from Messrs. Dobbie and Co., Orpington and Rothesay. Hardy flowers were shown in representative collections by Mr. T. S. Ware, Tottenham, Messrs. Barr and Sons, and Messrs. J. Laing and Sons, the latter firm also exhibiting a nice batch of Carnations. The Exhibitors' Supply Stores, Kingston-on-Thames, made a very interesting display of all kinds of exhibitors' appliances, such as one rarely sees represented—cups and tubes, Rose and Pansy-shades; in fact, all that an exhibitor requires. In the corridor, greenhouses, frames, and horticultural sundries were exhibited by several of the leading firms, thus helping to make the exhibition still more interesting for the amateur. Mr. T. W. Sanders, Mr. Leonard Brown, and the committee are to be congratulated on their first efforts in this direction.

Winton and District Horticultural Society's Show will be held on August 2 next at Rush Corner, Bournemouth.

GARDEN PESTS.

THE BUFF-TIP-MOTH (PYGÆRA BUCEPHALA).

This moth is very common, and very widely distributed. Its caterpillars are very voracious, and at times do much damage to the trees on which they feed by stripping them of their leaves. They usually attack forest trees, Oaks, Limes, Elms, Hazel, and Plum-trees being their favourites. They are gregarious, and feed together in considerable numbers, so that a small branch of a tree may be found entirely denuded of its leaves, and the rest of the tree quite uninjured. But when a tree is infested with several of these families the injury caused to it is considerable. Of course, the most damage is done to small specimen trees. Fortunately it is these that are most easily freed from the caterpillars, for it is useless to attempt to try to keep large trees free from them. The easiest way of destroying the caterpillars is by shaking them off the branches. If the branch on which they are is given a good jarring shake they will fall tolerably easily. An old birch broom at the end of a long pole is a most useful implement for this purpose, as its weight will help to give the

The buff-tip-moth and caterpillar.

necessary blow to a bough some distance from the ground. When the caterpillars fall the best thing to kill them with is the back of a spade, but one's foot is also very useful for this purpose, though it is not a pleasant performance. Syringing with the extract from 8 oz of Quassia-chips, 10 oz. of soft-soap, well mixed in 10 gallons of water, or ½ pint of paraffin-oil, ½ lb. of soft-soap, thoroughly mixed together with a little hot water, and added to 6 gallons of water and kept well stirred, if done with some force would doubtless prove useful. The buff-tip-moth lays its eggs in June or July on the leaves which are to serve as food for the young caterpillars. They are laid in batches of from thirty to sixty, and the caterpillars are hatched in about a fortnight. At first they keep together, but soon separate; in fact, they are obliged to do so, as they could not, except when quite small, all feed together on one leaf. By the end of the summer they are full grown. They then descend from the trees, and become chrysalides in the earth or at the roots of Grass or herbage. The moths emerge from the chrysalides in June or July. They are large insects, measuring from 2¼ inches to 2½ inches across the open wings, and their bodies are ⅞ inch in length. The upper wings are purplish-grey beautifully mottled, and with various reddish-yellow and brownish lines and markings; at the tip is a large yellow or buff patch, from which the insect takes its name; the lower wings are nearly white, the head and body are brownish-yellow. When the moth is at rest, with its wings folded over its back, it bears a most striking resemblance to a piece of dead stick, the yellow patches at the end of the wings exactly imitating the end of the stick. One day I was looking in a hedge for what I could find, and I thought I saw one of these moths, but I looked again, and thought I was mistaken, and that it was only a piece of stick. I was just moving off when something induced me to look once more, and I saw that it was really a moth. The caterpillars when full grown are about ¾ inch long, and are of a yellowish colour, with black heads, and lines running the entire length of the body, which is sparingly covered with soft hairs. They are furnished with a pair of legs on the first three, the sixth, seventh, eighth, ninth, and last joints of the body. The chrysalides are about 1 inch long, and are dark brown in colour. By the kindness of Miss Ormerod the figure of the moth, caterpillar, and chrysalis is given. G. S. S.

BEES.

SUBDUING AND MANIPULATING BEES.

Although Bees may be easily excited to anger by improper management in the examination of their hives, as the jarring of the combs, quick and hasty movements on the part of the operator, being breathed upon, and so forth, they seldom use their stings, except in self-defence. When gorged with honey, as at swarming-time, Bees may be handled with impunity, and the object in view in smoking a hive is to alarm the inmates, which causes them to fill their honey-sacs from the unsealed cells. A bellows-smoker in which touchwood, brown paper, old fustian or corduroy can be burned, is a very handy companion to the Bee-keeper in most operations, as by its use smoke can be ejected into any part of the hive desired. Upon the coverings of the frames being removed after smoke has been puffed into a hive, the Bees are seen with their heads inserted in the honey cells, and under these conditions one need have but very little fear of being stung. It is, of course, impossible even for the most experienced apiarian to be quite exempt from an occasional sting, and it is a wise precaution on the part of the novice to have the face protected by a veil when amongst his Bees. Gloves are not to be recommended, being much in the way when handling the combs, and the Bees are even more ready to insert their stings in them than in the bare hands of the operator, and, after all, gentleness is the great secret, for the hands may be covered by Bees when manipulating in a gentle and deliberate manner and no signs of stinging appear. In removing frames of comb for examination great care should be taken not to crush a Bee, as the damaging of one individual may set the whole hive in an uproar, and in replacing the quilts one layer should be placed on at a time, so that the Bees may have time to get away amongst the combs. In removing combs for extracting, the Bees can be shaken from them if they be strong and tough, otherwise a brush or goose-wing should be used, taking care to brush from top to bottom of the combs, as most of the Bees will have their heads turned towards the top of the comb, and if not brushed backwards they are very much more liable to use their stings. In subduing Bees carbolic acid solution is now often used in place of smoke. A goose-quill is moistened with the solution and passed around and within the entrance of the hive and over the alighting-board. The quilt is then raised, half at a time, and the feather passed over the tops of the frames; the Bees are then in a sufficiently subdued state to allow operations to commence. In removing sections a piece of cheese-cloth is soaked in the solution, wrung out, and spread over the case containing the sections; this causes the Bees to run down into the hive, leaving all clear for the operator. The solution is made by mixing together 1½ oz. of Calvert's No. 5 carbolic acid, and the same quantity glycerine, and adding one quart of warm water. This solution requires to be well shaken before being used. S. S. G.

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LAW.

Market gardener's notice to quit, and claim for compensation.—Twenty-five years ago I took an acre of market ground on a lease for the term of seven years, commencing in March. When the lease expired the landlord refused to again let it on a lease for a definite term, but he said I might continue to occupy it and pay rent half-yearly. The place was sold last January, and I have received notice to quit in September. I have 80 fruit-trees of various sizes, 400 fruit-bushes, growing crops, Rose-bushes, and outhouses. Can I claim compensation for these matters on quitting? And, if so, from whom must I claim—the party who let me the land or the party who purchased it?—An Old Reader.

*** It is not quite clear whether you became a yearly tenant, or a half-yearly tenant, when you remained in occupation with your landlord's consent at the expiration of the lease for seven years. The fact that rent is paid half-yearly does not make you a half-yearly tenant, and unless there was some intimation from the landlord that the place was to be held at a half-yearly rent—that is, at so much per half-year, a very different thing from so much a year payable half-yearly—I think you will certainly be a yearly tenant, and your year of tenancy will commence at the same time of the year as it began—that is, in March, when the term of the lease expired. The result of this is that a year's notice to quit is necessary, and the notice must expire with a year of tenancy, and so you cannot be compelled to quit in September. If your tenancy be a yearly one, and it is determined by a proper notice to quit, you will be entitled to compensation under the Market Gardeners' Compensation Act, 1895, for the fruit-trees and fruit-bushes, and for such outbuildings as are required or are suitable for the trade or business of a market gardener. Also for vegetable crops, but not for Rose-bushes nor yet for flowers. If any of the fruit-trees or fruit-bushes are not set out in positions where they are intended to remain during growth and fruit-bearing life, you cannot claim any compensation for these, but you may remove them before the expiration of your tenancy. The procedure in the case of a claim under the Market Gardeners' Compensation Act is just the same as under the Agricultural Holdings Act, and not less than two calendar months before the termination of the tenancy written notice, stating so far as is reasonably possible the amount and the particulars of the claim, must be given to the landlord. If the tenancy is yearly, as I expect it is, there will be no difficulty about the person from whom compensation must be claimed, as long before the tenancy can be determined by a valid notice to quit the purchaser will be in receipt of the rents and profits of the holding. The claim must be made on the landlord, and the landlord is the "person for the time being entitled to receive the rents and profits of any holding." If, however, your tenancy be only half-yearly, all the claim you can make is under the Allotments and Cottage Gardens Compensation for Crops Act, 1887.—K. C. T.

Fallen boughs.—"A." would like to know if boughs or tops of trees that are blown off by the wind into a park belong to the landlord or to the tenant?

*** When lands are let to a tenant, and no reservation is made of the timber and trees, the property in trees is in the landlord. And so with regard to those trees which are likely to become timber; but unless there is a reservation, bushes and underwood are the property of the tenant. When trees standing upon land occupied by a tenant are blown down, the trees, if of any use as timber, belong to and remain the property of the landlord; but if unsound and useless as timber, and fit only for firewood, the firewood belongs to the tenant, who, however, may not sell it away off the holding. In some places common custom gives the loppings of trees to the tenant, and, in the absence of any agreement to the contrary, "A." may make use of such boughs, etc., blown from the trees by wind, as possess no value as timber.

Catalogues received.—*Bulbs.* Little and Ballantyne, Carlisle.——*Bulbs.* Messrs. Cooper, Taber, and Co., 90 and 92, Southwark-street, London, S.E.

PROPAGATING.

PROPAGATING ZONAL AND OTHER PELARGONIUMS.

As our bedding Pelargoniums are growing freely in the borders one can easily take off a few cuttings here and there without any appreciable injury or loss. The present is a good time for this, and not only increases our stock for winter and spring blooming, but ensures better plants

Pelargonium-cutting.

for next season's use than would ensue when the coarse and sappy growths of autumn are utilised. Our cut represents a Zonal Pelargonium cutting, often referred to by amateurs and many gardeners as "Geranium." The cut would be more perfect if an additional leaf and joint were shown, and we would recommend such as far as possible when taking slips for propagation. Cut off just below a leaf, remove the lower leaf close to the stem, and the cutting is quite ready for insertion. Any light and fairly sandy compost may be used, and any bench in an ordinary greenhouse temperature will be suitable. Our Ivy-leaved section, also the beautiful show and fancy Pelargoniums, are easily increased in this way. They are, in fact, one of the easiest of all plants to propagate by cuttings, and it is more as a seasonable reminder that we publish this note than any doubt as to our readers' capability to root so popular and simple a subject.

PROPAGATING CARNATIONS FROM LAYERS.

The middle and end of July is an excellent time for this operation. It is rarely used now for the winter or perpetual-flowering Tree Carnations, but is by far the most reliable and easy method of increasing the beautiful Malmaison and border Carnations. Healthy grass or shrubs should be used, and as far as possible those that

Carnation-layering.

have not flowered. First of all see that the ground around the plants is clean and free from weeds as well as insect pests. Trim off the stale leaves, rake away the surface soil, and then place at least two inches of the following compost all around the plant, making quite a mound of the same around the crown: Old weeds and vegetable refuse, with some stiff loam, sufficiently burnt and charred to ensure freedom from insect pests, and a little coarse sand added. This forms an excellent compost, and Carnations root into it freely. Next have several pegs of wood, iron, or wire prepared. We are partial to coarse hair-pins. Trim off the Grass or leaves from around the base of the shoot to be layered—a pair of scissors is good for this purpose—and then insert a knife about half-way through the stem of a layer, just below a joint; turn the knife, and cut upwards for about three-parts of an inch, then thrust the partly severed portion into the prepared soil and secure it by a hair-pin or peg. Turn the shoot in an upright direction, and press some of the compost around it to keep it in position. If very dry the layers will enjoy a thorough soaking once or twice during the month. Always see that your compost is sufficiently high to avoid splitting of the shoot from the main stem when pegging down. Early in September many of the layers will be ready to take off and transplant upon a prepared border; but some seasons they are so backward in rooting that it is wiser to leave them until early in the spring. When autumn planting is practised it should be done sufficiently early to secure a few new roots the same season, and we do not like to plant later than end of September.

A vase for the drawing-room.—At this season a pretty change for a large drawing-room vase is that composed of a few spikes of the different forms of the Delphiniums, and the free association with these handsome flowers of the spiral-shaped blossoms of the Veronica. I have before me a pale blue vase filled with these flowers, and the picture they make is very pleasing.—D. B. Crane.

Malmaison Carnations from Collompton.—I enclose blooms of the Carnation Malmaison, from plants struck and grown in the open garden. I notice all your contributors speak of this as a greenhouse plant, but here and in Somerset they do better in the open. These blooms were gathered from a plant four years old which is very full of flowers.—May Sparkes, *Ufculme, Collompton, Devon.* [Very fine flowers indeed.—Ed.]

The Goat's Rue (Galega officinalis).—This handsome perennial and its still more striking white variety have this year been very fine. Associated with red and cerise Phloxes or with the vivid vermilion of the tall Lychnis chalcedonica, the white Galega affords an admirable contrast in form as well as colour. Here, in deep, rich soil, in close proximity to water, the plants attain a height of almost 6 feet. For indoor decoration the white Galega is in great request, and arranged with the dainty flower-lace of Gypsophila paniculata is exceedingly ornamental. The culture of the common Goat's Rue, the English name for the Galega, is of the simplest, it being very accommodating in the matter of soil, provided this be of sufficient depth to retain a certain amount of moisture during prolonged drought. It is advisable to cover the roots with a mulch of leaf-mould or ashes as a protection against severe frosts. Staking should be commenced early, when the growths arrange themselves naturally around their supports; whereas if this necessary operation be delayed too long, the plant assumes a bunched-up appearance that entirely destroys its naturally graceful aspect.—F.

Squirrel losing its coat (*A. A. Lucas*).—Your young squirrel appears to be suffering from alopecia—a term usually applied to the loss of hair in circumscribed patches. It may arise from want of some of the elements necessary to the elaboration of a new covering, or from general debility. As, however, the little animal is continually scratching himself the trouble would appear to arise from an irritable condition of the skin, which is usually associated with indigestion. It is being overfed possibly, and short commons for a time would prove beneficial. If you could give a pinch of flowers of sulphur in some soft food (such as bread and milk) once or twice a week good results would follow, while sulphur mixed with lard and applied to the bare places would prove very efficacious in renewing the coat, or the following restorative will be found useful: 1 oz. of honey, ½ oz. of Laurel-oil, ½ oz. of Onion-juice, and ½ oz. of Linseed-oil. Mix well together, and apply every other day for a week.

GARDEN WORK.*

Conservatory.

Very beautiful just now are those old-fashioned plants the Myrtles and Oleanders. Of the latter there are now many varieties in Continental nurseries running through all the shades of colour between white, yellow, and red; the double-flowered varieties are very showy. They are not difficult to propagate or cultivate. Cuttings will root in bottles of water hung up in the greenhouse or even outside at this season, but when cuttings are struck in water, they should be potted as soon as roots are emitted, before they extend much, as long, soft roots die off when placed in earth. The conservatory now will be very gay with what may be termed common things if well grown. Fuchsias planted out are graceful subjects, especially if the free-growing kinds are selected. The dwarf market sorts are not adapted for planting out in a lofty house; but the Beaconsfield type when encouraged to run up are grand. Grassy things, such as Eulalia japonica variegata, E. j. zebrina, and E. gracillima miniata are very effective foils to tone down bright subjects, or to give elevation to dwarf groups. When shifted on into 7-inch pots they make beautiful specimens, and are very useful for the rooms on party nights. Coprosma Baueriana variegata is a Japanese shrub, very distinct, with green and golden glossy foliage, the gold predominating; makes neat little front row plants, or may be used for wider growth in a mass. The best way to propagate it is to plant it out in light rich soil in summer, and layer the young shoots. Some people find it difficult to strike from cuttings. It requires warming up to get soft shoots if propagated from cuttings. Balsams, Cockscombs, Zonal Pelargoniums, Gloxinias, will be much helped by liquid-manure twice a week so long as the plants are effective, and at this season no ineffective plant should be kept in the conservatory, and all sickly plants will be better on the rubbish-heap.

Stove.

Those who have only limited stove room must either content themselves with only a few plants and grow them well, or else select small habited plants of which there are plenty of choice things, both among the foliage and flowering kinds. Very beautiful just now are the Ixoras, but they want skilful treatment and a good deal of heat, and regular—not intermittent. Well grown and bloomed Ixoras carry weight in a collection of stove and greenhouse in the exhibition tent, and the flowers last well. Those who have room in a warm-house to plant out anything in a fairly light position may set out a few old plants of Poinsettias and Euphorbia jacquiniæflora. The last is a splendid thing for covering a back wall 10 or 12 feet high, and when long bright scarlet wreaths are wanted in winter for cutting there will be no difficulty in finding them; but the position must be light enough to ripen the growth. It will not flower well in a shady position. Fires may be let out now. Be careful to use only rain-water for syringing.

Tomatoes under Glass.

Abundant ventilation is of the first importance now, if the plants are to be kept healthy till the end of the season. Give also rich top-dressings. The roots will soon work into anything given on the surface. Poultry-manure is very good. The plant makes roots very freely in it. We have used it rather freely, and our plants never looked better. A mulch on the surface saves watering, but even with the mulch in a warm, sunny house, Tomatoes will require daily watering in the bright weather. If the plants get a check from any cause there will soon be disease among the plants. Those who must have Tomatoes all winter may plant a light house now which has an efficient heating apparatus. As soon as the fruit in cool-houses begin to colour, remove or shorten back a few leaves at the bottom, just to let in the air to flavour the fruit, but there should not be much foliage removed, as it cannot be done without injury to the later fruit. Remove all side-shoots, and when the plants have reached the top of the supports, rub out the terminal buds.

Cucumbers under Glass.

There will be a good deal of stopping and pinching to do now. The growth must be kept thin, as good Cucumbers cannot be obtained from weak, straw-like shoots. Top-dressings should be given as fast as the roots come to the surface, and liquid stimulants or a little guano or some other concentrated manure scattered over the surface occasionally and watered in, but where a little dry stimulant is mixed with the topdressing, that will answer every purpose, and save time. It will soon be time to plant a house for autumn bearing. To insure a succession of Cucumbers all the year round there ought to be three houses or arranged in three divisions.

Late Peaches.

Expose the fruit to the sunshine as much as possible by keeping all sub-laterals off, and all other shoots tied in. Syringe daily till the fruits begin to ripen and well nourish the roots. Leave a little air on all night. Discontinue watering at the roots as soon as the fruits begin to soften; otherwise the flavour may suffer. Turnipy or poor flavoured Peaches are the result of imperfect ventilation and too much water whilst the fruits are ripening. If Peaches have to be packed for travelling, gather a little before they are ripe.

Frames

in which Cyclamen and Primulas are growing, if not standing in a shady spot must be shaded lightly from 11 a.m. to 3 p.m. A rather deep frame or pit may be prepared now for the winter-flowering plants usually grown in the stove up to the middle of July.

Window Gardening.

Plants in window-boxes must have a little stimulant occasionally now. Keep all dead flowers and leaves removed. Gloxinias, Achimenes, and Streptocarpuses are pretty room plants now, and not difficult to grow.

Outdoor Garden.

In dry soils Pansies will be in rather poor condition, and the best thing to do with them will be to cut them back; mulch with Moss-litter-manure and water copiously to bring out a new growth. To do Pansies well, Tufted or otherwise, on porous land, a layer of cow-manure should be buried about 8 inches or 10 inches in the bed before the plants are set out; then, before the dry weather sets in, give a light mulch of Moss-litter-manure and the roots will have a cool, moist bed to work in. Mulch to many things is a necessity in dry weather. Hollyhocks, Roses, Phloxes, Asters, Stocks, and Dahlias, Chrysanthemums maximum and latifolium are good dry weather plants, and are so useful for cutting. Alstrœmerias are charming now in a sunny border without water, but just a light mulch of manure is a great help. The Perennial Sunflowers are handsome, of which Soliel d'Or is one of the most useful. Where the plants are not mulched keep a loose surface by frequent hoeing everywhere. If the hoe was more used there would be less need for watering. If it should be necessary to prick out seedlings of any kind during dry weather, water the bed afternoon previous and prick out the plants before the sun gets very high next morning.

Fruit Garden.

Continue the work of potting Strawberries for forcing. Where several thousands are grown the potting takes some time, and the plants may not all be ready at the same time; if the late sorts are potted in August will be time enough. There are not so many Strawberries grown for late forcing as there were a few years ago, as the early varieties outside in a warm situation have shortened the forcing season. The plantations of Strawberries may be made any time now—the sooner the better—and if as much pains are taken with the young plants as is usual with the plants intended for forcing, there will be a good crop of very fine fruit first season. It is a waste of time to put out little plants at 2 feet apart; it will only take about 1,350 plants to furnish the eighth part of an acre, and it is only in very large gardens where more than 20 poles of land are planted annually with Strawberries. Mulch all heavily-laden trees, and all trees in hot, dry situations should be watered freely. Continue the removal of surplus wood from wall and other trees which are annually pruned. Thin out the young shoots of Raspberries, leaving only enough to produce next year's crop. Unless growing in good, moist land, Raspberries will be small, unless heavily mulched. Grapes colouring under glass should have free ventilation, leaving a little air on all night.

Vegetable Garden.

Blanch early Celery either by earthing up or by wrapping paper round. It is a good plan to use paper even when the plants are earthed later; the paper keeps the earth out of the hearts and is a check upon the work of slugs, and when paper is used the watering can be continued much longer. Unless the Peas were mulched somewhat heavily the pods will not swell up well, and they will probably be attacked by thrips and possibly mildew. Watering without a mulch to check the evaporation is not profitable work, and the mulch is a great saving of time. Cauliflowers will be poor unless the roots are kept cool and moist; on dry, porous land plant in trenches Provide a good supply of Endive for late summer and autumn salads; the early sown plants frequently bolt, but after the middle of June they are generally safe. Give them room enough and tie up to blanch when nearly full grown. Make another sowing of both Lettuces and Endives. Get the autumn and winter Cucumber-house thoroughly cleared out. Leave no old manure or any part of the old bed in the house, as it will be nearly sure to be prolific in the eggs of woodlice, beetles, and other insects. Whitewash all wall surfaces and paint all woodwork. To get outside Tomatoes to ripen early stop the plants.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 26th.—Chrysanthemums are taking up a good deal of time; disbudding, tying, and earwig destroying are more or less daily occupations now. Rose-budding also and layering Carnations extend more or less over several weeks. Tomatoes again are largely grown, and come into what may be called routine work, which cannot with safety be neglected. Finished cutting down Snow and Fancy Pelargoniums and put cuttings in. Put in cuttings of Hydrangeas Dr. Hogg and the common sorts.

July 27th.—Made a second sowing of Cabbages. Shifted Zonal Pelargoniums into 5-inch and 6 inch pots for flowering in winter; flower-buds will be picked off till September. Shifted on Bouvardias. Pruned Pear-trees on walls and nailed in leading shoots. Potted Strawberries for forcing. Netted up Morello Cherries and Red Currants on north wall. Put in cuttings of Asparagus plumosus nanus and plunged in brisk heat in close frame.

July 28th.—Sowed Endive and Bath Cos Lettuce; planted out earlier sowings. Mulched late Peas with manure and gave a good soaking of water. Made a first sowing of Prickly Spinach for early winter picking. Sowed Dwarf Kidney Beans in warm border for the last time; they can be easily protected if frost comes early. Sowed a small bed of Early Horn Carrots to produce young Carrots for winter.

July 29th.—Planted Strawberries after early Potatoes; the ground was trenched and well manured in winter. The Strawberries are planted in rows 2½ feet apart and 18 inches apart in the rows, and the plants are those left after the requirements for forcing have been made up. Fixed hexagon netting over the ventilators of vineries to keep out wasps and flies. Inside borders in late vineries are kept thoroughly moist now; stimulants are also given.

July 30th.—Cut down a good collection of Zonal Pelargoniums and put in cuttings; more stock is required, and the plants will bloom again later when flowers are more required. Pricked out Polyanthuses and Carnation seedlings raised in boxes under glass. Sowed Telegraph Improved and Lockie's Perfection Cucumbers. Pegged down Verbenas, Petunias, etc., in beds. Borderings of mixed Leptosiphons are very pretty just now.

July 31st.—Filled a small frame with Hollyhock cuttings; we trust more to seedlings now, but when we have anything good cuttings are taken in the old way. Sowed spores of various kinds of Ferns, including Maiden-hairs and several varieties of Pteris, especially Pteris tremula and P. cretica major, which are hardy and stand the conditions of room cultivation well. Shifted rooted cuttings of Double Primulas.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1091—**Pruning Roses** *(D.).*—They may be pruned in either autumn or spring.

1092—**Cucumbers from seed** *(H.).*—You can easily raise the seeds on a hot-bed.

1093—**Carnations in fibrous loam** *(T.).*—Yes; Carnations would be grateful for fibrous loam.

1094—**Winter-flowering Heaths** *(F.).*—This is a very good time to take cuttings of these Heaths.

1095—**Planting Roses and Rhododendrons** *(B).*—September is the best time to plant these.

1096—**Tropæolum azureum** *(A.).*—The blue-flowered Tropæolum is essentially a greenhouse plant.

1097—**Passion-flower fruit** *(S).*—Passiflora cœrulea bears egg-like fruit, yellow when ripe.

1098—**Roses in open air** *(H.).*—The Roses will live out-of-doors.

1099—**Manuring Roses** *(W.).*—Do not use artificial manure and guano at the same time. An application of guano every week or fortnight will be sufficient.

1100—**Dahlia leaves eaten** *(Y.).*—The leaves seem to have been attacked by earwigs or other insects. Examine the plants.

1101—**The Wax-plant** *(O.).*—Hoya carnosa does well in loamy soil in a greenhouse temperature. It does not require much water in winter.

1102—**Smoking in vinery** *(T.).*—Yes; you can smoke in house where there are pot Vines without much risk of injuring them; but do it cautiously.

1103—**Planting out Asters** *(W.).*—We fear it is too late to plant out Asters for flowering this autumn; but strong, healthy plants may be worth a trial.

1104—**Rose Niphetos** *(L.).*—This is by no means a dear Rose, and you had better buy plants, which you can get from any Rose nursery. Use good loamy soil.

1105—**India-rubber-plant** *(I.).*—You had better leave your plant out-of-doors for a few weeks longer. It would get more congenial treatment outside than indoors.

1106—**Filmy Ferns under stage** *(J.).*—Yes; Filmy Ferns would grow in shade under a stage, provided the house is not draughty.

1107—**Making fernery in greenhouse** *(J.).*—Certainly; there is no better time than the present to begin making a fernery.

1103—**Yarrow on lawns** *(K.).*—The best of all remedies is to root it out. It is a work involving labour, but it saves trouble in the end.

1109—**Planting Foxgloves, Sweet Williams, etc.** *(Amateur).*—It is not too late to sow these plants; his is just the right time to do so.

1110—**Columbines** *(G.).*—You can sow seed of Columbines either now or in spring. You will find full information respecting these plants in recent numbers.

1111—**Winter temperature for Allamanda** *(B).*—The temperature should range between 60 degs. and 70 degs.; 80 degs. would certainly be too high.

1112—**Yuccas** *(R.).*—We do not know what you mean, and there must be a mistake somewhere. Yuccas are not bulbous plants, and they are perfectly hardy.

1113—**Cutting off blooms of Roses** *(E.).*—Certainly it is best to cut off the withered blossoms of Roses.

1114—**Pink Currants** *(Clare).*—The colour is not common; the flavour we think very good, and they are worth propagating.

1115—**Fuchsias not blooming** *(S.).*—Leave the Fuchsias where they are, in the greenhouse; they will, no doubt, flower in time.

1116—**White Everlasting Pea** *(H.).*—You should have no difficulty in getting the white Everlasting Pea from any hardy plant nurseryman.

1117—**Substitute for liquid-manure** *(M.).*—If your Rose-tree wants nourishment, you can employ any of the artificial manures advertised in Gardening.

1118—**Gloxinias** (*Rev.*).—The seedlings look as if they had been attacked by green-fly. Such an attack would account for their unsatisfactory appearance.

1119—**Strawberry-plants** (*A.*).—The information that you have received to the effect that if Strawberry-plants set out in autumn do not bear the first year they will never be fruitful is not correct.

1120—**Fuchsia buds dropping off** (*L.*).—The plant is, you say, well watered and in good soil. We think the dropping of the buds is due to overfeeding. You should not give top dressings of guano twice a week.

1121—**Freesias not blooming** (*J.*).—No doubt the failure was due to the roots having become weakened by having been kept out of the ground too long. They will probably flower next year. Do not dry them excessively.

1122—**Decaying Passion-flower** (*R.*).—Cut away the decayed part of the stem, and, if the plant is in good health it will quickly send out shoots from the sound part.

1123—**Lilium Harrisi after flowering** (*Bar, Epham*).—Certainly not; do not disturb your Lily after it dies down. Put a little litter over it in winter and let it alone.

1124—**White Passion-flower** (*N.*).—Yes; Constance Elliot is the only white Passion-flower. It can now be obtained from most nurseries. It will grow out-of-doors on a warm wall.

1125—**Hydrangea leaves withering** (*Geo*).—Hydrangea paniculata grandiflora is a hardy plant, and you have been stifling it. That is why it is in such an unsatisfactory condition.

1126—**Canterbury Bells not blooming** (*A.*).—They will flower next year. Encourage them to make strong growth, and the longer the season of flowering is deferred the finer will the plants be.

1127—**Melons cracking** (*Dr.*).—We think the unsatisfactory condition of your Melons is due to over-watering, which is one cause of cracking in Melons. Keep them drier, and they will probably be all right.

1128—**Turnips decaying** (*Gardener*).—The symptoms are those of over-manuring. Turnips like liberal treatment; but, when too much forced, decay often sets in, and such is probably the cause of your failure.

1129—**Pruning Currant and Gooseberry bushes** (*B. L.*).—They may be pruned at any time during the winter. We will publish an article on the subject, giving you the information you seek, in good time.

1130—**Campanula pyramidalis** (*Miss D., North Devon*).—You need only feed the plants well early next summer, and if you want more than usually prominent spikes cut off side-growths.

1131—**Violet suckers** (*Miss D., North Devon*).—Yes; keep all suckers picked off closely or they will rub the young crown and prevent its ripening for a good supply of bloom next spring.

1132—**Selection of Pæonies** (*Pæony*).—A full article on the subject appears in GARDENING ILLUSTRATED this week by Mrs. Jocelyn. Pæonies should not be planted amongst the roots of trees.

1133—**Vines under roof of greenhouse** (*J.*).—It is probable that the Vines will succeed better along the roof, as they will get more light there than at the sides, and, therefore, we should not advise you to cut down the roof portion.

1134—**Keeping bedding plants in winter** (*W.*).—Yes; we have known cases where amateur gardeners have kept bedding plants through the winter in a frame heated as you suggest. You must exercise care in the management of the lamp.

1135—**Unsatisfactory Pelargoniums** (*R.*).—The leaves are in a very dirty state; there is green-fly on them, and they look as if there are dirty plants overhead. You must fumigate, and dip the plants in Tobacco-water.

1136—**Seedling Plum and Apple-trees** (*B.*).—They will eventually produce fruit; but it would be better to graft them. The fruit produced by seedlings may be excellent; but the probability is that it will be inferior in quality.

1137—**Manure for plants in pots** (*B.*).—If the plants which have to decorate a confectioner's window require manure, you can use any of the concentrated manures offered for sale by advertisers in GARDENING Sprinkle a little on the surface, and water it in.

1138—**Heliotrope late in flowering** (*Hector*).—We cannot say why your Heliotrope is late in flowering. It ought to have bloomed before now. You should have sent a specimen of the insect, and then we should be able to assist you.

1139—**Begonia fuchsioides** (*Constant Reader*).—Plants may be raised from cuttings at any time of the year when a temperature of 60 degs. or 65 degs. can be kept up at night. You will find a note on the subject in another column.

1140—**Rose Celeste** (*R. K.*).—This is a beautiful and very fragrant Rose, with handsome foliage. It, however, as you say, no Roses of any class will grow in your locality, it is doubtful whether you will be more successful with this. It is, however, well worth a trial.

1141—**Belladonna and Guernsey Lilies** (*M.*).—Keep them moderately dry and they will soon flower. In both cases, when you see the leaves beginning to shoot again give the bulbs more moisture. They should not be dried off until the leaves are fully matured, which will be next spring.

1142—**Red Currants with old wood** (*R.*).—It is a question of pruning. Do not let the trees be overcrowded with old wood. The prunings may be used for cuttings if you want more of the same kind; but it might be worth your while to try some of the newer varieties. Do not overdo the pruning.

1143—**Propagating Carnations** (*Omega Vi*).—An article on propagation of Carnations from cuttings appeared in our issue for February 20; that upon layering is given in present issue. Border Carnations certainly do better in the open than in pots, but the latter method of culture should not prevent them flowering.

1144—**"Geranium" cuttings** (*P. H.*).—We are illustrating the propagation of "Geraniums" this week, and also publishing shortly an article upon the early autumn increase of bedding plants generally. Rose query will be fully answered next week.

1145—**Propagating "Geraniums"** (*Adamary, Hampstead*).—We are publishing this week an illustrated note upon propagating "Geraniums;" also other summer bedding plants shortly. Carnations from cuttings appeared in our issue for Feb. 20, and one upon layers is given this week.

1146—**Treatment of greenhouse plant** (*H.*).—It is impossible to give you any reliable instructions as to the treatment of your plant when we do not know what it is. Your description leads us to fancy it is Ficus elastica (the India-rubber plant); but it would also answer for many other subjects. Can you not send us a leaf?

1147—**Unsuccessful window garden** (*J. F.*).—Your specimens seem to show that there is not enough light in the position in which the plants are kept, to promote healthy growth. The plants are weak, and, consequently, cannot produce flowers. You give us no information about the position, so we can judge only from your specimens

1148—**Strawberries overrun with weeds** (*C.*).—It will be better to turn your present Strawberry ground to other use, and to make a fresh bed in another spot. If the Strawberry that you have suits the locality, and is one that you like, take runners from fertile plants; but, if not, get plants from other sources. A good time to do the work would be early in the month of August.

1149—**Culture of Melons** (*H.*).—So far as our experience goes, what gardeners call a good sound loam, with little or no manure, is the best soil for Melons—soil such as is generally obtained from the top spit of a pasture. As you do not say under what conditions the plants are grown, we cannot tell you whether artificial manure would help you; it is not necessary under good and simple modes of cultivation.

1150—**Cineraria** (?) (*A. C.*).—The name of your plant is Cineraria maritima. Grow in any ordinary garden loam when in the open border. They are generally used for bedding, and make a good show with their greyish-white leaves. As a winter greenhouse plant they are also useful, and can be grown in pots of ordinary soil, well drained. It is late for bedding, and we would advise a few being potted for the cool greenhouse.

1151—**Vegetable Marrows** (*W.*).—It is by no means necessary to cut the male flowers off Vegetable Marrow plants. If planted in good, rich, moist soil, in a warm, sunny place, Vegetable Marrows want no attention beyond gathering the fruit when it is young. As in the case of other vegetables, the fruits are often allowed to get too old or too large, and the plants are injured thereby. Soapy-water and house-refuse generally may be given to them, if they want water.

1152—**Laying out garden** (*N. S.*).—With a plot 6 feet wide it would, perhaps, be difficult to make an arrangement that would give you more satisfaction than that shown in your plan, and we see no reason why you should not succeed in carrying it out. Be sure to plant the Crocuses not later than October, by which time the bedding plants will be out of flower, and all the plants that you show in the plan will be out of flower in time for the bedding plants which you wish to put in at the end of May.

1153—**Tomatoes bursting** (*B.*).—Cracking of fruit of any kind when ripening is generally owing to an excess of moisture in the soil when the crop is finishing. In some cases this may have been brought into greater prominence by previous dryness, causing a tightening of the skin. It is always good practice to give Tomatoes in pots a rich top-dressing just when the fruits begin to ripen. This enables the plants to finish off the fruit properly without any special aid from the water-pot beyond what is customary for health.

1154—**Mildew on Grapes** (*R. S.*).—Vines in bad condition are more liable to the attacks of mildew than those in a sound state. Mildew is mostly found where there is an excess of moisture in the atmosphere, and it is attributed to numerous causes, such as stagnant atmosphere, unhealthy root action. Sulphur should be made use of to prevent it from spreading; it may be mixed with water and applied with a syringe, or made with milk to the consistency of paint and applied with a brush to hot-water pipes.

1155—**Roses for cold-house** (*C. E. Dale*).—Purchase the plants next November, and select as far as possible from the following dozen: Madame Falcot, Franciscа Krüger, Anna Ollivier, Madame Hoste, Catherine Mermet, Souvenir de S. A. Prince, G. Nabonnand, Media, Perle des Jardins, Madame Lambard, Niphetos, and General Jacqueminot. We cannot arrange them so as to flower consecutively, but all of the above are constant bloomers, and would be more or less in flower from March until late autumn, under ordinary greenhouse treatment

1156—**Treatment of kitchen and flower garden** (*Beginner*).—It is much too late to sow such vegetables as you name. Get some Cauliflowers and Brussel Sprout plants and get in as soon as possible. You can sow Turnips and a few rows of Carrots, but the bulk among others are not likely to come to much when started so late in the season. Celery plants can be planted now also. There is no reason why your garden should not grow all you wish next season, and if you read our weekly notes upon the kitchen you will find each subject recommended in due season.

1157—**Clematis dying** (*W. J. Rawlings*).—We are unable to say definitely the cause of the death of your Clematises. We know of a very large collection going off in exactly the same way as you describe. One day they would be flowering well and to all appearances in capital health, and the next day be quite dead. Position may, to a certain extent, be held responsible for this. We have noticed that plants growing out of the reach of the sun during the hottest part of the day are not so liable to become victims of this much dreaded disease. Some varieties seem to be subject to this disease more than others. We presume your plants have been grafted; try a few on their own roots.

1158—**Strawberry plants** (*J. F. O. G.*).—It appears to us that your plants were put out too late to do well the following year; but if they also stood through last summer, there should have been ample fruit this season. Did they flower? Many promising beds, especially of early varieties, were almost ruined for this season by the late frost in May, when they were in full bloom. We would take runners at once, and plant upon a rich and firm soil. By carefully attending to these, and watering until established, you should get a good crop next summer, and a much better one the year later. Try such varieties as Sir Joseph Paxton, Royal Sovereign, and La Grosse Sucrée. You do not name your variety, and Strawberries differ very much as regards fruitfulness. They are also believed to produce some plants that are barren, but this has not yet been satisfactorily proved.

1159—**Sample of soil** (*Hoare*).—The sample sent is of a harsh and unkind nature. It has quite enough lime, and will be much better if lightened by the addition of stable-manure made with peat-Moss-litter. If the portion sent is a fair sample, you will do well to dig over to a depth of at least a foot, and pick out the bulk of the larger flints. With this treatment, and the help of stable-manures, all classes of Roses will do well upon it if grown upon the seedling or standard Brier-stocks. It is a naturally dry soil, and if you do not mulch in the summer, will probably be too parched for Roses during a dry season. Carnations and Pinks will do even better if you remove a few of the flints and add a slight dressing of manure, but Roses will need a much heavier feeding. Pears are a general failure this season; still they should thrive with you if the ground is well moved and enriched. It is very suitable for Strawberries and general bush fruits, and is by no means a bad soil for any fruit-trees. You do not say its depth. This is important, as Pears, Apples, Plums, and strong growing trees need a deeper soil than Strawberries and bush fruits. You must move it deeply, and enrich all the more if very shallow. We should judge you have a chalky subsoil, but cannot determine this from so small a portion of surface loam without other data.

1160—**Mulching Begonia beds.**—Please let me know in your valuable paper whether Begonias would be benefited by the bed being surfaced with fibre? They are in very strong sun up to noon each day, but have no afternoon sun. A town garden.—NORAH.

*** *Some Cocoa-nut-fibre will do well, or rotten Mushroom-dung, which may be covered with fibre.*

1161—**Clematis Duchess of Edinburgh.**—"X. Y. Z" has a Clematis (Duchess of Edinburgh) which flowered beautifully last year, but has only one bloom on it this year. It was not pruned or cut down. Ought it to be, and what sort of manure is best for it?

*** *This very fine variety belongs to the florida section, and flowers from the middle of June to end of July. Pruning should be done in February, removing all weak and a portion of the old flowering wood. Cow-manure is the best manure for the Clematis. In winter mulch with half-rotted dung.*

1162—**Leaf-mould from Fir-trees.**—I can get a quantity of leaf-mould for the carting, but it is from under Fir-trees, and I am told this is poisonous to seeds and young plants. Is this so? Would it do to dig some in my garden with manure?—VECTIS.

*** *It is not worth the cartage; the needles of Pines contain so much resin that few plants can thrive in such soil.*

1163—**Lilium giganteum**—I have a Lilium giganteum now in full bloom, and I want to remove it. Will you kindly tell me the best time to do it? I have had it fourteen years, and it has not bloomed before. Are they in the habit of flowering yearly?—H. H.

*** *Yes, your Lilium should bloom each year. Transplant early in October, when the bulb is dormant. If you afford a light but deep compost of turfy loam and grit, with a few pieces of old cow dung intermixed, it will probably do much better with you. Fourteen years is a long time to be without bloom.*

1164—**Treatment of Tomatoes.**—If I sow Tomato seed now and keep the plants going in the ordinary way, would they go on setting fruit during the winter in a fairly well heated house, and what variety would you recommend?—TOMATO.

*** *Yes, and this is the method adopted by trade growers for their winter crop. But the flowers do not set so freely, and many fertilise by the aid of a camel-hair brush. Tomatoes are rather a difficult winter subject for the amateur. A good variety is Duke of York.*

1165—**Striking Pelargoniums for winter flowers**—Is it too late to strike cuttings of Pelargoniums for winter blooming, and what kind is most suitable? I have a frame and a cool greenhouse in which to raise the plants, but heat could be given if necessary. I shall be very much obliged if you will be so good as to answer these queries, and if you would kindly name any other plants that could be got now for winter blooming.—AN IRISH AMATEUR.

*** *You can root the Zonal Pelargoniums now but plants rooted earlier would have been better for winter blooming. There are none better than the old Raspail and Raspail Improved, deep semi double scarlets that stand well when cut, flower very freely, and last a long time upon the plants. Yes, if you sow the Mignonette now, as you propose, it should give good results during winter. Your house is very suited for the subjects you mention.*

1166—**Tomato blooms falling**—Could you please tell me the cause of Tomato blooms falling off; also plants making so much foliage? What is the best fertiliser for top-dressing, and how to use it, and how often? The plants are under glass in span-roof house. Also, what is best for top-dressing Cucumbers?—E. A. A.

*** *Almost any artificial concentrated manures will do for both Tomatoes and Cucumbers. They vary in strength, and in every case small packets from the florist contain full instructions respecting application. You do not need to feed your Tomatoes while making an excess of foliage. Cut off the greater part of their coarse leaves, pinch back all lateral growths, and confine them to one stem as far as possible. Overcrowding with foliage and insufficient ventilation are causes of non-setting of fruit. Give the*

stems of the plants a good shake early in the morning and while the atmosphere and pollen are dry. Until the fruit is set Tomatoes are injured by overfeeding.

1167—**Wiring a fruit wall.**—I am building a concrete wall for fruit-trees, cemented on sunny side, and having iron holdfasts on which to fasten horizontal wires. What distance should I put the holdfasts, and what distance should the wires be from the cemented face of wall?—Jonah.

*** *We cannot well give you advice as to how far apart to put the holdfasts, seeing you do not say a word respecting the dimensions of your wall. At all events, have them close enough to keep the wires tight and firm. Let the holdfasts stand out from the wall 3 inches or 4 inches. A wire at each foot or 15 inches is most useful, and we do not recommend them to be further apart than this. Where expense is no object a 9-inch space would be better.*

1168—**Yarrow on lawns**—We have a quantity of Yarrow on our lawn. Is it possible to get rid of it without taking up the turf? As it is a large tennis court we hesitate to do so.—Yarrow.

*** *Make use of the Daisy eradicator, and cut out the plants as neatly as possible. By a little effort and constant use of this cutter you can soon reduce and finally destroy the Yarrow. You do not say which one of the Yarrows or Achilleas you are troubled with, and as they vary so much in growth we cannot give so definite a reply as we would wish.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*C. A. S. M.*—Marie Van Houtte is the name of your yellow Tea Rose. You have sent two sorts of pink; the smaller flower is Blairi No. 2, the other we do not recognise. The white bud appears to be the Cabbage or White Provence, but it was very dry when received.——*Miss D., Ilfracombe.*—Your Rose is one of the Hybrid Teas, probably Caroline Testout, and perfectly hardy.——*A. V. R.*—The light Pink Rose is Baroness Rothschild; the deep pink is William Griffiths; but the red one was too far open and shattered to recognise.——*Camp.*—A hybrid Alstrœmeria.——*Redfern.*—1, Spiræa filipendula fl.-pl.; 3, Gazania splendens; 7, Rose Sultan of Zanzibar; 12, Pride of Reigate. The others had unfortunately tumbled to pieces in the box. Please send fresher blooms with buds.——*John.*—1, Passiflora insignis (prune in winter); 2, Diplacus glutinosus; 3, Stachys lanata; 4, Dicentra cucullaria; 5, Spiræa filipendula fl.-pl; 6, Heuchera sanguinea.——*H. M. E.*—1, Malva moschata; 2, Hieracium aurantiacum; 3, Common Borage; 4, Erigeron speciosus.——*Young Gardener.*—1, Veronica spicata; 2, Spiræa Douglasi; 3, Veronica buxifolia; 4, Withered; 5, Campanula isophylla; 6, C. pusilla.——*H. Mentes.*—1, Sidalcea candida; 2, Lysimachia clethroides; 3, Erigeron philadelphicum; 4, Sedum Maweanum; 5, Coronilla varia; 6, Lychnis coronaria; 7, Send again; 8, Spiræa pruinosa; 9, Campanula rhomboidalis; 10, Campanula rotundifolia.——*R. L N.*—Tilia europæa (vulgaris) laciniata.——*A. P.*—1, Mme. Falcot; 2, Possibly Catherine Mermet; 3, Marie Van Houtte; 4, Perle des Jardins; 5, La France. We have done the best we could, but many of the flowers had almost dropped to pieces.——*F. Parish.*—1, Too shattered to recognise; 2, Jean Rosenkrantz; 3, Dupuy Jamain; 4, Achillea Ptarmica flore-pleno.——*E C.* Melampyrum cristatum (Crested Cow Wheat).——*Erale.*—Anagallis tenella (Bog Pimpernel).——*F. Debridge.*—Arrhenatherum elatior (Bulbed Oat Grass).——*A. Neal.*—1, Pteris serrulata cristata; 2, Adiantum gracillimum; 3, A. tenerum; 4, A. cuneatum; 5, A. scutum; 6, A. Pacotti. The Dracæna is D. indivisa and the Begonia is B. Haageana.——*May.*—Perle des Jardins; the other is a Maréchal Niel. We can trace no insect on the bloom; it was apparently due to too much moisture.——*J. J. R.*—1, Echeveria retusa: 2, Verbascum olympicum; 3, Withered; 4, Achillea Millefolium rosea; 5, Epilobium rosmarinifolium; 6, Perennial Delphinium (Larkspur); 7, Acanthus spinosus; 8, Campanula pyramidalis.

POULTRY.

Getting rid of old hens (*A Constant Reader*).—I fear you have scarcely grasped the meaning intended by the writer when he advised the surplus stock to be weeded down as soon as circumstances permitted; it may therefore be the better plan for a short explanation to be given at once. The bulk of our poultry-yards at this time of year consists of laying or sitting hens and adult cocks, with chicks of all ages from three to four months downwards. If arrangements have been carefully planned, the majority of the chickens should be March and April hatched, the object being to supply pullets for next winter's layings. A goodly number of cockerels would also be found in the same broods, and these should either be ready for market or nearly so. The pullets, by good management, should begin to lay in October, and continue throughout the winter. In many cases, they are more to be depended upon for winter eggs than hens a year or more older. As a rule, the adult stock begins to moult from August onwards, and it seldom happens that they get into full lay again until the turn of the year; such birds are therefore kept at a loss. It is a certainty, too, that such birds are offered in such large numbers in all parts of the country just when they are moulting as to make them a perfect glut in any market, and this must bring down the price very materially. It does not matter in the least whether they are one or two years old; in the eyes of the buyer they are old hens, and nothing more or less. Now, throughout the summer—the earlier the better, of course—there are buyers in the market for such fowls, if they are advertised as in full lay, or as sitters, or even as fat hens. I do not mean to say that fowls of this class will realise the prices obtained for fat chickens, but there cannot be a doubt that they will command a substantial sum beyond that obtainable when they have done their season's work and are commencing a long rest. If the hens are of good sitting kinds gamekeepers will readily buy them to hatch out eggs of Partridges and Pheasants which were laid in the mowing Grass or Corn. As a rule, the gamekeeper's price is half-a-crown a hen, but he insists on good sitters. You will see from the above that the matter is one for the fowl owner alone; if, however, he makes an effort to carry out the idea suggested I have not the least doubt but that he will succeed.—Doulting.

BIRDS.

Death of Mule Canary (*New Reader*).—From the particulars you give as to the death of your bird it would appear to have died from phthisis, which is a form of tuberculosis attacking the lungs, and not uncommon among cage-birds, and for which there is no remedy. It is often the result of a sudden exposure, in the case of our feathered pets, to a cold current of air, and may be brought about through a bad and protracted moult. This disease may be known by the bird losing flesh and becoming emaciated, although in general appearance it may appear plump and in good condition owing to the inflation of air under the skin. The patient has sometimes a husky cough, and, lastly, a bad attack of diarrhœa. Nothing could have saved your bird, although relief is sometimes given in a case of this kind by supplying a little cod-liver-oil, added to some bread soaked in cold water and well squeezed. In your bird-keeping for the future avoid a dry, over-heated atmosphere and sudden changes of temperature.—S. S. G.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Warren's cooking pot.—To all lovers of vegetable diet I recommend this very simple form of steam cookery. For years I travelled with one of the smaller size, an immense advantage in its use being that anything sufficiently combustible for bringing water to a boiling point is suitable fuel; dry sticks, leaves, cattle-dung, etc., I have often used, and had a dinner of fish, flesh, or fowl! A friend of mine who tried it said to me, "No one deserves to eat Peas again, who boils them," and had a larger pot made instanter.—W. H. L.

Cooking Asparagus.—Spread the heads loosely and crossways in a Warren's cooking pot with a few shoots of Mint and put on a slow fire. Have ready some thin slices of buttered toast, put them on a very hot dish. Drain the Asparagus well and lay neatly on the toast. Add two or three small lumps of butter, and sprinkle with pepper and salt. Serve up.—W. H. L.

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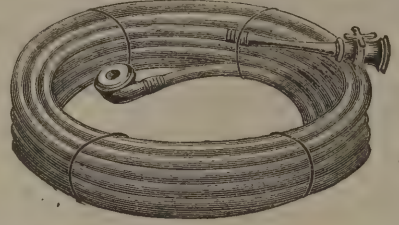

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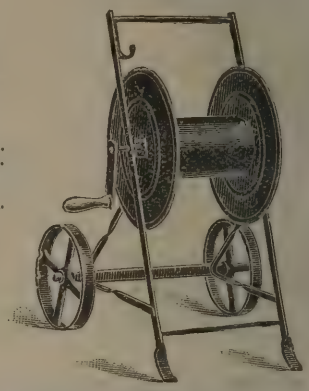

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GARDEN AND PLANT PHOTOGRAPHS, 1897.

The Editor of The Garden and Gardening Illustrated announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—Country Houses and Flower Gardens.—A prize of Ten Guineas, and a Second Prize of Five Guineas, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—Flowering Plants.—A prize of Six Guineas, and a Second Prize of Three Guineas, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—Borders, Groups of Hardy Plants, Ferneries, Rock and Water Gardens.—A prize of Five Guineas, and a Second Prize of Three Guineas for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—Lawns, Old Orchards, Wild Gardens, Grass Walks, and Picturesque Drives.—A prize of Six Guineas, and a Second Prize of Three Guineas for the best ten most varied and distinct views of lawns and lawn trees; evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—Best Garden Fruits.—A prize of Five Guineas, and a Second Prize of £2 10s. for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—Best Vegetables.—A prize of Five Guineas and a Second Prize of Two Guineas for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—Cut Flowers, Table Decorations, etc.—A prize of Five Guineas for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—Vases, Fountains, Garden Houses, etc.—A prize of Five Guineas for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

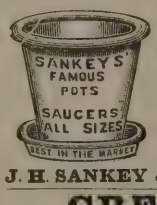
All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until the last day in October, 1897.

What to avoid.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

First.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

Second.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

Third.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*



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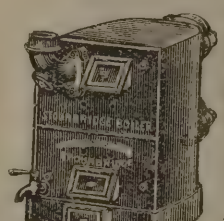

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GARDENING ILLUSTRATED.

No. 960.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JULY 31, 1897.

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ROSES.

NOTES UPON NEW ROSES.

TWENTY-FOUR VARIETIES.

THE official list of new Roses available for exhibition in such classes at the National Rose Society's shows is before me and I find no less than three hundred and forty-three mentioned. When I state that climbing forms of existing varieties are not included it will be at once seen what a vast number of Roses are introduced each year, as all of these have been put into commerce since the spring of 1894.

To select the best twenty-four of these is by no means an easy task, nor can we be certain that some really good novelty is not missed, seeing that many cannot have been well tried during so short a period. There is yet another great drawback to selection, and that is the incessant propagation new varieties are so often subjected to. As we have pointed out in our propagating notes, selection of material is a great point, and when every scrap of a new Rose is cut up for propagation, and the resulting plants again used in the same way, we frequently get a bad type of the variety, and several years elapse before its real merits are fully recognised. But the twenty-four named below have been so good already that I can safely say they are all among our Roses of the future, and not likely to be forgotten before the present century ends, a fate which is sure to happen to the great majority of the three hundred and a half varieties upon my list.

I do not propose to go fully into the descriptions of the whole twenty-four, but give a brief word or two to those of extra merit, and also their predominating colours.

They are arranged alphabetically, and the letters H.T. signify Hybrid Tea; H.P., Hybrid Perpetual; T., Tea-scented; H.N., Hybrid Noisette.

ALISTER STELLA GRAY (H.N.) is a strong climber, throwing immense trusses of tiny blossoms, each one of which is perfect, a creamy-white outside, gradually shading to a deep nankeen in the centre.

ANTOINE RIVOIRE (H.T.) must rank among the best, a large Camellia-shaped flower of rosy-flesh with distinct shade of yellow at the base of petals.

BLADUD (H.P.) is almost white, but when young and fresh has a pretty tinge of pale blush.

CAPTAIN HAYWARD (H.P.). gives us an intense deep scarlet, very large, well formed, and always a long, serviceable bud.

CHARLOTTE GILLEMOT (H.T.), a pure ivory-white, very large flower, and a free bloomer.

COMTESSE DUSY (T.) is very little known; it is a soft, lemony-white of great promise and very freely produced.

CRIMSON RAMBLER I need say nothing of, but it must come in our list.

ELLEN DREW (H.P.) I am much pleased with; it is a good grower, free bloomer, and a pretty soft peach and silvery-pink combined.

EMPRESS ALEXANDRA OF RUSSIA (T.) is a rich lake-red with orange and crimson shadings, quite a novel colour, and a grand new Rose.

HELEN KELLER (H.P.) we have seen especially good. Size and form, habit of growth, and freedom in blooming, are all first class. It is a distinct shade of rosy-cerise.

LAURENCE ALLEN (H P.) is perhaps one of the sweetest of all. A deeper coloured and more double-flowered Baroness Rothschild with a delicious perfume.

MADAME JULES FINGER (H.T.), creamy-white with a slight shade of salmon-pink.

MARJORIE (H.T.) flowers with wonderful freedom, is a clear blush-white of exquisite shape, and a thorough perpetual.

MARQUISE LITTA (H.T.) gives us a new shade of carmine and vermilion, and is sure to please.

MERRIE ENGLAND (H.P.) is a prettily striped form of Heinrich Schultheis, and

MRS. HARKNESS (H.P.) is a salmony-flesh sport from the same variety. Both are free and exceedingly sweet-scented.

MRS. PIERPONT MORGAN (T.) has intense colour, good size and form, and is apparently a great improvement upon Madame Cusin.

MRS. RUMSEY (H.P.) is again showing what a grand late summer Rose it is. This is a deep pink, with sweet perfume, and mildew-proof foliage.

MRS. R. G. SHARMAN CRAWFORD (H.P.) cannot be beaten in its soft salmony and silvery-pink shade. Form, habit, and free-flowering are all grand characteristics of this Rose.

MRS. W. C. WHITNEY (H.T.) is a long-pointed bud of a clear and deep pink; especially useful for cutting from.

MRS. W. J. GRANT (H.T.) has been so much praised that I will only say that it deserves all that has been said. A deep pink and one that never produces an unserviceable bloom.

MURIEL GRAHAME (T.) needs no more remark than to say it is an almost pure white sport from Catherine Mermet, and like that grand Rose in every other respect.

PAUL'S CARMINE (H.P.) is a grand carmine climbling single Rose, and sure to become popular.

TOM WOOD (H.P.) lasts a long time when cut, and keeps its fresh, cherry-red shade well. An excellent grower, free bloomer, and one of our best exhibition flowers. I must also name the following four

HYBRID SWEET BRIERS

as extra good: Lady Penzance, Jeannie Deans, Anne of Geirstein, and Flora McIvor.

Turning to Roses of still newer date, a few words upon those seen at the Crystal Palace Show of the National Rose Society may be welcome. Only one gold medal was awarded, and this went to a new H.P. named

ULSTER, from Messrs. A. Dickson and Sons, Newtownards, Ireland, It is a deep pink, lighter edges, well built up, large, and a good grower. A certificate of commendation was awarded to Mrs. Rumsey, a Rose we have already noted, from Mr. Rumsey, Waltham Cross; and also to a single H.P., named Royal Scarlet, from Messrs. G. Paul and Son, Cheshunt.

No other awards to purely new Roses were made, but some grand ones were shown. Some of them are certain to gain the coveted gold medal in the future. Mrs. Frank Cant is a clear light pink; F. W. Sanford a deeper pink; and R. B. Cates a promising Rose of the Helen Keller type. In a class of twelve new Roses, Messrs. A. Dickson and Sons staged those of their own raising entirely, and several were very promising, especially one named Killarney, a H.T., that is a most exquisite soft salmony-peach with silvery edges. I am assured by the raisers this is one of the very best they have produced, and I need say no more than this when we remember that no less than seven of those named in our twenty-four are of their introduction during the past three years, and that all are first-class.

A. PIPER.

CLIMBING ROSES UNDER GLASS.

(REPLY TO "AMATEUR," GLOUCESTER.)

WE give you a full reply because the subject is seasonable and of importance. In the first place, now that the Roses are past their beauty, the older wood, and that which has flowered, may be thinned out to make more room for new growth. However, much of this depends upon the varieties grown. We would hesitate to cut back William Allen Richardson, because it so often produces a succession of flowers throughout the season. But if you wish for a good show next spring, it will be better to cut out and confine the plant to making long rods for next season's use.

Give as much air as possible, and see that the borders have a thorough soaking of liquid-manure, not strong, but in large quantity. Frequent syringing, even if with soft water alone, will do much towards keeping the growth clean and healthy, and without this it is quite impossible to secure good results next year. We imagine yours to be full of green-fly, and very dirty from the sticky nature of their deposits. If so, use a mixture of soft-soap and water, at the rate of an ounce of soap to the gallon, adding a tablespoonful of paraffin, and keeping the solution well stirred when syringing. If very bad, cut off the worst leaves, and thin out as far as possible before attempting to clean. Move the surface soil slightly, and trim round generally. Any neglect now is sure to affect your future crop, no class of Rose being more dependent upon healthy summer growth than climbers. Unfortunately, they are much neglected when others come in so freely outdoors, and the main mischief is done before the summer passes.

Treatment of Rose-trees. — Do my Rose-trees want repotting now? They are very much pot-bound, and their names are Niphetos, Mme. Falcot, Catherine Mermet, and Marie Van Houtte. What shall I do with Maréchal Niel, which is pot-bound in a 4-inch pot? Can I plant straight into a border now inside? It has a stem about a yard high.—INQUIRER.

*** For the first part of your query please refer to our opening article upon pot-Roses in the issue for July 3rd, where the subject is fully dealt with. By all means plant out your Maréchal Niel, or repot it at once. If much

pot-bound we would break the pot carefully and remove the pieces in preference to jarring and tearing away the roots in the usual manner. It might be placed into a small tub or square box; but a properly prepared border is safer as regards root-moisture later on.

A PHENOMENAL ROSE YEAR.

I am curious to know if my experience of Roses this year coincides with that of your readers generally? Here the growth has been luxuriant, the foliage healthy, and the blooms abundant and perfect both in form and colour. Out of a small collection of fifty bushes or so I have had the greatest success with the following—viz., Mrs. John Laing, Ulrich Brunner, Baroness Rothschild, Thomas Mills, Suzanne Marie Rodocanachi, Maggie Dickson, Marie Verdier, Victor Hugo, Mme. Falcot, Edith Gifford, and Paul Neron, some blooms of the latter being as large as the crown of one's hat. La France promised well, but fulfilled very indifferently. Surely the flower is a bad "opener" generally; at least, that is my experience. I attribute my success to starting with a good selection (Benjamin Cant's Jubilee collection), to rigid pruning, a heavy winter mulch, and moderate feeding during the season of bloom.

R. W. J., *Hastings, Sussex.*

ROSE CRIMSON RAMBLER.

Although so much has been written about this Rose, I feel a few words upon its present beauty outdoors may not be out of place. Recently I saw a plant covering a space quite 12 feet square, and one mass of flowers. Several of the pyramids of blossom were above a foot in length, and carried over fifty blossoms. It is remarkably bright and lasts fresh a month or six weeks. I do not mean that each blossom retains its freshness so long as this, but they last a week, and the constant opening of others upon the same truss makes a grand feature in whatever form this climber is used. As standards we now have it in full beauty, and I can strongly recommend it as a good substite for double Scarlet Thorns. It has much the same appearance in the distance as a grand form of Scarlet Thorn, and when grown upon tall standards very few subjects are more showy on the borders of lawns. There is no other colour of this shade, and the long, drooping branches, clothed throughout their whole length with deep crimson trusses, are most effective. When grown as dwarfs among a border of shrubs, I would prune away as soon as it had flowered, and limit the plants to a few shoots of extra vigour, slightly bending these over in the spring. A plant that was growing in the corner of a lawn made some grand shoots last summer and autumn; many of these were 10 feet in height, and they were brought down to within a foot or so of the ground this spring, and securely fastened in a horizontal position. The bold, upright trusses are a grand feature at the time of writing. Crimson Rambler, with its deep crimson; Aimée Vibert, a pure white; and William Allen Richardson, with its orange and apricot shades, make grand border Roses when fastened down in this way, and cannot well be beaten upon the edges of a fairly large lawn. P. U.

*** We do not care for the colour of Crimson Rambler Rose. It is unpleasantly garish, and when fading changes to an objectionable magenta tint.—Ed.

Rose-leaves.—I enclose these Rose-leaves for your inspection. I asked the other day, and you suggested that it was probably the result of cold winds and frosts in early spring; but the new growths which are strong and vigorous become affected as soon as the leaves become full grown. The lower stems are quite bare and yellow, and the buds alone remain on them. Can you suggest any remedy?—G. S.

*** Your leaves are affected by the early stages of red-rust; it is a disease seldom found upon the true Teas and Noisettes, but much affecting the other sections during some seasons. There is no known remedy, nor do we know of any cure or cause of this disease, which, with other summer trials of Roses, we are treating upon in an early issue. The trees grow out of it.

Planting Rose-trees.—When is the time to plant Rose-trees, climbers and otherwise, in the open garden, and what kinds are best for a slighuly sandy soil? I want them simply for flowers.—J. Harrison.

*** Transplant in November, if possible; if not, we would select the first open weather between November and early February. A list of Roses suitable for various purposes and soils will appear in due season; it would be premature now and probably need repeating. As you cannot plant yet, please look out for it.

Pink Gloire de Dijon Rose.—Do you know this by any other name? It is a Rose I have never seen at a Rose show. I fear you will hardly realise its beauty of colouring by the time you receive this, as the colour fades quickly. When first picked it has an intensely vivid glow of bright salmon colour, and is a very lovely Rose. It was given to me as a pink Gloire by friends who were keen gardeners, but I have never seen it anywhere else. You will see that it is not Souvenir d'un Ami, as you suggested it might be last autumn.—Helston.

*** The Rose blooms you send are not Gloire de Dijon at all. The colour was much faded upon arrival, but we should say it is a Tea, probably Mme. de Watteville. If you can spare a bud and half-expanded bloom again we shall be better able to tell. Roses wither quickly.

Rose Sylph (Tea).—This Rose is a gem, and one of the very best Teas sent out for many years. The flowers are produced in great abundance upon stiff stems, every flower and bud being thus seen to great advantage. It is a true Tea in its delicate colouring, which is a combination of ivory-white, flesh, fawn, and violet. The deep-pointed buds are most useful for cutting, and the great substance of the older flowers makes this variety a valuable one to the exhibitor. Sylph often reminds me of Souvenir d'Elise Vardon when in the half-expanded stage, but it is exempt from the very moderate growth of that superb Rose; indeed, it is as vigorous as Marie Van Houtte, Mme. Lambard, and similar kinds. This Rose will be a valuable one to the decorator, as it may be cut with stems fully 2 feet in length, and the flowers are very lasting.—W. E.

Rose Kaiserin Friedrich.—All who love the old Gloire de Dijon will be well repaid by finding room for the beautiful Rose named above. It is a sport from Gloire de Dijon, and is a counterpart of that variety in growth and hardiness, but its colour is the great attraction, this being yellow, shaded with that beautiful tint of carmine so much admired in Marie Van Houtte. The buds appear even of better shape than those of its parent—a not uncommon fact in sports.

Rose Mme. Alfred Carriere.—We are sadly in need of a good white, large-flowered, hardy and perpetual climbing Rose. We have a near approach to this in the above variety. It cannot be called pure white, the colour being really a flesh-white, but at a distance it has the appearance of being white. It is a splendid grower, and would quickly cover a wall. Like most climbers, it should be allowed to have its own way, merely cutting out a rod now and then if it becomes too crowded.

Budding *(Countess).*—By the time the Rose-buds are inserted in the Brier-shoots new growth will have been made; therefore, no great harm will result from cutting off the shoots.

Climbing Roses on an iron fence.—If your correspondent "Heron" will have his wire netting painted over with two coats of good thick oil paint he will find that he can grow Roses or any climbers he wishes thereon. I speak from experience, having surmounted the same difficulty.—North Western.

Rose (H.P.) Mrs. Rumsey.—Mr. Rumsey, Joyning's Nurseries, Waltham Cross, sends us a photograph of Rose Mrs. Rumsey. The photograph was taken at the end of June, and the trees are now (July 15th) in full growth, and setting a similar lot of bloom for just another such display by the end of this month.

Polyantha Roses.—Are these Roses quite hardy for North of England, and are Lord Penzance Brier Roses very free blooming?—Bead.

*** The Penzance Briers are very free flowering early in the summer, but, like many others, do not bloom much in the autumn. Yes, the Polyanthas are quite hardy.

Diseased Rose-leaves.—I enclose some Rose-leaves. Please say what is the matter with them, and what can be done to prevent or remedy the disease? Nearly all my Roses are affected, La France worse than any other. Its leaves have all gone, and the immature buds are decaying.—W. J. W.

*** See reply to "G. S." Your plants are affected by red-rust, red-spider, and mildew.

THE NIGHT-SCENTED STOCK.

Matthiola bicornis (the Night-scented Stock) is, I think, less known than it deserves to be. Bacon, in his delightful essay on "Gardens," says: "And because the breath of flowers is farre sweeter in the aire (where it comes and goes like the warbling of musick) than in the hand, therefore nothing is more fit for that delight than to know what be the flowers and plants that doe best perfume the aire." I know of no flower that better performs this office than the Night-scented Stock. The habit of the plant, too, is attractive. Through the hot July days the flowers seem to wither, the plant looks perfectly miserable, and is devoid of scent. But as the cool hour of sunset approaches the petals, which were crumpled and flaccid, straighten and stiffen again, so that presently the plant is covered with little mauve stars, each pouring forth its "breath" plentifully into the air. The odour is highly aromatic but of surpassing sweetness, and will float far across the garden on a gentle breeze.

Quaint, too, are the long seed-pods, each with a couple of divergent horns at the tip; from these it gets its specific name. It is to be treated as a hardy annual and sown in April where it is to bloom. A clump should be in every garden, but somewhat in the background, for though its affected misery in the daytime may raise a smile, it is hardly ornamental. If possible, let it be near a lawn where you sit out in the evening, or under a window through which its perfume may be wafted indoors. I have another plant whose flowers have the same habit of shrivelling by day and opening again by night—a little rock plant,

Silene petræa. But this has no scent. For a long time after I first grew it I thought it a poor thing, as its flowers never seemed to open properly. One night I was undeceived when I chanced to visit it late and found it a mass of white stars. I should be glad to hear of other plants with the same habit. I believe the majority of night-opening flowers open once only and close for good the following day.

J. W. M.

GARDENING NOTES.

The Anchusas are all border perennials, quickly raised from seeds, and remarkable for their abundant brilliant blue flowers. Excepting A. capensis, I find them quite hardy here, and the thick, fleshy roots can be carried anywhere in autumn. A. officinalis (Borage of old times) was used in salads and cooling drinks; a coarse plant, only fit for the front of a shrubbery. Bees are very fond of this family. A. italica has been very gay for some weeks past. I had to make a lady's bouquet for a special occasion—red, white, and blue—and composed it of a crimson Rose, some Mrs. Sinkins Pink, and a bunch of A. italica. I have other Anchusas not yet in flower.

Roses are generally poor this season. They never recovered from the effects of their early growth, having been battered by north-east winds and piercing frosts, the only exception being W. A. Richardson, of which the blooms were never so numerous or high-coloured before. It is planted outside against a wall, with its roots in soil, close to the return flow-pipes of the boiler.

Tangier Pea.—This pretty annual climber is remarkably luxuriant and free-flowering in a well-sheltered situation without shade. No Sweet Pea has the brilliant hue, but it is scentless.

Montbretia rosea.—A plant of slender, delicate proportions, and a great contrast to the other gaudy kinds. Its pink flowers furnish a neat addition to a bouquet. Its roots do not multiply fast. W. H. L.

Œnothera macrocarpa.—This is a very showy plant of trailing habit, flowering well at the present time. Its large blossoms of pale yellow are showy as well as distinct, and, allowed to trail at will, it makes a desirable plant on the rockery. Beds here and there may also with advantage be devoted to it, and with the assistance of a few spikes of Gladiolus may be made gay for a long season.

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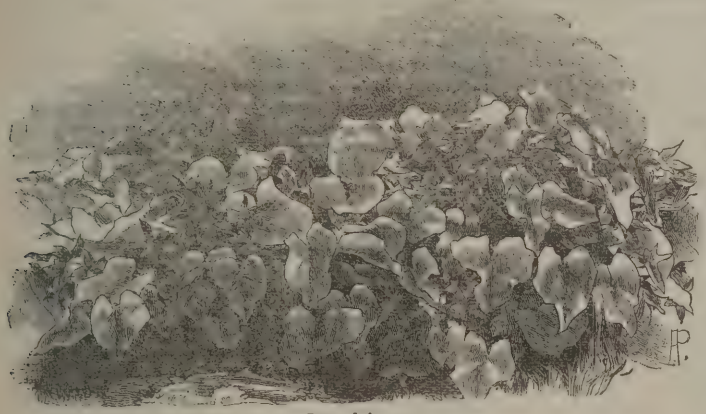
EDGINGS IN GARDENS.

The subject of garden edgings is more important than may at first sight appear. Many an otherwise charming bed is spoilt by some ugly tile or wooden edging, which is wholly unnecessary.



Ivy edging.

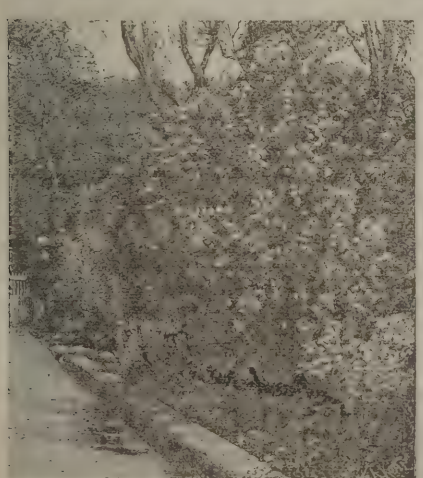
There is a host of delightful plants that may be used either by themselves or with hard stone, over which they readily creep.

A favourite edging in gardens is the fancy tile, but anything more unpleasant one can scarcely conceive — hard, cold-looking, and utterly out of harmony with flowers. Peculiarly distasteful are those wavy tiles of brownish colour used largely in many gardens, which are ugly in themselves and liable to split with frost. Plants do not take kindly to them, and we have seen them try to cover the ugly brick ends, which are almost as objectionable as fancy tiles. Then, too, the tiles are far more costly than plants; and the burnt tiles, with a bead on the top, get quickly broken by the frost. Terra-cotta tiles are better than these and more durable, but we do not like such edgings at all.

Oyster-shells, of course, are only seen where the owner is absolutely devoid of taste. No one else could tolerate the horrible jumble of shells and broken china that we see in some gardens, the shells forming the edgings. Still, the writer of these notes has seen such a disfigurement as this, and records the fact.

Board is certainly less objectionable than oyster-shells, but it makes a very hard, severe line, and it quickly decays. If one wishes to breed plenty of fungus in a garden a board edging will promote a good stock, and once such pests get into the garden it is not easy to destroy them effectually.

Plastered edgings.—We give an illustration showing a wretched mud edging. These miniature ramparts, though less common than formerly, are a blot in many gardens and parks.



Large edging to rough border.

They are made of muddy and nasty compounds, and in addition to the offensive aspect of the little walls when first plastered up, there are the cracks which come after—well shown in the cut. In a hot year, or any year, it is madness to cock the beds upon a little wall like this. The proper way to make a flower-bed is to let the earth slope gently down to the margin, as it was for ages before this ugly notion came about.

Stone is excellent for edgings if hard. In all quarries there is generally a quantity of refuse which might be used for edgings. The Surrey Bargate stone s very suitable, and so, also, is the flaky stone in Oxfordshire and Gloucestershire used for the roofs in olden times. If they are nearly the same thickness, pieces of various shapes and sizes may be used. The charm of rough stone edgings is owing to their getting a good colour through being clothed with small Mosses. They require no hard, rigid setting, looking much better set simply. Unlike the cast tiles, they are none the worse if they fall out of line, and are easily removed and easily reset. They are the cheapest,

Stone edging. From a photograph by Mr. A. Emblin, Worksop, Notts.

and give by far the best effect of all edgings. Flint, too, makes a good edging. Edgings are always much better made of the

Natural stone which abounds in various counties. An edging in a garden may be a beautiful thing by reason of dwarf rock plants being associated with it. If we have an ugly stiff tile edging one would hardly think of putting an alpine flower near it; but if, on the other hand, we have any good natural stone edging, it forms the most delightful place for easily-grown rock plants — the Aubrietias, Arabis, Sedums, Saxifrages (Rockfoils), Gentianellas, and other dwarf things. If the stones are irregular in size and outline the best way is to sink them partly in the ground. Among these stones we can have a whole flora of pretty plants running in and out, and spreading into gravel walk or soil. There is no difficulty whatever in growing numbers of flowers in this way. In all borders of hardy and alpine plants a good plan is to let tufts of vigorous dwarf plants grow a little into the walk.

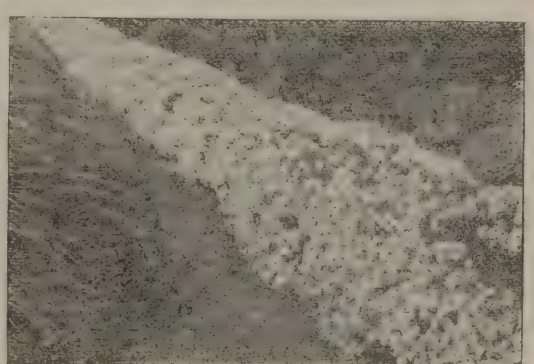
Box is formal, but it makes an interesting edging. It is best as a tall, stout edging, say 15 inches to 18 inches high, boldly used, such as one sees the Rosemary edgings in southern gardens. A garden is spoilt, however, no matter how well filled with flowers, if the walks are edged with Box showing patchy spots and a worn-out aspect. It is rather expensive to maintain in perfection, and those who cannot thus keep it should dispense with it for something more readily managed. Where Box edgings are cared for they should be clipped every year, the end of May being the best time, as the young growths often suffer from spring frosts. By clipping in early summer the young growth soon

Example of cracked mud edging.

commences, and takes off the hard look that follows the use of shears. Injury is done through salting the walks to destroy weeds when falls of rain float the salt to the edging and destroy it. An enemy to Box edgings is the growth of garden crops or flowers overhanging them and drawing them up weakly. Where proper attention is paid to Box edgings they are charming to many, though they are not nearly so good or pretty as the natural stone edgings. The

Rockfoils make charming edgings, none more so than the Mossy Saxifraga hypnoides, which we are pleased to see used with so much freedom in Regent's-park Gardens. This is a dwarf, fairly even plant, free, and is satisfactory in almost all positions, even though in partial shade. If a few spring bulbs are planted amongst it one gets colour in the early months of the year, the Scillas, dwarf Daffodils, such as Narcissus nanus, Snowdrops, and similar bulbs making a brave show against the green Mossy growth. Then in the early summer one gets a wealth of white flowers on the plant itself, and at all seasons a soft, spongy, refreshing green look. Then one can have S. Wallacei (Camposi), S. Burseriana, S. B. major, S. cæsia.

White Pinks make a beautiful edging — few plants more so—and we should like to see the plants more used for this purpose. We have seen many splendid edgings in gardens of White Pinks, especially the variety Mrs. Sinkins, which is very free and pleasing. One can gather many hand-



White Pink edging, at Sark, Channel Isles. From a photograph by Mrs. Arthur Bellin, Sark.

fuls of blooms, too, for the house from a wide margin of this plant, and few things are more easily grown, ordinary garden soil being sufficiently good. Then, too, we get the pleasing

effect at all seasons of the silvery tufted growth which relieves beds of bareness in the winter.

Gentianella.—This beautiful alpine plant is very charming as an edging where it can be grown well. Edgings of it—when smothered with the bold, deep blue flowers—are very rich and pleasing even when without bloom. The rosettes of small leaves are pleasing to look at throughout the year. The flowers are generally rich blue, but there are varieties of it; one almost pure white. It enjoys a moist, loamy soil, and is not at home in dry ground. It retains moisture as much as possible; it is well to put down some flat stone round the plant, half burying it. This retains moisture, but in many places the Gentianella is quite happy without this assistance. The

Thrift (Armeria vulgaris) is another pretty edging, and is very easily grown; but to keep the edgings in perfection it is necessary to take up the old plants, divide and replant the small tufts once in three or four years. Unless this be done patchy places are likely to occur, which, needless to say, are not desirable. The cushions of narrow, grassy leaves are very pretty, and for no small part of the summer they are almost hidden with the rosy flowers.

Veronica rupestris is a very beautiful edging which one does not often see in gardens. It is a prostrate trailing plant, very pleasing to use alternately with the White Pink. The flowers of the Veronica are of richest blue, and appear in June, the season for Pinks.

Edelweiss is not often seen as an edging, but where it grows well it is very welcome. Edelweiss may be planted amongst stone, and will stand the winter well if the soil is light and gritty and the position sunny.

Ivy makes a beautiful, broad, evergreen edging, and is quickly established if strong plants are used to commence with and reasonable care given afterwards. One sees edgings of Ivy unpleasant to look at simply from neglect. They have got patchy and worn out from want of kindly assistance, as a rule, in early growth. Very useful Ivies for edgings are the Irish, Caenwood, Algerian, and Amoor.

Stonecrops are excellent for edging. The most suitable for the purpose are Sedum acre and its varieties, S. a. aureum (perhaps the best, being very distinct and bright in spring), and S. a. majus, a fine robust kind. Besides these other well-known kinds may be used, such as S. Lydium, S. spurium (S. stoloniferum), and S. rupestre. Then there are the

Sandworts (Arenarias), the Aubrietias, the smaller Campanulas, the Moneyworts (Lysimachia, also called Creeping Jenny), and for mild climates the brilliantly-coloured Mesembryanthemums; but these must have a light dry soil and full exposure to the sun. Then, too, some of the

Sempervivums, especially the little Cobweb Houseleek (S. arachnoideum), are very useful.

Quatre Saisons Strawberries make very charming edgings, too, in the less conspicuous parts of the garden, and might be planted with advantage as such in the fruit and kitchen quarters. They are pretty in the leaf, and the little fruits are very pleasant in flavour; far more so than many of the larger Strawberries.

Grass edgings are wasteful and unnecessary. They are, unfortunately, used for little paths and borders, and entail endless labour which can well be given to more precious things. Grass edgings to lawns are necessary, and we do not grudge the labour expended on them; but Grass edgings are out of place in the garden itself. There is constant labour with such edgings—clipping with the shears at frequent intervals to keep them trim. Unless this be done often they get ragged and unkempt.

Gaillardia maxima.—The flowers of this variety are of great size—upwards of 4 inches across—while the gorgeous colour renders it most conspicuous. Such monster-flowered forms, however, are more useful in the border than for cutting, unless it be for very large vases. Many of the smaller-flowered kinds are of much value as cut flowers, particularly the clear yellow self kinds, and where these have a disc of the same colour.

Lilium Batemanniæ is a species of slender growth, the leaves narrow and delicate green, whilst the flowers, produced in a bold umbel, are of a very beautiful self apricot colour, quite distinct from anything else among the Lilies. It is a Lily that delights in partial shade and a well-drained loamy soil.

HOUSE AND WINDOW GARDENING.

DINNER-TABLE DECORATIONS.

I should like to write about some more dinner-table flowers and to tell beginners how to grow them. By planting them in a reserve bed it is easy to have quantities of these flowers year after year from the same plants.

For those people who like white flowers—and personally I like them on a dinner-table very much—the White Flag (Iris florentina) is very useful. By buying a few plants and dividing them in the autumn a large stock-bed could soon be filled. They flower very freely, and are lovely in May and in June. The White Flag Iris albicans Princess of Wales is quite as hardy, free-flowering, and pretty, and the Yellow Iris flavescens flowers midway between these two, and is quite as strong-growing, free-flowering, and useful for cutting as either of them. In June the pale Rose-heliotrope Flag Irises pallida, pallida Queen of May, pallida Albert Victor, and pallida Celeste are all lovely and flower freely, and arranged in glass vases on a dinner-table, with a pongee silk centre under them of a shade of a pale violet, they have a very pretty effect. Pallida Garibaldi and pallida Khedive are two others of a heliotrope shade which I have found grow in a satisfactory manner and flower freely.

I have said that it is easy to get up a stock of these by dividing them every autumn, but after the stock has been obtained I should leave the plants undivided until the centres become poor and the roots come above the soil. As soon as this happens divide them, plant the most healthy pieces, each with a good root of its own, and cover the roots an inch or more with soil. Deep planting is a bad plan, but Irises which have their roots exposed seldom do well, and as they work upwards a mulching of leaf-mould, soil, and well-rotted manure is desirable now and then. Avoid the actual contact of manure on their roots, though, and let the leaves die away in the autumn—do not cut them down. This applies to the growing of all Flag Irises, and I think that if these little points are attended to, it will be found that in stiff or light soil they do equally well.

For cutting there are few more graceful or lovely flowers than the Siberian Irises. Like the others, they soon form fine clumps, but I think they like to remain undisturbed, so I do not recommend them to be divided (though to get up a stock that is the way to do it, of course, and they divide easily and well). I have never found them any the worse, though, for remaining a long time in the same place, and they do not work out of the soil as the German Flag Irises do. Of these Siberian Irises, those named alba and lactea are white, and japonica, orientalis, grandis, atropurpurea (the type), and hæmatophylla are all good blue ones. They are prettiest when arranged amongst their own leaves, and they are such hardy, strong-growing plants that I have never found them the worse for having some of their grassy foliage taken for this purpose. Orientalis is the finest.

Nepeta Mussini is a herbaceous plant which grows about 2 feet high, and is easily increased by root division. A single plant of it will produce a great amount of flowers, and I wonder how it is that their long, feathery spikes of lavender-grey are not more used for cutting. The plants flower during May, June, and July—longer, in fact, than almost any other herbaceous plant—and there are a great many plants which are in flower at the same time which give a lovely effect if used in an arrangement on a dinner-table with them. One way is to put the graceful spikes of Nepeta in rather high glass vases and to fill some low glasses with the dark violet Pansy Archibald Grant, and place them amongst the higher ones and underneath them. Geranium ibericum, which soon forms strong plants 18 inches or 2 feet high, and bears a great many heliotrope flowers (about the size of a shilling and several on a stem) early in June, is another flower which is very easily grown, and which looks very pretty arranged with Nepeta Mussini. The flowers are almost the same colour as those of the Nepeta, and of so different a character that they can be arranged among them with good effect.

A pretty effect in reds and pinks of a rosy shade can be obtained by filling some glass vases with the long sprays of Centranthus ruber (which is another hardy herbaceous plant which produces a large supply of flowers), and to fill some lower glasses with sprays of double Ragged Robin (Lychnis flos-cuculi fl.-pl.), which freely produces pale pink flowers when the deep rose Centranthus rubra flowers are in bloom.

Anyone who agrees with me in liking the mixture of rose and pale blue, and who has the plants I have named above, will find the Centranthus rubra in high vases and Geranium ibericum in low ones under them is very effective, and makes another arrangement in which these flowers can be used. In the same way a pale heliotrope and pale pink effect can be produced, and is very pretty, by using the flowers of the Lychnis Flos-cuculi fl.-pl. and the Nepeta Mussini together (or rather not together, but in separate vases on the same table).

A very effective and uncommon arrangement can be made by using the graceful little flowers of Geum coccineum fl.-pl. and Geum hybridum grandiflorum in the same way. Like the others they are herbaceous plants, and produce flowers freely on the long stems, which make them easy to arrange in a light and pretty manner. The Geum coccineum fl.-pl. is much better known than the other, and has flowers of a rich crimson-red. The flowers of the Geum hybridum grandiflorum are a peculiar shade of orange, and harmonise very well indeed with the flowers of G. coccineum.

There is no doubt that some shades of orange and yellow go well with some shades of crimson and rose, but what can be more horrible than the combination of Scarlet "Geraniums" and Yellow Calceolarias? Both effective alone, they certainly can hardly be kept too far apart.

Mrs. Robert Jocelyn.

ORCHIDS.

Lissochilus speciosus.—This is a very old Orchid and one seldom seen at the present day. The plant consists of spherical bulbs, these being underground in a state of nature and bearing large showy green leaves. The flower-spikes push up after the manner of those of a Bletia, and the blooming keeps on over a considerable time, one flower fading and others taking its place. Each of these is about 1½ inches across, pale yellow on the sepals, the petals and lip much brighter, the latter tinged with purple. It is a true terrestrial Orchid, and may be grown in loam, peat, and a little leaf-soil or Moss and plenty of finely-broken crocks. It is a native of various parts of South Africa, and was introduced as far back as 1818.

Schomburgkia tibicinis.—The genus to which this plant belongs is not thought much of by present-day Orchid growers, but this is perhaps as handsome a species as any. The flowers are produced on long, slender stems that occur at the apex of the long, hollow pseudo-bulbs from which the species takes its name. Each measures from 3 inches to 4 inches over, the sepals and petals oblong, pale purple outside, deeper within, the lip yellow, with veinings of purple. In order to induce this species to bloom freely the growth should be well ripened in autumn and the plants kept at rest during the winter months. While growing, the heat of the East India-house is not too much, but in winter a minimum of 55 degs. is ample. It came from Honduras, and was introduced in 1834.

Cypripedium Godefroyæ.—It is getting late for this pretty plant to be in flower, but the curious and interesting blossoms are at all times welcome. It grows only a few inches in height, the foliage being short, the upper surface prettily shaded with light and dark green, the under side purple. In the typical form the whole of the segments are a dull white, with spots of purple, the latter being larger and more distinct on the sepals and petals than on the lip. It likes the same treatment as C. bellatulum, C. concolor, and other species in this set, and has been found by most growers to be better for a little limestone mixed with the ordinary compost. Plenty of heat and moisture and a shady position are also necessary, the plant being a native of the Eastern Archipelago, in the neighbourhood of the China Sea.

GARDEN PESTS.

Insects irritating skin *(Maori).*—Your garden is evidently infested, from what you say, by one of the mites, commonly known as the "Harvest-bug" (Trombidium or Leptus autumnalis). These mites are very minute, and are hardly visible without the aid of a magnifying glass. They are of a dark-red colour. They live upon plants, and I imagine but few out of many thousands ever come into contact with any person, but it seems certain that if they get the chance they will leave the plant to attack human beings, or any other animal that may come in their way, as is generally the case with insects that attack man. Some persons feel the effect of their bites or stings much more than others do, and I should be afraid that you were particularly liable to be attacked by them. Ammonia (hartshorn), dabbed over the bites with a piece of rag or sponge, is the best remedy; toilet vinegar is also very good for the same purpose, and should be used in the same way. Considering the number of plants that these mites infest, it is hopeless to try to eradicate them from your garden.—G. S. S.

Pansy roots eaten by wireworm *(Rice).*—I am afraid that I cannot tell you of anything that will kill wireworms that would be of any practical use to you under the circumstances. The best thing you can do is to trap them by burying small slices of Turnips, Carrots, Mangolds, or Potatoes near the plants, just below the surface. If you stick a small wooden skewer into each bait it will be more easily found. Pieces of oil-cake are also useful for the same purpose, or they may be also laid on the surface. The baits should be examined every morning.—G. S. S.

Hollyhock diseased *(S. E. H.).*—The Hollyhock leaf which you sent is, I am sorry to tell you, badly infested by the Hollyhock disease, which, as I daresay you know, has almost exterminated this plant in some places. If your plants are badly attacked the best thing you can do is to pull them up and burn them; if not, pick off the infested leaves and burn them, and wash the rest of the plant with a mixture of two tablespoonfuls of permanganate of potash to one quart of water. Any fallen leaves should, of course, be carefully destroyed. Spraying the plants with Bordeaux mixture has been suggested as a useful remedy. I should give the plants another washing ten days or a fortnight after the first.—G. S. S.

Strawberries eaten *(C. W. Lyon).*—It is most probable that your Strawberries are attacked by the spotted snake-millipede, or by one of the ground-beetles. If the former are the culprits you will find some on the fruit; if the latter, you will find them under clods, stones, or in cracks in the ground during the day, and feeding on the fruit at night. See an article on ground-beetles in GARDENING of the 17th July last.

Raspberries attacked *(H. Bastow).*—Your Raspberries are attacked by the grubs of the Raspberry-beetle (Byturus tomentosus). The only thing to be done now is to try and prevent next year's crop from being attacked. In the early spring, if many of the beetles are seen on the canes, they may be shaken off into open umbrellas or on to newly-painted or tarred boards. The chrysalides are formed in the ground in sheltered places at the base of the canes or among Grass or weeds near their roots, so that removing all weeds, and digging and hoeing in the autumn and spring, would help very much to this end.

Diseased plants *(Newport).*—As far as we can see from the leaf you sent your plants are infested with aphides or scale, the sweet, sticky secretions from which drop on to the leaves below, and cause the brown, dirty-looking encrustation, which you will find will wash off.

Wireworm *(H. Mitchell).*—We should think you would do best by going on with the trapping. If you decide to remove the plants you might as well take away the infested earth and replace it with fresh. It would be difficult to apply the gas-lime properly, and we should doubt if it would be safe to plant anything in the soil as soon as next spring.

Bee eating flower petals *(D. Brown).*—The Leaf-cutter Bee is well known to sometimes use portions of the petals of "Geraniums" to line their nests with instead of rose-leaves. You speak of the culprit as he, but the males take no part in these domestic arrangements. It is very pretty to see these insects at work, and they are seldom, if ever, common enough to do any real harm in gardens.

THE RASPBERRY-BEETLE (BYTURUS TOMENTOSUS).

THE Raspberry crop is not perhaps one of our most important fruit crops, but there are few gardens in which fruit is grown which cannot boast of having one or more rows of canes of this delicious fruit; though not seen so often on the dessert-table as some other fruit, we should lose one of our best jams, and Currant-tart and stewed Currants would lose half their flavour if we had no Raspberries. There are several insects which injure the Raspberry-plants, but as a rule they escape better than most crops from these pests. The subject of this paper (the Raspberry-beetle), however, at times does an immense amount of injury to the fruit, resulting even in the destruction of the entire crop. The beetles do a considerable amount of damage, but it is the grubs that are the cause of the chief injury, as they feed on the fruit itself. This insect also attacks the common Blackberry, and though I have not heard of a case of its doing so, it will probably become a pest on the American Blackberry, which is now so often cultivated for its fruit as well as for the beauty of its foliage. The beetles may be found on the canes as early as the beginning of May, feeding on the young shoots. The females lay their eggs in the flower-buds; these hatch when the fruit is formed and feed on the juicy portions, which they either entirely destroy or else so injure that they are rendered useless. When full grown, which is generally before the fruit is quite ripe, they descend to the ground or the lower part of the stems and become chrysalides, either in the ground or among Grass or weeds, or in some sheltered place on the stems. The insect passes the winter in this condition, and appears as a beetle in the following spring, when they at once begin feeding on the buds and young shoots, and in due time lay their eggs as before mentioned. The most effective way of destroying this pest is to kill the parent insects. This is best done by shaking the beetles on to canvas or sacking soaked in paraffin-oil, or on to newly-painted or tarred boards, as soon as they appear. This operation should be undertaken in the morning early, as the beetles are then more sluggish. Later in the day, particularly if the day be warm, they fly away as soon as they are disturbed. After a crop has been attacked, when the canes are being thinned, those cut away should always be burnt, as they may have some of the chrysalides attached to them. As regards killing the grubs, the only thing to do is to pick off the infested berries and burn them, as it is impossible to use any insecticide without spoiling the rest of the fruit. The Raspberry-beetle is quite a small insect, not measuring more than 1-6th inch in length. It is of a dark brown colour and is covered with a soft down. It flies remarkably well, so that it is of great importance to keep a neighbourhood free from it, for if one person's Raspberries are attacked and proper care is not taken to destroy this pest, all the gardens near may become infested. The grubs, when full grown, are about ⅝ inch in length; they are long and narrow, and are of a yellowish colour, with brown heads, and a large patch of the same colour on the back of each joint of the body. They have only three pairs of legs, one on each of the first three joints of the body. The body terminates in two points, beneath which is a kind of leg which, though not jointed, serves to prop up the end of the body. By the kindness of H.M. Stationery Department I am able to illustrate this paper with an admirable figure of this insect, drawn by the late Professor Westwood. G. S. S.

The Raspberry-beetle in various stages.

White Saw-fly on Roses *(Susie).*—As I imagined, the insects on your Roses are not Saw-flies of any kind, and they belong to quite a different order of insects. They are one of the members of the large family of Cercopidæ or Leaf-hoppers. The perfect insects may be caught by holding freshly-painted or tarred boards under the plants, so that when the insects are disturbed they may fall or jump on to them; the young wingless ones may be destroyed by syringing the bushes with the extract from 8 oz. of Quassia-chips, 10 oz. of soft-soap, to 10 gallons of water, or Tobacco-water and soft-soap.—G. S. S.

CAMPANULA PYRAMIDALIS.

IT is questionable whether many gardeners who have a conservatory to furnish are fully acquainted with the usefulness of the blue and white Campanulas for that purpose. Nothing could be more effective than the spikes of white and blue amongst other plants. The cultivation of Campanula pyramidalis is very simple, and where seeds have not been sown for next season's blooming no time should be lost. Two packets of seeds, one white and one blue, with a couple of seed-pans and a little fine potting soil, are all that is required. Disperse the seeds thinly on the surface and scatter a little fine soil over them. Place the pans in the greenhouse or a frame, and shade them until the seedlings appear. When large enough to handle they should be removed to small pots and grown in the frame till these are full of roots and another shift is necessary.

They may be wintered in 6-inch pots, and should stand in a cold-frame, or plunge the pots in ashes in a sheltered position outdoors so that they may be protected in the event of severe frost. In April or May transfer them to their flowering pots—namely, 7-inch or 8-inch size—using a compost of good loam and sand, with an admixture of well-decayed manure. Stand the plants outdoors in a warm, sunny position, and when the flower-spikes are discernible assist them by applications of liquid-manure or soot-water. Stakes will be necessary to support the flower-spikes, or the wind will blow them over, and there is a danger of them breaking. They may be transferred to the conservatory a few at a time, choosing the earliest first, which under the warmer conditions will be the first to bloom, and in this way a succession may be kept up through the summer. By attention to these simple details of cultivation there is no reason why every amateur should not have a display of these attractive flowers. H. H.

Carnation Mephisto.—This fine border Carnation is of the same shade of colour as the Crimson Clove, and regarded as the best of its shade yet raised. The flowers possess the most exquisite form of any Carnation and may, in short, be regarded as perfection in this respect. It is also a free bloomer with good habit.

Foxgloves in Ayrshire.—I recently had the accompanying photo taken of a group of Foxgloves in my garden, which were very fine. There were 400 heads on 90 plants, and many of them 7 feet high.—E. P FREDERICK, *Quarter, Largs.* [The photograph showed one of the finest colonies of Foxgloves we have seen].

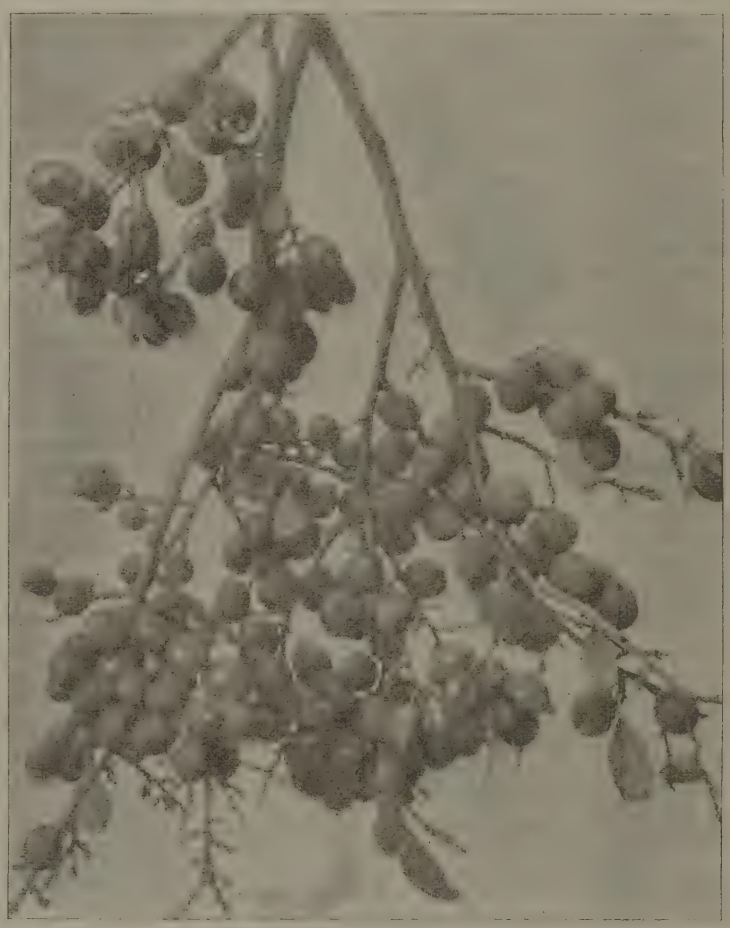
A fine Gloxinia.—We have received from Mr. A. H. Watts, Houghton Lodge, New Barnet, a photograph of a Gloxinia carrying over forty blooms, grown in ordinary potting soil in 32 pot.

FRUIT.

DAMSONS.

Damsons do so well in the West of England and some of the midland counties, that no matter what kind is grown a profitable return may be expected. There is a large demand for the fruit in the towns, and it makes a splendid preserve. The variety illustrated—the King of the Damsons—is less known than the one grown so largely in Worcestershire, Shropshire, and Herefordshire, and called Bradley's King. King of the Damsons may be used for dessert, as it is less acid than the smaller kinds, and in certain soils prolific. Damsons like a fairly good holding, or what is termed loamy soil, and free exposure. The trees need little attention, and if not crowded require scarcely any pruning. In country places cottagers often plant these trees in the hedgerows, the stems being a few feet away from the hedge, and they fruit grandly. The wood made yearly is short, thick, and studded with fruit-buds. Given a favourable spring the trees rarely fail. I think free exposure has much to do with the fertility of the trees, as in the counties in which Damsons grow well I have seen orchards in sheltered spots far less fruitful than trees dotted here and there or left to chance.

Damsons do not like a hot, gravelly soil, and doubtless this is the cause of many failures; indeed, soil has much to do with the fruiting of the trees. In certain districts these trees fruit so freely that there is a glut, but, fortunately, fruit will hang some time after it is ripe. There was at one time a certain demand for the Damson for dyeing; chemicals have now taken their place, but, so far as I can observe, the market is never closed to fine fruits, and the earliest and latest have the best sale. Amateurs who like Damsons may with advantage plant the Cheshire or Shropshire Prune, often known as the Michaelmas Plum, as its season is the end of September. This is one of the most prolific kinds I know. It bears smaller fruit than the one illustrated, but it makes up for size in quantity; the fruits are splendid for tarts or preserves. The Hereford Prune is not unlike the above, but it is a longer fruit, with smaller foliage and dwarfer growth, and is a splendid cropper. The Farleigh Prolific, also known as Kent Cluster and Crittenden, is much grown in Kent. The fruit is produced in clusters, and the best results are obtained from worked trees (budded). The trees should be standards. In light poor soils blight is a pest, and it is not readily got rid of. In the counties noted above the trees are often secured from suckers—that is, are grown on their own roots. They are remarkably productive, and I never saw trees so free from blight; but, as noted, much of this success is doubtless due to the soil. W.



Damson King of the Damsons.

Watering Vine.—Will you kindly advise me on this subject? I usually water mine (a Black Hamburgh) once a month, and then give plenty, but I want to know the best way to tell when water is required. I last watered mine on the 10th June, but so far as I can see and feel, the soil is still damp; but I do not want to run the risk of letting it suffer for want of moisture, and would like to know if I should withhold water until the ground looks and feels drier, or should I water at once?—Doubtful.

*** Without knowing something about the conditions under which the Vine is growing, such as whether the soil is heavy or light, the depth of the border, and how it is drained, and what is important, whether the border is inside or out, we cannot assist you much. Usually, in well-made inside borders, where the soil is 3 feet deep with 9 inches of drainage below, watering is done thus: When the Vines are started the soil is thoroughly soaked, again when the bunches are thinned, and when colouring commences another good soaking is given. After this, one more heavy watering, as a rule, carries the Vines over the ripening stage. In your case, dig a narrow hole, 18 inches deep, in the border; if the soil is moist, withhold water; if the reverse, give a good soaking.

WASPS AND THE FRUIT.

The attack on ripe and even green fruit is an annual evil most growers have to reckon with, more or less, according to the nature of the season. Evidently wasps are experts in the art of finding out the best varieties, whether it be Apples, Pears, Plums, Peaches, Nectarines, or Grapes. Plums and Pears they are often destructive amongst. The Seckle Pear is a great favourite both with wasps and hornets. Doyenné du Comice, Louise Bonne of Jersey, and Marie Louise are other good Pears they attack; indeed, where the crop is small they soon monopolise the whole. Beurré Clairgeau they seldom touch, and I have several other sorts which they do not appear to notice. In Apples, Cox's Orange Pippin is the greatest sufferer, and Ribston is a favourite spoilt. Coe's Golden Drop, Bryanston Gage, and Reine Claude de Bavay are Plums they choose in preference to others available. Such sorts as Pond's Seedling, Victoria, and Belgian Purple do not attract them. It is not quite so marked perhaps in Peaches and Nectarines, but seldom do the late sorts like Princess of Wales and Lord Palmerston get eaten if others of the Bellegarde type are within reach. Muscat Grapes they appreciate more than Alicantes, as they do not touch the latter growing in the same house. I have never known hornets attack indoor Grapes, nor do wasps attack indoor Peaches and Nectarines here, although on the open wall they are very troublesome. I always destroy all the nests of pests that can be found within a half-mile radius, but still they come in goodly numbers. Two hornets' nests were destroyed last year, one in a bank close to a small stream, which I think is an unusual place, the other in a hollow garden wall. One was destroyed with cyanide of potassium, the other by flames from straw on which was sprinkled some sulphur. This, with the openings in the wall closed with wet clay, soon made a complete clearance. S.

Vines in towns.—Living in a town where the atmosphere is almost as smoky as is that of London, and where it is most difficult to induce any ordinary plants or climbers to grow in small backyards, yet I find such Vines as readily come from seed-pips saved from the shop-raisins to grow well and thrive where Roses, for instance, get starved through aphis and fungus. Although Vines are a long way from being evergreen, and would not under the best conditions produce edible Grapes, yet they they do offer in the summer season grateful greenery, and form pleasing covering for hot walls or wood fences. That is, therefore, good reason for growing them. Those who do not care to raise common Vines in this way can no doubt obtain cuttings from the White Sweetwater or the Parsley-leaved varieties, and setting them into the soil in October as ordinary cuttings, or close under a warm fence or wall, will find them root and grow the following summer and make long shoots.—D.

Raspberries.—Although the fruiting season for ordinary varieties is pretty well done, yet the new canes will well repay good soakings of water should rain not have fallen, if at once applied. It cannot be too strongly emphasised that it is the cane of the season which will have to produce the fruit crop of the next, and therefore the stronger the present growth the greater the fruit crop and the finer the sample next year. If the old fruiting canes be at once cut away, and any superfluous new ones removed, leaving not more than five of the strongest to a stool, the surface of the soil lightly stirred, then a mulching of dry manure laid down about, the results will be of the best, and the foundation laid for a fine fruit crop next year.—A. D.

Names of fruit-trees.—Will you kindly give me the names of the best kinds of fruit-trees as follows: Two standard Apple trees, two standard Plum, two standard Cherry, four pyramid Apple, two standard Pears, two pyramid Pears, two pyramid Plum, two pyramid Cherry, to fruit in succession for kitchen and table? Own use—not for market. Situation rather cold and windy. Only shelter a 5-feet fence, west side. Which is the worst side for wind and cold?—N. de P., *Leeds*.

*** *Apples—standards:* Worcester Pearmain, dessert; Bramley's Seedling, kitchen. *Pyramid:* Warner's King, kitchen; Lord Grosvenor, kitchen; Cox's Orange Pippin, dessert; King of Pippins, dessert. *Pears—standards:* Jargonelle, Williams' Bon Chrétien. *Pyramid:* Doyenné du Comice, Pitmaston Duchess. *Plums—standards:* Prince of Wales, Bryanston's Green Gage. *Pyramid:* Early Prolific, Victoria. *Cherries—standards:* White Heart, Bigarreau. *Pyramid:* Bigarreau Napoleon, Governor Wood.

Acantholimon glumaceum.—A very pretty summer-flowering rock plant of dwarf growth and forming cushions of spiny leaves. From the base of the growths appear many frail, somewhat arching spikes of rosy-pink flowers. The plant is of free growth and fairly abundant in gardens, much more so than the far rarer and more beautiful A. vénustum, the latter not quite hardy in all winters.

FANCY PANSIES.

Tastes differ regarding the different forms and colours of the Tufted Pansy, and while many gardeners prefer the selfs, others are interested in the edged and fancy types of the blossoms. Some varieties are of compact growth, and others tall, straggling, these latter kinds being specially suited for associating with such plants as Carnations, Fuchsias, Marguerites, Cornflowers, and similar things. Each variety seems to have its proper place, and a beautiful illustration of this is to be seen in the gardens at Regent's Park, where there is a charming arrangement in a rock garden there. Blocks of different sorts are massed together, and the effect produced is unique. The old favourite, Countess of Kintore, now discarded by many, occupies the centre of this arrangement, and a fine, bold, and striking effect is made by it. For the benefit of the readers of Gardening, I append a list of the most reliable sorts, with a description of each one.

Mrs. C. F. Gordon.—This is a great improvement on Countess of Kintore. The flowers are large, colour in the centre dark purple, shading to pale lavender on the outer edges of side petals, the lower one being violet, shaded lavender, the top petal being of a lavender shade of colour. Fairly compact habit, good constitution.

Cottage Maid.—This is a beautiful companion to the last-named variety. The flowers are large, of good form, and marked alternately purple-violet and lavender. It is a most consistent variety, and blossoms profusely from early spring until the late autumn. The habit is very good for this type of the plant, and the constitution also robust.

Countess of Kintore.—I have included this old variety for its value as a tall-growing sort. Its colouring is very similar to Mrs. C. F. Gordon, and it is also a good variety for the town garden.

Iona.—This variety caused quite a sensation when first distributed. The flowers are fairly large, top petals lavender, lower ones blue-black, with a white blotch at the edge of each petal. This is a rather tall-growing sort, but the flower is distinct and of a clear colour.

Mrs. A. M. Young.—This is a good variety; the blossoms are large and freely produced. It is probably the darkest of this type of the flower, and may be described as marked alternately deep bluish-black and a lighter shade of the same colour. It is something in the way of Iona, but the colouring is not so clear and distinct as that variety. Robust constitution and fairly compact habit.

Dandie Dinmont.—Somewhat new is the colour of this variety, the markings being alternately purple and white, and making the plant a capital companion to the two last-named sorts. Fairly good habit.

The Mearns.—This old variety seems to be doing exceptionally well this season. The flowers are large and freely produced. Colour rich plum and white. Fair habit, good constitution. I recently saw a bed with 500 plants in full flower.

Princess Beatrice.—This is a very fine flower when the weather is not too warm. The flowers are of large size, good form. Colour clear rose, with deep crimson centre; a very effective contrast. Good habit and free-flowering. Constitution good also.

Stobhill Gem.—A beautiful and clear cut flower, blooming from early spring and throughout the summer months. Colour, lower petals rich purple-violet; top petals bluish-white. This variety may be considered an ideal flower. Fairly compact habit and good constitution.

Lady Revy.—This is a pretty medium-sized and good garden flower. The centre of the blossoms is deep violet, shading to creamy-white toward the edges. Good habit and robust constitution, also free-flowering.

Mrs. H. Bellamy.—This is still highly valued for the garden, although individual flowers do not compare with those of some of the more recent introductions. The blossoms are of medium size and freely produced. Colour, pale lavender. Very neat flower; strong growing.

Lady Isabel.—The selection would not be complete without this variety; it is excellent for town gardens and confined areas. Flowers of good size and neat form. Colour, top petals violet, shading to lavender; lower petal violet, tipped lavender. Good constitution.

D. B. Crane.

THE GOLDEN-RAYED LILY.

At this season one of the noblest flowers in the garden is Lilium auratum, of which we give an illustration of a handsome group, planted among shrubs—the best way of showing the bold flowers to advantage. So much has been written in Gardening about this Lily that we need not refer further to it at present.

The Golden-rayed Lily (Lilium auratum). From a photograph by Miss Pritchard, Craig Foot, Windermere.

Seedling Fuchsias.—Fuchsias are so readily propagated from cuttings, and there are so many recognised varieties of undoubted merit, that the fact that they can be easily raised from seed is very generally overlooked. If the seed is sown early in the year and the plants shifted on as required, by midsummer many of them will be good thriving specimens in pots 6 inches in diameter. Then during the latter half of the summer they will flower freely and continue till autumn is well advanced. It may be said that with the many varieties we have there is no need to increase the Fuchsia by raising seedlings, but when a batch is obtained in this way it is always very interesting to watch the development of the young plants. There is a great tendency in seedlings to run up tall, but when cuttings are taken from them and struck, the plants so obtained are usually of a dwarfer and more free-branching habit. Some of these seedling Fuchsias are from their vigour first-rate subjects for the pillars of a conservatory or for similar positions.—H.

Hardy plants and shrubs by the sea.—As I am removing in the autumn to a neighbourhood where the soil is a light sandy peat, near the sea, will you kindly inform me in your paper (Gardening Illustrated) what kind of shrubs and herbaceous plants are likely to thrive?—J. H. T.

*** There is a great variety both amongst herbaceous plants and hardy trees and shrubs suitable for planting in sandy soil near the sea. Any of the following can be recommended. Amongst herbaceous plants the Helianthus or Perennial Sunflowers are very fine. There is scarcely a position in which these plants refuse to grow. When established they are very effective, forming rich masses of golden-yellow blossoms during the summer and early autumn. Saponaria officinalis is another free-growing and free-flowering plant. Gaillardias are also very accommodating, and well deserving of wider recognition as dry soil plants. Their flowering season is a fairly long one, as it commences in June and frequently continues until September. Statice latifolia (Great Sea Lavender) is a decorative plant of great value. Its immense heads of small lavender-blue flowers are useful for cutting for winter decoration. Veronica longifolia subsessilis bears long spikes of deep blue flowers in great abundance. Asters (Michaelmas Daisies) furnish a class of plants which are very difficult to beat for autumn blooming. Their simple cultural requirements and the fact that they flower at a season when flowers in the open air are on the wane, are recommendations of no mean order. Tradescantia virginica (the Spiderwort) thrives everywhere; no soil or position seems to be too bad for it. The same remark also applies to Lychnis chalcedonica with its great heads of rich scarlet flowers. Plumbago Larpentæ produces terminal clusters of intense blue flowers in the late autumn. It is of dwarf, free-flowering habit, and well worth a place in a collection of plants for dry soils. Alyssums must not be overlooked. Irises, Eryngiums, Carnations, Aquilegias, Sedum spectabile, Achillea Ptarmica, Funkias, and Pulmonarias do splendidly on dry soils. Epilobium angustifolium and Eupatorium cannabinum must not be omitted. Of shrubs, the undermentioned will be found to answer well: Euonymus of sorts, Ulex europæa fl.-pl. (double Gorse). We have seen this flowering profusely in scarcely anything else but pure sand. Olearia Haasti is another shrub of the first order. Its clusters of small white flowers are borne very liberally. Laurustinus (Viburnum Tinus) is another easily-managed shrub, and well adapted for your purpose. Veronica Traversi is a very free-flowering and handsome shrub, thriving well in dry soil. Tamarix of sorts grow famously near the sea. Ligustrums, Weigelas, Elæagnuses, Brooms, Cornus (Dogwood), Lilacs, Spiræas, Helianthemums, Genistas, and Flowering Currants are also well worth planting on dry soils.

Lilium concolor.—A dainty species from China of rather frail growth, the slender stems rising to little more than 12 inches high, and terminated by rather small flowers of a fiery scarlet hue. The species is best grown in pots in a freely drained mixture consisting of peat, loam, sand, and charcoal in equal parts. It needs comparatively little moisture at the root save for about two months in summer.

FERNS.

THE LARGER MAIDEN-HAIR FERNS.

There are several noble species of Maiden-hair Fern rarely seen in cultivation, yet worthy of the best attention. Adiantum princeps (see illustration) is indeed a fine species, and one easily grown into a fine specimen if given proper treatment in a warm greenhouse or stove. The illustration shows a plant of A. princeps growing in a broad pan, about 6 inches deep, and this luxuriant mass of graceful fronds represents the growth of three months only, as the plant was cut down to the soil last winter, whilst the photo was taken during the month of June. The illustration fails to do full justice to this fine piece, as the fronds, drooping admirably, hide the pan the plant is growing in. If the fronds are lifted up into a horizontal position the plant has a diameter of just upon 6 feet. A. princeps is a native of New Grenada. Those who like good collections of fine plants in their glass-houses should certainly include this species, while a few other noble Maiden-hairs include A. Farleyense—certainly queen of the family; A. aneitense, A. digitatum, A. formosum, A. peruvianum, A. trapeziforme, A. Veitchianum, and A. velutinum. A.

Adiantum princeps.

THE KITCHEN GARDEN.

NOTES ON CELERY.

The earliest Celery will now be forward enough for earthing, and no delay must be allowed after this date if properly blanched hearts are wanted for salad early in September. There is always more or less danger of early Celery becoming pipy or bolting, but the tendency to both may be considerably reduced by seeing that the trenches are thoroughly well soaked before soil is placed to the plants; too much water cannot well be given, but it is easy to give too little. Celery is a moisture-loving plant, and when we consider that for six weeks at the very least the plants are finishing their growth under circumstances that practically place them beyond the reach of water, we can readily see how important it is to supply them fully while yet we may do so. Before applying soil, each plant should have a strip of matting tied round near the top; this will keep the leaves in position and prevent the soil from running into the hearts, and is preferable to having the plants held together by the hand. Remove all incipient sucker-like growths that may be in evidence at the base of each plant, and break down finely from the ridges sufficient soil to enclose the plants high enough to bury whatever heart they may have developed; more than this should not be done at any time while growth is progressing, as the plants are easily crippled by a heavy weight of soil being placed round them too soon. In cases where blanched growth is urgently needed and the plants have not made the desired progress, or become sufficiently advanced to bear much soil round them, blanching may be assisted without crippling the growth by enclosing each plant in a strip of brown paper, tying this into position, but not too tightly. I only recommend this, however, in special cases, and should not think of serving the main crop in the same way unless worms and slugs are known to be very troublesome, as, to my thinking, no Celery is so sweet as that blanched in direct contact with the soil. Should there be any doubt as to the plants not having had enough water to carry them through, small drain-pipes may be inserted here and there along the row in an almost upright position and with the lower ends at a level with the roots. Through these water may be given in a fairly satisfactory manner, provided the pipes are close enough together, but I depend almost wholly on giving a thorough soaking immediately before earthing. Finally, it is best only to earth up enough at one time to keep the supply good for a week or ten days, and to follow up the work at such intervals rather than to do a large quantity at once, as feeding may go on in the meanwhile with that left undone. A little soil, say about 2 inches, may be run in round the base of the earliest main-crop plants, as this will encourage root action and give the leaf growth an upright tendency, which is desirable. Keep the soil out of the plants, but pack it well up to them, as this will hold the leaves in position. Water frequently and copiously. J.

Alderman Pea.—This is a 5-feet variety, having remarkably fine green pods that fill well. It is for exhibition one of the very best. I do not know who raised it. Mr. Ward, one of the honoured allotment holders, has grown it into very fine form this season. He believes in thin sowing, for having prepared his ground by deep earthing, he dibbled in 100 seeds of the Pea into a row 25 feet long, the seed being thus 3 inches apart. The result was, when in full bearing, a splendid row, the pods hanging as thickly as possible, being borne generally in pairs. As a rule, growers of Peas sow too thickly. Had this man sown at the usual rate the plants would have been four times as thick, but by thin sowing evenly, and by watering liberally, also pinching the points out when a good crop was set, the result was a splendid crop of fine pods, and this variety, with others similarly treated, earned Mr. Ward a cultural commendation from the Royal Horticultural Society.—D.

OUTDOOR PLANTS.

HARDY FLOWERS IN COTTAGE GARDENS.

Having regard to the variety found amongst hardy flowers, which once planted literally grow of themselves in gardens, I have been frequently surprised in looking over cottage flower gardens in noticing the extreme paucity of these hardy things, or if any be seen, they are commonly very inferior. In many localities it is the rule for the executive of cottage garden societies to offer prizes for flower gardens as well as for vegetable gardens, and it is made a specially prominent feature in the awards that not only shall flowers generally be well represented, but also that the gardens be so placed that the passing public may enjoy their beauty as well as the owners. The judging ordinarily takes place either in July or August, but the greater portion is done in the former month. Being desirous of extending hardy plant culture in such gardens, so as to ensure a good display from them as well also from annuals and tender flowers in July, I recently visited Messrs. Barr and Sons' nursery at Long Ditton, where opportunity is offered to see almost everything of its kind in bloom in due season. Beyond having these hardy plants in bloom at the time desired, I also thought of their value in the furnishing of cut flowers in neat bunches at the local shows, where, as a rule, they are too seldom seen, and in making a selection was influenced in favour of plants that furnished good bunching flowers. Of these few are of richer colour or more effective growing or cut than is the old Lychnis chalcedonica, especially when well grown. Then of the bold white Giant Daisies undoubtedly the best is Chrysanthemum maximum filiferum, as the slit petals give to the flowers an airy elegance lacking in others. Of single yellow flowers, produced in wondrous freedom, the stems being rather tough or woody, a charming thing is Anthemis Canary Bird; this is one of the very best yellows found amongst hardy plants. A very diverse and pale yellow flower is Œnothera Youngi, growing to a height of about 2 feet, and furnishing very effective border bunches. Somewhat taller, but very fine and effective when grown in damp or strong soil, is Campanula lactiflora; flowers borne in exceeding profusion on branching stems, and are of a pretty pale mauve colour. A fine white, again, is the well-known Achillea ptarmica Snowball, or The Pearl, and gives capital cutting material. Perennial Gaillardias in variety may be got readily from seed, but the best forms should be obtained from propagated plants. Very fine is Alstrœmeria aurantiaca, certainly a noble border flower; and the well-known Goat's-rue or Vetch, Galega officinalis compacta, both blue and white, are excellent. The red form of Achillea Millefolium makes a capital bunch, and a specially effective cluster is furnished by the well-known Monkshood Aconitum bicolor. The flesh-white Œnothera speciosa is a beautiful border plant, and not least pleasing are the Everlasting Peas, the prettiest of which is the pink variety, delicata.

A. D.

SWEET PEAS.

Few flowers of the garden are more deservedly popular than Sweet Peas, which just now are in full beauty. It is not surprising that a flower so ready to lend itself to varied conditions of culture should receive wide attention at the hands of hybridisers, and the result is that we have now a large number of varieties, each with a distinct name, and differing in variety and delicacy of colour.

The culture is so simple that it is hardly necessary to dwell upon it. In small gardens it is particularly attractive and useful, as when grown in rows it serves the double purpose of providing flowers and hiding unsightly objects that are generally to be found in small gardens. A fairly fertile soil, enriched with well-decayed manure, is all that is required to insure success, if the seeds are sown thinly and the young plants protected against the devastations of snails by dustings of soot or lime. To obtain early flowers it is a good plan to sow the seeds in small pots, placing about half-a-dozen in each early in March, and start them in the greenhouse,

gradually hardening before transplanting to their permanent quarters in the garden.

Some will, perhaps, say that rows of Sweet Peas are stiff and formal, and where this method is not required for any particular purpose other ways of cultivation may be adopted with advantage. One of these is dotting them about the borders in clumps, placing neat sticks round to keep them in position. Recently I saw Sweet Peas grown in this manner between pyramid Pear-trees, which occupied positions on the borders on either side of a kitchen garden walk. Each clump was of a distinct variety, which made them all the more interesting, owing to the diversity in character.

For supplying cut-flowers we have few flowers superior to the Sweet Pea, and where the garden is small nothing could be more useful to provide a few fresh blooms every morning.

It would be impossible in a limited space to enumerate the many distinct varieties of Sweet Peas now in cultivation, and, like all other flowers subject to hybridisation, the list annually lengthens. Anyone wishing to grow distinct varieties can obtain a choice selection from any nurseryman who makes them a speciality, and almost every tint of colour is now represented.

Mixed border with Starworts, at Bemerton Rectory, Salisbury. From a photograph by Mr. S. Griffin, Salisbury.

For decorations Sweet Peas are extremely useful, and the effect got from them is charming when judiciously employed. Unfortunately, one often sees them crammed into vases, and the effect is entirely spoiled. The proper way of making the most of the flowers is well displayed by the well-known raiser, Mr. H. Eckford, in the manner in which he stages them in wide-necked glasses. The blooms exhibited by Mr. Eckford at the last meeting of the Royal Horticultural Society were delightful. H. H.

Dry weather and crops.—There is no point in relation to garden culture that it seems constantly to have to exalt than is the important one relating to deep winter cultivation of the soil. It belongs to the category of "old stories" so often ridiculed by the thoughtless that have to be perpetually repeated and retold. Anyone who has seen in hundreds of gardens, as I have of late, the surprising difference of appearance found in crops grown in shallow and in deep-worked soils cannot help preaching to the unlearned the exceeding value of winter trenching. In relation to Potatoes, for instance, in the shallow-worked soil already the tops are flat on the ground and fast turning yellow. Should rain come soon it may do them more harm than good. Where the soil has been deeply worked the Potato breadths are still fresh and vigorous and making good tuber growths; their condition is in marked contrast to the other dried-up breadths. The same remark applies to all other crops. The one soil, especially under summer-heat and drought, literally starves the produce, whilst the other keeps it firm and luxuriant. Peas and Beans, deep-rooting products, show the difference in a striking degree. In good private gardens it is so much the rule to break up the soil deeply every three or four years that crops in these seldom suffer appreciably; it is, unfortunately, very difficult to induce small gardeners to adopt such rule. The present season, which has in many parts of the country so much dried up the soil, furnishes ample evidence of the benefit of deep workings, or the reverse where it is neglected.—A. D.

THE STARWORTS.

Very soon the earlier Starworts (Perennial Asters) will open their flowers, and then through the autumn the well-planted garden will show how much is lost by not freely using this delightful race. The illustration shows their freedom and beauty when planted boldly, each shoot clothed with blossom, and if a good selection be planted, there is a rich variety of colours from white through rose, lavender, and softer mauve to deepest purple. As the subject was dealt with at length in Gardening, July 10th, we need not further refer to it.

Hardy plants for dry weather.—Will you kindly tell me what herbaceous plants you could recommend me to grow that would stand drought well in the end of July, August, September, and October, in Devon? I find that just after Poppies and so forth are over there is very little bloom left in the garden, and the Herbaceous Phloxes suffer so in heat—the garden lying facing south and east—that often they do not bloom at all in dry seasons. So I should be thankful for any suggestions you could give me. I grow Carnations.—Dolly.

*** "Dolly" will find some of the following flowers useful for giving colour to her herbaceous border during the late summer and autumn: Coreopsis grandiflora, Chelone barbata, Campanula turbinata, and the Platycodon grandiflora and P. Mariesi, Gaillardia grandiflora, the White Galega, Rudbeckia Newmani, Scabiosa caucasica, and Plumbago Larpentæ, though, perhaps, the latter is better suited to the rockery. The foregoing will, in Devon, mostly be in bloom at the end of July, and many will remain in flower during August, when the White Japanese Anemone Honorine Jobert will commence to flower; and the Perennial Sunflowers—of which Helianthus lætiflorus and H. rigidus Miss Mellish are among the best—will be brilliant with bloom. Kniphofias, better known as Tritomas, the vivid vermilion Lobelia cardinalis, and the bright pink L. rosea are also telling subjects at this time, while the Cactus Dahlias, Tall Evening Primroses (Œnothera Lamarckiana), and Chrysanthemum maximum show up well in large clumps, and the beautiful Gypsophila paniculata and Statice latifolia, though not particularly showy from a distance, are exceedingly ornamental when viewed near at hand. In September the Sunflowers still continue their reign, and the Michaelmas Daisies are at their best, Aster amellus bessarabicus, with large lilac-blue flowers, being one of the most decorative; other good kinds are Harpur-Crewe, white; Archer Hind, purple-blue; Pluto, dark lavender; Niveus, white; Robert Parker, tall, lavender; ericoides, a charming little plant with small white Daisy-like flowers; cordifolius elegans, light lavender; and puniceus pulcherrimus, a handsome and profusely-flowering variety with nearly white blossoms. Pyrethrum uliginosum, with its elegant white stars, is a striking plant, and in a hot border in Devonshire the Belladonna Lilies would doubtless succeed, though they grow best when backed by a wall. Two other plants that are such late bloomers as to be often cut by the frost in the colder counties before expanding their blooms are the purple Stokesia cyanea and the large-blossomed Starwort (Aster grandiflorus), whose bright purple, golden-centred flowers are exceedingly handsome. Colour is also present in October in the bright orange-red calyces of the Winter Cherry (Physalis Alkekengi) and the fragrant Iris stylosa. The Winter Flag (Schizostylis coccinea), as well as the Giant Christmas Rose (Helleborus altifolius), all commence to flower in that month. Of the earlier Chrysanthemums there might also be a good show. Naturally in a very dry and sunny border, during a rainless summer, a good many of the foregoing plants will show signs of flagging unless well watered at intervals, especially if the soil is permeated with tree-roots, which are great robbers of moisture and of nutritive elements.

Galega officinalis alba.—An excellent free-flowering border perennial that is capable of enduring a good deal of drought with impunity. Some capital specimens of it and also the type with lilac-blue flowers have been flowering for some time with the greatest freedom. The white kind is specially suited for cutting, as it provides foliage almost equal to Fern and quite as graceful and elegant. Both kinds should be grown where large supplies of cut flowers are required, as they keep up a profusion of blossoms for a long period.—T.

Pratia angulata.—This plant in moist peaty soil is now a mass of its pretty pure white blossoms, forming, as it were, a perfect carpet of bloom. The whole plant is not more than an inch or so high, and might well carpet the ground where moisture-loving Lilies and the like are grown, or, again, as the groundwork for some of the hardy Orchids that flower at this time.

The large white Bellflower (Campanula persicifolia alba grandiflora) is one of the noblest kinds in the family, the flowers being large, of the purest white, and borne on rather tall, slender stems. We like groups of this Bellflower in the flower garden in July. One can see this big-flowered Campanula at a distance and enjoy it better than if associated with anything else.

TREES AND SHRUBS.

Araucaria bearing cones (*John Bailey*).—Good-sized trees of Araucarias occasionally bear cones in this country. I remember seeing some very fine examples from home-grown trees at the Conifer Conference held in the Chiswick Gardens some six or seven years ago. You need not cut them off, as they will not harm the tree. If they come to perfection, sow the seed as soon after it is gathered as possible, for if put away on shelves it becomes dry and loses its vegetative power.—H.

Pyracantha not flowering (*Nomeris*).—It is not very often that this beautiful berry-bearing plant refuses to flower and set its fruit freely. We have seen specimens thriving luxuriantly in many positions, and in some cases under most trying conditions. It is not at all particular about the quality or the drainage of the soil so long as the position is open and sunny. Like other plants of a similar nature, it cannot be expected to bear first-rate crops of flowers and fruits unless the wood is thoroughly ripened yearly. Thin out the very weak growths, and thus give the stronger shoots a chance of ripening.

BEES.

Starting an apiary (*G. Bailey*).—The best way to commence Bee-keeping is to purchase stocks in the autumn or early spring, or swarms in May if possible. The beginner should not, however, attempt to start on a large scale, but commence with one or two hives, and as knowledge and experience are gained increase numbers by purchase or by encouraging swarming, for besides a knowledge of the first principles of apiculture, much energy, perseverance, and aptness for investigation are necessary in order to become a proficient Bee-master. Practical notes on the management of Bees are frequently appearing in GARDENING, and these would prove helpful to you, as they treat upon the work necessary in the apiary at the time at which they appear. You would obtain much valuable information upon the management of Bees in movable comb hives from Mr. Cowan's "Bee-keeper's Guide Book" (1s. 6d.), published by Houlston and Sons, Paternoster-square. A more elaborate work is "Bees and Bee-keeping," in two vols. (16s.), L. Upcott Gill, 170, Strand, London, W.C., who also publishes a practical little manual especially written for beginners, called the "Book of Bee-keeping" (1s.).—S. S. G.

Tortoise for garden (*Constant Reader*).—Either of the species of small land Tortoise would answer your purpose. The land Tortoises are hibernating in their habits, and pass a portion of the year in a state of lethargy; having dug a hole in the ground for their reception they retire from view during November, coming forth again in April. When the Tortoise first appears it shews very little inclination towards food, but grows voracious towards the height of summer. It will obtain its own living in a garden, being fond of milky plants, such as Lettuce, Dandelion, and Sowthistles. Fresh-water Tortoises can be distinguished from land Tortoises by their flattened form, while the toes are thoroughly developed, terminated by long nails, and united by intervening webs enabling them to swim with great facility. Land Tortoises can usually be obtained at the shops of bird-dealers.—G. S. S.

Chester Horticultural Fete.—The programme of the second annual Chester Horticultural Show and Fête is now complete, and details will be found in our advertising columns. The exhibition is fixed for Wednesday and Thursday, the 28th and 29th inst. Some idea of the comprehensive nature of the prize list may be formed from the fact that the substantial sum of over £500 is devoted to the awards, and keen competition is anticipated from noted exhibitors all over the country in flowers, plants, fruits, honey, etc. Those who wish to avail themselves of the special terms for the tickets conceded to early purchasers should communicate with the secretary, Mr. F. A. Walker-Jones, Grosvenor Chambers, 6, Newgate-street, Chester.

GARDEN WORK.*

Conservatory.

Winter-flowering Salvias and Eupatoriums, planted out or in pots, should be pinched occasionally to make the plants bushy and dwarf. Those planted out should be mulched and the roots kept moist. Genistas are better plunged during hot weather, as the roots thereby are kept in a more equable condition, and the plants keep their colour better. Roses in pots for forcing also should be plunged outside. Any repotting and pruning required can be done when the plants are lifted early in October. Tuberous Begonias should be watered carefully. Very often in hot weather either too much or too little water is given, and the plants suffer from excess or from dryness. When the flowering is over place the plants outside to ripen growth. Seedlings raised in heat early in February will bloom freely in 5-inch pots. Save seeds from best varieties only. The seed-bearing plants should be placed together and fertilised artificially with a camel's-hair pencil to obtain new varieties. Double Primulas are useful in winter. Young, well-rooted plants will now be ready for 5-inch pots, and should be grown in a cool frame, lightly shaded. The watering should have careful attention. They will grow well in equal parts best loam, and peat, and leaf-mould, with an eighth part of sharp sand. The same compost will do for Cyclamens. Old bulbs or corms of the latter may have a small quantity of artificial manure mixed with the compost, not exceeding a pound to the bushel of compost. If not already done sow Calceolarias in cool, shady position in frame. Mignonette for autumn bloom should also be sown now in 5-inch or 6-inch pots. The loam should be of the best quality for Mignonette, and enriched to the extent of one third with old cow-manure, mixed with a little leaf-mould. A little bone-meal and old plaster broken up will also be useful. Ram the soil firmly into the pots. Stand the pots in a cold-frame and shade lightly till the seeds germinate, then expose. Five plants in a pot will be ample. Machet is a good variety, but it must be true. Rearrange the conservatory as often as possible; it makes the house more interesting and enables the cultivator to show his best plants prominently.

Stove.

A crowded house now will result in serious injury to many of the best flowering and foliage plants. Where possible, Crotons and Dracænas should be moved to a separate house, where less shade is used, to get the foliage well coloured. Shift on young plants for table and room decoration. For the most these must be in comparatively small pots, 5-inch or 6-inch pots being the size limit for table decoration. Suckers may be taken off Pandanus Veitchi with some roots attached, and potted now. Five-inch pots will be useful during the autumn and winter. Well furnished plants of Adiantum elegans or A. Farleyense are always useful in small and moderate-sized pots. These are two of the most elegant Ferns for table decoration. Where Dracænas are used for table decoration it is an advantage to have a few seedling Maidenhairs placed on the surface of the soil over the roots. They form a pleasing contrast to the bright foliage of Dracænas or Crotons, and look much better than the common Moss usually employed. We have discontinued fires for the present, and the water has been run out of the heating apparatus and again refilled, ready for use if the weather comes cold and wet. With no fires less water is required in the atmosphere, and a light shade during the hottest part of the day renders the stove a very pleasant house. Allamandas will now be flowering freely if the growth was made in a light position.

Vineries.

Unless the management is on the right lines red-spider will be present in vineries and Peach-houses. Strong, hard, robust leaves form the best antidote to red-spider, and good foliage is always, or nearly always, present on well-managed Vines. It means, of course, that the roots are well nourished near the surface, that the ventilation has been carefully seen to, and that fire heat has been used when necessary. At the time of writing the days are bright and hot, and fires may be let out altogether till the weather changes: but in our variable climate it is never wise to lose touch altogether of the heating power. Do with as little as possible, but in damp, cold weather it is well to have the means of using a little artificial heat in vineries. From this onwards Peaches will do without. When the red-spider attacks Vines when the Grapes are colouring it is more difficult to deal with, because the syringe cannot be used, and to sponge all the Vine leaves in a large house takes time, and there is the chance of the berries being damaged by rubbing. The aim of the Grape grower should be to place his berries on the table with the bloom still intact. Red-spider dislikes the fumes of sulphur, and in houses subject to this insect in the winter cleaning operations the walls should be washed over with lime and sulphur, and the rods should be dressed with Gishurst Compound, to which more sulphur has been added, and enough clay mixed with it to make it adhere. Ripening Grapes must have a genial atmosphere always, and enough night ventilation to keep them in motion.

The Second Crop of Figs

is usually a good one under glass. Rich top-dressings will be necessary to enable trees, especially if in pots, to carry the crop to perfection. The syringe must be used freely till the fruit begins to ripen, and then a drier atmosphere must be maintained, as Figs soon go wrong in a stuffy atmosphere. For travelling Figs should be gathered a little before they are ripe. They travel well in shallow boxes containing one layer of fruit packed in Vine leaves, a layer of wadding at bottom, and another at the top. Paper shavings are best for packing Peaches, and wood wool is next to paper shavings for cheapness and preventing damage to the fruit.

Chrysanthemums.

Now that the pots are getting full of roots weak stimulants may be given to those plants which need help twice a week. Weak soot-water will be useful, varied occasionally with guano or some other stimulant. Earwigs must be hunted for persistently, side shoots removed promptly, and the shoots securely tied to the supports. Use the hose or syringe every afternoon.

Window Gardening.

It is no use giving manure to weakly, badly-rooted plants, but flowering plants, or those approaching the flowering stage, will be benefited by the use of one of the chemical manures occasionally mixed with water at the rate of ½ oz. to the gallon. Sponge the leaves of Palms and Aspidistras once a week, and if any plant requires a larger pot the repotting should be done now. Cuttings of most things will root now in a shady place.

Outdoor Garden.

At the time of writing many flowering plants are suffering from drought. Sweet Peas especially are dropping their flowers and producing many seed-pods. If the pods are picked off, and the plants mulched and soaked with water, there will soon be plenty of flowers again. The White Everlasting Pea is with us very useful. I wonder someone with leisure does not try to get more variety of colour in this family. Some of the new Sweet Peas are very beautiful; but the number of so-called varieties has now become too large. This fate seems to overtake all flowers when they become popular. Among the flowers which are standing drought well are the Annual Chrysanthemums, especially the tricolor section. Roses should be liberally dealt with now in the matter of nourishment to induce an abundant autumn bloom. Summer-flowering Chrysanthemums must have mulch and water in dry situations, or the leaves will die. Plants on rockery must be watered if the weather keeps dry. A mulch of leaf-mould, or Cocoa-nut-fibre, will save watering and benefit the plants much. Carnations and Picotees are in good condition for layering now. The dry weather has ripened the wood a little, and such "grass" will root better than when very soft. Beds of "Geraniums" are very bright. So, also, are Petunias, but the season up to the present has been too dry for Begonias, unless mulched and watered. Keep down weeds on walks by using weed-killers.

Fruit Garden.

The most important work just now in the hardy fruit department is to pot the Strawberries for forcing, and plant the new beds to replace those which are worn out; but it is a mistake to keep plantations of Strawberries till they are worn out. On most soils three years is about the limit; after that the fruit gets small, and the fruiting capacity of the plants unreliable. In selecting the sorts, either for forcing or to plant outside, do not be in a hurry to discard old, well-tried sorts for new. The latter may not do well in the soil. More than any other fruit Strawberries require to be selected to suit the soil. If there is any idea of marketing the produce, plant a good many early varieties, such as Noble and Royal Sovereign, and late sorts, such as British Queen, Waterloo, and Latest of All. There will still be work to do among trained fruit-trees. In no case should leading shoots be shortened. In the case of wall and espalier trees, tack or tie them in. It will be very necessary to mulch and water trees which are carrying a good crop of fruit. It will give size and finish to the fruit without exhausting the tree. Indoors, Peaches are putting on plenty of colour in the bright sunshine, and where the trees are not overloaded the flavour also is fine. I have seen many trees overcropped, or, at least, what I considered overcropped, and a very few years of such work will wear out the trees, even when well supported. If enough manurial nourishment is given to enable the trees to swell off the fruit it ultimately ends in gross growth and canker, or gumming.

Vegetable Garden.

The dry weather will in many places have injured the Pea crop; but where the land has been deeply worked and well manured the Peas are doing well when mulched. It is too late to sow Marrow, or, in fact, any other Peas, with the view of gathering a crop from them; but if there are spare seeds they may be sown up till the end of August outside; after that, in boxes under glass. The young, green tops are very good for flavouring soups, etc. Dwarf Kidney Beans may be sown if there are the means of covering on a frosty night. Canvas or tiffany, supported on sticks, will suffice to keep off the early autumn frosts. The land for seeds to be sown now should be thoroughly moistened. It is useless sowing in the hot, dry soil and watering afterwards. The watering after sowing may be necessary if the drought is prolonged; but usually, if the ground is well moistened before sowing, and the seed-bed shaded afterwards, the young plants come away strongly. It is time all the Winter Greens were planted. Turnips, also, for winter, should be sown if they are expected to attain full size. It is not much use planting Celery after this, except for flavouring; but Celery-plants sown outside and planted out now will come in very useful in spring, because they will not bolt till late in spring. In blanching Celery it is a good plan to start with paper wrapped round the bottom. The blanching can be going on at the same time the trenches are flooded. Earthing up can be done later.

E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 2nd.—Sowed a few more Cabbage-seeds of Ellam's Early and Carter's Heartwell. Sowed Winter Spinach and Tripoli Onions, White and Red. Pulled up spring-sown Onions and spread out to ripen. Shallots and Garlic removed to store, being thoroughly dried. Cut various Herbs for drying. Commenced giving weak stimulants to early-potted Chrysanthemums. Put in a few more cuttings of strong tops to flower in small pots. Shifted spring-struck Hydrangeas into 5-inch pots. Shifted Zonals for winter flowering into 5-inch pots. Some of the strongest have pots a size larger. No further shift will be given.

August 3rd.—Planted Cucumbers in houses to bear in autumn. Sowed Turnips, Lettuce, Endive, Corn Salad, and Radishes. Gathered Alexander Peaches on open wall. This Peach does better outside than under glass. Sowed Red Cabbages, Budded Dwarf Briers. Planted out more Strawberries. Thinned young canes of Raspberries where

too crowded. Thinned Pears on walls; also Apples on Paradise-stocks.

August 4th.—Filled a small frame with choice Pansy cuttings. Also put in cuttings of variegated "Geraniums" of various kinds, including tricolor, in the open air. Shifted winter-flowering plants, such as Poinsettias, Justicias, Begonias, etc, into larger pots. They will remain at present in cool-pit. Sowed Fern spores in pans under glass in subdued light. Earthed up early Celery. Mulched late Peas with manure, and soaked with water.

August 5th.—Cleared away the last of the old Strawberry plantations. Burnt the rubbish on the land, and planted late Broccoli thereon, chiefly Carter's Champion. Put in cuttings of Santolina incana, Euonymus radicans variegatus, and Golden Thyme in frame. Planted Endive and Lettuce. Drew a little earth up to Leeks with the hoe. Planted out Cauliflowers. Earthed up Brussels Sprouts. Took up several kinds of early Potatoes left for seed.

August 6th.—Put in cuttings of Fuchsias. Potted on Primulas of various kinds, including obconica and various doubles; are now in cool, shady frames. Put in leaf cuttings of Gloxinias and variegated Begonias in a cold propagating-frame. Took up all early Potatoes; land wanted for Turnips and other crops. Thinned out the young wood of pyramid Pears and Apples.

August 7th.—Put in cuttings of Ageratums and bedding Pelargoniums—the former in frames, the Pelargoniums outside. Shifted on young Tree Carnations. Layered Picotees, and prepared bed for Pink cuttings which are rooting under hand-lights. Tied Dahlias, Hollyhocks, and other things. Cut dead blooms from Roses, and gave Rose-beds a good soaking of liquid-manure.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1168—**Pelargonium King of Denmark.**—In GARDENING, July 17th, Pelargonium King of Denmark is mentioned. Can you inform me where I can procure a plant or cuttings of it?—E. AUSTIN.

1169—**Snowdrops for New Zealand.**—I wish to send to New Zealand some bulbs of Snowdrops, etc. Will you kindly advise me how to prepare them to render the change of seasons as little hurtful as possible, and also the best manner of packing them?—N. Z.

1170—**Raising the Lyre-flower from seed.**—I have a quantity of seed, saved this summer, from Dielytra spectabilis. Some have been sown in a pot, but show no signs of germination. When should it be sown, and under what conditions?—A. L. S.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1171—**Stephanotis fruiting** (*M. Lewis*).—It is not unusual to see Stephanotis fruiting.

1172—**Cutting leaf tips of Fan Palm** (*Countess*).—Cut off close to the green part of the leaf the dead portions of the Palm Latania.

1173—**Fir-tree oil** (*Countess*).—Half-pint Fir-tree oil to 4 gallons water will kill green and black-fly. For mealy-bug and scale use ½ pint to 6 quarts water.

1174—**Name of Spinach** (*A. N., Belfast*)—The Spinach is the Giant White Orache or Mountain variety. Generally it seeds freely, and comes up in any odd corner.

1175—**Potatoes sickly** (*T. Cooke*).—The Potatoes are attacked with some form of fungoid growth which you should endeavour to eradicate by burning all such portions.

1176—**Offsets of Auriculas** (*H. Budge*).—Offsets from Auriculas may be put in pots in a frame with success. It is too late to divide and replant those in the border. They would not be established in time.

1177—**Salsafy leaves diseased** (*Ignorance*).—The Salsafy leaves are affected with a fungoid attack, caused by the unfavourable weather. Nothing but rain can improve the crop for this year.

1178—**Rose unsatisfactory** (*J. Eckford*).—Perhaps the frost checked the growth of the Rose. Have the suckers from the stock on which it is growing been allowed to grow and impoverish the Rose?

1179—**Lilium Harrisi after flowering** (*H. Budge*).—Lilium Harrisi does not flower successfully as a rule in pots a second season. You might plant them in the open border and obtain fresh bulbs for pots.

1180—**Climbers for verandah** (*Verandah*).—Clematis Jackmani and C. Flammula, Roses Gloire de Dijon and Félicité Perpetue, Garrya elliptica, Honeysuckles, the winter-flowering Jasminum nudiflorum, would suit your purpose.

1181—**White "Geranium"** (*Ignorance*).—The white "Geranium" is a sport originally from a Zonal variety. The appearance of the green leaf on the plant is simply a reversion to its former self, not an uncommon occurrence.

1182—**Small fruit** (*Mrs. R. B.*).—The severe frost experienced during the spring is, no doubt, the cause of your having a scarcity of bush or small fruit, especially if the garden is situated low. Many gardens this year are in a similar plight.

1183—**Carnation-buds "blind"** (*M. K. P.*).—In the absence of specimens we cannot say if the buds will still expand properly; but, as the plants are healthy, we should say they would, as it is so unusual for Carnations, when healthy, to fail.

1184—**Strawberries not fruiting** (*J. M.*).—The frost experienced in the spring while the plants were in bloom no doubt is the cause of failure in fruiting this year. If as you say the plants were from a good stock they should do well another season.

1185—**Cordon Plum-tree leaves curled** (*J. U. D.*).—Have the leaves been infested with black or green-fly? The results warrant this suggestion. Soak such shoots in a strong decoction of Tobacco-water and soft-soap to kill any insects.

1186—**Grapes ripening** (*Vine*),—When Grapes are colouring they need abundance of air both top and bottom of the house to insure their ripening well. Are the roots in the outside border dry? If so, the changing in colour of the leaves would be accounted for.

1187—**Madonna Lily flower-buds dead** (*J. Eckford*).—The bloom-buds of Madonna Lily show the regular disease which this plant suffers from, which is difficult to account for. Nothing but replanting directly flowering is past seems to do any good.

1188—**Soil to pot Cyclamens in** (*E. J. N.*)—A compost of two parts fibrous loam, one leaf-mould, half a part of dried cow-dung, and sufficient coarse white sand to make the whole porous should grow good Cyclamens if all other cultural details are of the right kind.

1189—**Laying down lawn** (*M. Lewis*).—If the lawn is required for immediate use it must be made with turf. October and November are the best months for laying it. If turf is difficult to obtain, and the lawn is not required for a year, seed sown in April would grow into good turf.

1190—**Black deposit on Myrtle** (*Mercy*).—The leaves are covered with the excrement from aphides and mealy-bug. Thoroughly wash the plants with soft-soap-water, dissolving ¼ lb. soft-soap in 6 gallons tepid water. Vigorously syringe the plants with it every other day until they are clean.

1191—**Diseased Tomatoes** (*A. G. B.*).—The Tomato fruit is attacked by Cladosporium Lycopersicum, commonly known as black spot. The plants should be kept in perfect health, freely helped with stimulative food. Keep the house rather on the dry side atmospherically, and remove all affected fruits—burning them.

1192—**Diplacus glutinosus cuttings unhealthy** (*H. Budge*).—Young plants of Diplacus do not often die in the way you name if the treatment has been correct, although irregularity in applying water to the roots will quickly make the leaves turn quite yellow, and so will a persistent use of chalk water.

1193—**Culture of Pampas Grass** (*A. G. H.*).—Trench and well manure the soil and supply water freely during dry weather are all the cultural details necessary to grow Pampas Grass. The middle of March is a good time to plant. Three years ago many plants were so crippled by frost that they have hardly yet recovered.

1194—**Black Hamburgh Grapes unsatisfactory** (*C. T. Pasmore*).—The berries marked No. 1 show distinct traces of being scalded by the sun when the Vines were dry at the roots. Have you kept them well supplied with water? No. 2 are "shanked," caused either by overcropping or drought at the roots. Examine the soil 18 inches deep. If dry, give a thorough soaking with clear water.

1195—**Insects on Cucumber leaves** (*Amateur*).—Fumigate the Cucumber-house on three successive nights with Tobacco-smoke, thoroughly syringing the plants next morning after fumigating. Be sure the leaves are thoroughly dry each night before fumigating. Cut away all useless leaves and encourage the plants to make new growth.

1196—**Vine-leaves unsatisfactory** (*M. C.*).—The Vine-leaves are infested with thrips, a pest common enough in vineries where plants are also grown that are addicted to this insect. Azaleas and some Ferns are the worst of all plants for this insect. Fumigate the vinery on three successive nights with Tobacco-smoke, and remove any plant so infested.

1197—**Sickly Tomatoes** (*Yoric*).—The Tomatoes are affected with the disease Cladosporium Lycopersicum, commonly known as black-spot. This disease attacks all varieties and under any method of culture. Up to the present no remedy has been found to prevent its inception. Burn all affected fruit and keep the plants healthy is the only advice we can give.

1198—**Pear-trees in tubs not fruiting** (*J. U. D.*)—If the tubs are full of healthy roots, as we suspect they are, place the trees in larger ones. If not, remove the loose soil at the top, and replace it with half-decayed turf and horse-manure in equal parts, adding to each two handfuls of bone-meal. Keep the trees well supplied with water. Perhaps the frost caught the Pear-blooms.

1199—**Cauliflowers sickly** (*J. H. C.*).—The plants are infested with Anbury, a disease common to the Brassica family. The infection appears on the stem in the form of a gall or wort, inside of which is a small, white maggot, the larva of a weevil. The plants, when put out, should be closely examined. Any that show signs of being infested should be rejected. This disease is common in some localities, especially where the soil is light. Lime should be freely employed at all seasons of the year, sprinkling it on the surface, as well as digging it in the ground in the spring previous to planting. The plants badly infested now will hardly do much good this year.

1200—**China Asters dying** (*J. G., Oldham*).—The Asters are affected at their base with some fungoid disease which attacks the inner bark, so to speak, penetrating to the roots nearest the stem. It is a disease common to this annual in some districts, and one for which there appears to be no remedy. Dig the ground in the autumn, exposing it to the air, and add lime freely is all you can do.

1201—**Unhealthy leaves on Eucharis** (*M. A. M. C.*).—The disfigured leaves are the result of some defect in culture, such as exposing the plants to too strong sunshine, too much water at the roots, or too little or too low a temperature during the winter, accompanied with stagnation of moisture at the roots, owing, perhaps, to defective drainage. Healthy-growing Eucharis do not require potting for several years.

1202—**Liquid-manure for Dahlias, etc.** (*W. S. Phillips*).—One ounce of sulphate of ammonia to 1 gallon of water, or 2 ounces dissolved bones to 1 gallon water, will make a good stimulant for Dahlias, Zonal "Geraniums," and bedding plants generally. One bushel soot, put in a bag, will suffice for 50 gallons water for three weeks by moving the bag about occasionally in the tub, and adding fresh water as required.

1203—**Apricots** (*Newhaven*).—It is not unusual for some of the branches of an apparently healthy Apricot-tree to die off suddenly. Give the roots abundance of water during dry weather, especially during August and September after the fruit is gathered. Too many persons neglect their fruit-trees entirely directly the fruit is taken from them. If the soil is lacking in lime, add old mortar or lime freely, digging it lightly in on the surface.

1204—**Artificial-manure** (*Nemo, nr. Halifax*).—We do not know the true proportions of ingredients used in the manufacture of patent artificial-manures, but fish is one of the chief ingredients of the guano you inquire about. It is a good manure for all plants, and now that the manufacturers have succeeded in killing the tiny maggot so liable to appear from its use, there are no pot plants it is not suited for, while its effect is lasting.

1205—**Vines unsatisfactory** (*V. S.*).—From the appearance of the berries received we should say the treatment of the Vines is not satisfactory. The berries appear to have been scalded by getting the house too hot and moisture-laden before giving air. The sun, coming out suddenly, scorched the berries. The bunches being the worst at the top of the house points strongly to this being the cause. The house-sewage may contain something too strong for the roots.

1206—**Value of old compost** (*Ignoramus*).—The old compost named would be useful to add to other soil for Pansies, especially if the natural soil is heavy and retentive. We do not advise you to employ this compost alone, even in light sandy soil. Dig the natural soil 18 inches deep, adding half-decayed horse-dung freely. The beds should not be raised, except the soil is heavy and inclined to be wet. Horn-shavings sprinkled over the soil and dug in are beneficial.

1207—**Mauve Tufted Pansies** (*Hutton*).—The mauve Tufted Pansy to which you refer is William Niel. This is described as pale rose or rosy-mauve. It has been in cultivation for some years and is a popular sort for garden decoration. The habit of growth is fairly good, although not so pretty as many of the newer sorts. The constitution is robust, the flowers of medium size and freely produced. This variety may be purchased at from 10s. to 12s. per hundred plants.

1208—**Strawberry runners** (*T. B.*)—Strawberry runners ought to be prepared at once. For pots in the greenhouse lay them in small pots in rich soil in the rows in the open, plunging the pots and keeping them well supplied with water. For open growth fork up the soil under the runner, and fasten it down on the loose soil with a small stone or a peg to make the runner firm, when it will emit roots, and be in good condition for planting. Sir J. Paxton and Royal Sovereign are good sorts.

1209—**Zonal Pelargoniums flowering** (*Devon*).—Some varieties of Zonal Pelargoniums are more addicted to the disfigurement mentioned by "Devon" than others. It is generally thought to be due to an excess of vigour, probably, in "Devon's" case, an outcome of the dressing of guano he mentions. When making strong growth such vigour goes to the formation of wood; but when flowers have commenced to set any excess is customarily expressed through the blossoms, and occasionally in the undesirable manner mentioned by "Devon."—S. W. F.

1210—**Pruning Clematis** (*Abbey*).—The double white Clematis is perhaps one of the lanuginosa or Florida sections—certainly not Jackmani alba, which is single flowered. It would be useless to hazard a name, not seeing the flower. It is difficult to induce growth to push from the base of the plants other than the Jackmani section when once they extend to any height without making side growths. These strong shoots should be pinched early to induce them to make additional shoots. Both of the sections first named require but little pruning.

1211—**Growing Vines** (*A Reader*).—The spur and the long rod method of cultivating Grapes are the principal methods. The former is undoubtedly the best. The latter consists in growing canes to the top of the house every year, and fruiting them the next: then cut them out, in the meantime laying in another rod to take the place of the one annually removed. The spur system of growing Grapes is that best to follow. The rods should be 3 feet apart, and the spurs 1 foot apart on each side, or as near that measurement as possible. Varieties of Grapes like Black Hamburgh should have a clear space of 15 inches at least from the leaves to the glass—stronger-growing sorts, 17 inches.

1212—**Antirrhinums withering away** (*Devon*).—Antirrhinums often perish in the winter, even if it be a very mild one. Last winter the excessive damp experienced perhaps increased the mortality. Plants moved in the autumn are naturally less able to stand vicissitudes of temperature and atmospheric conditions than those that have grown from seeds in the same spot, which often

pull through unharmed, when shifted plants perish. "Devon" need not think himself particularly unfortunate in losing his Antirrhinums, as from his own showing he has preserved a certain amount, which have been fine. I know Devonshire gardens where all the Antirrhinums in the open perished during the last winter. Good strains of Antirrhinums should always be propagated by autumn-struck cuttings, which should be wintered in a cold-frame, and form excellent plants by the ensuing summer.—S. W. F.

1213—**Treatment of Clematises** (*Caldwell*).—Please send us a few flowers. Clematises vary so much, and each section needs special pruning.

1214—**Watering Begonias** (*M. E. W.*).—Begonias certainly enjoy a good watering where the compost is of a dry nature; but you can overdo it. Give a thorough soaking once a fortnight, unless a good shower intervenes.

1215—**Peat-Moss-litter for Roses** (*M. E. W.*).—Yes; peat-Moss-litter, when used for bedding down stock or horses, makes an excellent mulch for Roses. It is short, easily worked among the plants, and retains far more of the moisture and ammonia than straw or other litter.

1216—**Cucumbers bitter** (*W. D. Amateur*).—We cannot give you any definite reason for this. It often happens that a later batch of fruit, and even several upon the same plant at a time when others are bitter, will be quite free from this taint.

1217—**Destroying Yarrow** (*Yarrow*). — If you remove the crown of the roots of the Yarrow that will be sufficient; but Dandelion and Plantain simply produce more heads, unless thoroughly scooped out. We can add no more to our last notes. When the lawn is allowed to get so bad it is a great trouble.

1218—**Gloire de Dijon Rose, treatment of** (*Caldwell*).—It is quite possible you are overfeeding your Rose, or giving it soapy-water that is far too strong. In moderation, such is useful; but many washing soaps and sodas are far from suitable for Roses. Thin out the worst wood and try to secure more of a healthier character.

1219—**Lilac-trees growing slowly** (*Caldwell*).—If your soil is very light, apply a little stiff manure; if heavy, give stable-dung. It is well to root out a few of the suckers, where very numerous. Far too many Lilacs are grafted upon the common and weedy-growing species, and these frequently fail, throwing out a quantity of suckers, as you describe.

1220—**Asters dying** (*J. Craig*).—You afford us no information of your treatment, so that we can only guess at the cause, and this is probably overhead watering when the sun is hot upon them The specimens sent seem to have commenced decaying or "scalding" in the centre, where moisture was retained longest, and consequently the crowns became more or less parboiled by the sun's rays.

1221—**Spiræa ariæfolia** (*An Amateur*) is the name of the specimen submitted. It belongs to the shrubby section and is readily propagated by cuttings of half-ripened wood, taken off now or any time until the middle or end of September. Cuttings may be of various lengths and inserted in light sandy soil and placed in a close case and kept in a gentle heat for a time. If this is not available, a cold-frame will answer the purpose very well, so long as it is kept quite close and the cuttings protected from the sun until roots have emitted. When rooted, harden off, and in spring plant out in the open ground. This lovely Spiræa delights in a cool, moist soil and exposed position.

1222—**Planting border** (*Crosspatch*).—No doubt the roots of the hedge run across the border, thus extracting all moisture and nourishment from the soil. Trench the border in October deeply and to within 3 feet of the hedge, cutting off all roots met with there. If you go nearer the hedge you may injure that by interfering too much with the roots. As trenching proceeds, add manure freely within one foot of the surface; it is useless burying it deeper. Keep the surface soil still on the top, or you will find some difficulty in getting that from the bottom into a workable condition. Chrysanthemum maximum, Erigeron speciosus superbus, Rudbeckia speciosa, Achillea Ptarmica fl.-pl., Michaelmas Daisies, Chelone barbatum, Campanula persicifolia, Harpalium rigidum, Herbaceous Phloxes, Larkspurs, and Perennial Sunflowers will do well. You will see in replies to other queries other suitable plants, too. Watch for reply to "Double Border."

1223—**Forced Nectarines cracking and shrivelling.**—Why do forced Nectarines crack and shrivel?—E. A. R.

*** *Some varieties of Nectarines have a bad habit of cracking the fruit. Victoria is one of the worst in this respect. Pine-apple not only cracks a little, but shrivels very much if means are not taken to prevent it. Shading the glass from bright sun is the best preventive when the fruit approaches the ripening stage. Abundance of water while the fruit is swelling is also necessary.*

1224—**White Lily stems.**—Should the flower-stalks of Lilium candidum be cut off as soon as out of flower, or left standing?—M. B. H.

*** *Remove the dead blossoms of the Lily and allow the stalks to die down naturally.*

1225—**Solanum (Weatherii's).**—What is the treatment of Solanums (Weatherii's) which are now in boxes out in the open? Will they bloom this winter?—INQUIRER.

*** *You do not say how old, or in what stage your plants are; but we would suggest you pot them up into a light and rich compost, and afford ordinary greenhouse treatment, when they will probably flower during late winter and early spring.*

1226—**Increasing Strawberries.**—I have some Strawberry-plants one year old, and am anxious to increase them. Please tell me which runner I should peg down, or does it matter?—J. NASH.

*** *Vigorous-growing Strawberry-plants usually send out many runners. The strongest runners produce three and sometimes more plants. Any, or all, may be pegged down if you require all you can get. If not, the strongest should be chosen. Fork up the soil, and fasten the runners to it by pegs or stones laid just behind the plants on the runner. Water freely.*

1227—**Destroying wild Convolvulus.**—Would you kindly inform me in your valuable paper how I can destroy the wild Convolvulus which runs wild in my garden? I am continually digging it up, but cannot get rid of it.—VERY MUCH AMATEUR.

*** *There is absolutely no way except by persistent uprooting, and the constant hoeing off of the tops at all times when lifting the roots cannot be practised. It is one of the very worst weeds we have.*

1228—**Damson-trees not bearing.**—How shall I treat Damson-trees which seem to have gone out of bearing for two years? They used to have a fair crop. Ours is a clay soil.—ALLAMANDER.

*** *The absence of fruit is no doubt owing to frost, aggravated, perhaps, by the trees being so badly infested with green-fly, as they were generally last year during the hot and dry weather. Give the trees several soakings with liquid-manure both summer and winter.*

1229—**Tarring Rhubarb-house.**—I have made a Rhubarb-house of what was an open shed. Would gas-tar applied now to preserve boards be injurious to next winter's forcing? The crop would not touch the tarred boards. Boiler and piping are used.—ADAM.

*** *Tar would be injurious.*

1230—**Lily of Valley in tub.**—I have a single plant of Lily of the Valley in a tub. This had a very fine spike of flowers, which have fertilised, and the seed looks at present as if it would ripen. Please say how I should treat the seed? The other occupant of the tub is a Fern (British).—OMEGA PI.

*** *Lily of the Valley from seed is not to be depended upon to give good results in the same way as plants from a good stock. When ripe, sow the seed in sandy soil in a cold-frame or a sunny spot out-of-doors.*

1231—**Best Kidney Potatoes for exhibition.**—What are the best Kidney Potatoes for exhibition first week in July, and the best round ones, the time to sow, and best manure to use?—IGNORAMUS.

*** *Ringleader, Early Puritan, Sutton's Seedling, and Supreme are good varieties of Kidney Potatoes. The best round varieties are Windsor Castle and Triumph. Half-decayed horse-manure, dug in in the autumn, will give satisfaction.*

1232—**Tomatoes.**—I am trying to grow Tomatoes. My plants are 4 feet to 5 feet high, with plenty of blossoms, which have little fruit. The bloom falls off, sometimes leaving an abortive fruit, sometimes nothing, and sometimes breaks off at the stem. I enclose two specimens. I keep the plants well watered, and apply diluted manure (cow-dung) twice a week. There are few or no insects in the cool greenhouse to fertilise. If it is necessary to do this by hand how can I distinguish between the male and female blossoms?—J. A. J.

*** *Cease giving liquid-manure to the plants until quantities of fruit are set, and keep them also rather on the dry side. Then you will have no difficulty in getting the bloom fertilised. Shake the bunches of flower once at mid-day to disperse the pollen. This will aid fertilisation.*

1233—**Calceolarias dying.**—Each year I lose nearly one half of my Calceolarias. They go off by the score—strong, healthy plants full of bloom. I cannot find anything at the roots—in fact, I am convinced the fault is not at the roots, but more in nature of a sunstroke or a disease. I have never had the same thing happen at other places. I wonder have other readers experienced the same trouble? If there is a preventive measure known kindly answer through your paper. The soil, I may add, is inclined to be stiff; but they grow in beds where the soil is light. It would be a great satisfaction to know if it could be prevented.—FISHERMAN'S BASKET.

*** *From time immemorial Calceolarias have been in the habit of dying off suddenly in some gardens. There is no known remedy beyond getting a stock of plants from a garden where they are not diseased. Allowing the roots to become dry in any stage of growth tends to accelerate the disease.*

1234—**Genistas and Paris Daisies.**—I have had both these plants outside in pots for a month or two, and want to know when I ought to cut them back and repot? Your advice will much oblige. The bloom has been over on both some time.—WATCHFUL.

*** *Prune back Genista and Paris Daisy at once down to within 4 inches of the base. Repot when the new shoots are an inch or so long.*

1235—**Gladiolus The Bride.**—I have grown a quantity of Gladiolus The Bride in a cold-house this spring. How shall I treat the plants so as to grow them in the same way for next spring?—H.

*** *Dry off the crowns gradually by withholding water at the roots. When the leaves have died down and the stems turned brown, shake the corms out of the soil. Cut away the stems, and store them in paper bags in a dry room until potting time comes again.*

1236—**Peach stone decaying.**—What is the reason of the stone of the enclosed Peach decaying, the crop of the trees being very light, and the border well watered?—NO NAME.

*** *Owing to the cold winds and frost of mid-March the flowers did not set so well as they should. Following this, we had severe chills during the middle of May, and it is a general complaint that wall fruit is a failure this season. Unkind weather in spring is the sole cause of your disappointment, and most of the fruit will fall.*

1237—**Globe Artichokes poor.**—I shall be obliged if you can give me any reason for my Globe Artichokes being unsatisfactory both this year and last. Last year we put it down to the drought, but that reason does not apply this year. The plants are grown from seed on a clay soil. They grow to a considerable height, 6 feet or 7 feet or more, and there are plenty of Artichokes, and of fair size, but with little on them and very little choke. The Artichokes we found growing in the same garden were very much better, but were killed by the severe winter of three years ago. I enclose two leaves. Ought they to be thinned, or can you give me any reason for their failure?—R. D.

*** *Globe Artichokes should be grown from plants obtained by dividing the roots of a good strain. Plants raised from seed are very rarely of any use. Discard yours and obtain a pure stock.*

1238—**Plants for window-box.** — Would you kindly inform me of the best plants for putting into a window-box at this time of the year?—VIOLET C. CULL.

*** *Zonal and Ivy-leaved Pelargoniums, Nasturtiums, Marguerites, Fuchsias, and Begonias make a very quick show, and would probably please as well as any. You do not say what colours would be preferred, but a variety can be had from either of the above.*

1239—**Stephanotis fruiting.**—I have a plant of Stephanotis that has a fruit upon it. It has not bloomed yet, as it is growing in a house where little heat is used beyond keeping out frost, but we get a great amount of sunshine in the Vale of Evesham. Will you kindly say through your columns if it is a usual thing for this plant to fruit in England? Also, if the fruit is edible? I have been gardening for twenty-five years, but never knew a Streptocarpus to fruit before.—W. J. S.

*** *It is not at all unusual for the Stephanotis to fruit; but your plant cannot have done so without bearing a flower. It is not an edible fruit. Your plant will, we fear, not be very successful without more heat than you mention.*

1240—**Grapes shanking.**—A good many of the berries on my Lady Downes Vines are shanking at the point of colouring. Will you please tell me the reason of this in your paper? Foster's Seedling, Black Hamburgh, and Black Alicante in the same house are all right.—ALEC.

*** *Are the berries shanking or are they scalded? In the former they shrivel at the stalk, in the latter it is the skin of the berries that suffers. The former is due to overcropping, the latter to insufficient ventilation in the morning when the sun strikes the house; the moisture settling on the cold skin of the berries causes them to scald.*

1241—**Salpiglossis dying.**—I lose half my Salpiglossis plants by the ravages of insects or slugs? The leaves turn yellow, marked as by the tracings of the Celery-grub, and droop, the root then withers, but I can find no slugs at work. I shall be very grateful for information and advice on the subject? The soil is light, over gravel, in dry weather gets hard, and requires constant forking.—H. A.

*** *In unsuitable soil like yours Salpiglossis die off prematurely. Very often the cause is wireworm in the stem, which cannot be seen unless closely examined. Sprinkle soot over the surface, fork it in lightly, spread some half rotted horse-dung 2 inches thick on the surface, and give a thorough soaking with clear water.*

1242—**Sulphate of ammonia.**—Is this good for mulching Roses, also Celery, and in what proportion should it be used?—REGULAR SUBSCRIBER.

*** *Sulphate of ammonia is good for any flower or vegetable used sparingly. During dry weather soak the soil with clear water, then sprinkle the sulphate on the surface at the rate of an ounce to a square yard. Give another good soaking with clean water to wash in the ammonia.*

1243—**Rhus succedanea.**—I have a plant of this in a very small pot. Please say what sort of soil it requires, and general treatment? I am trying it as a room plant. We have no gas, and it has exceedingly pretty foliage.—OMEGA PI.

*** *Rhus succedanea is a greenhouse evergreen, commonly known as the Japanese Wax-tree. Give the plant a shift into a 10-inch pot, using sandy soil in which there is some peat. Stand the plant out-of-doors in a sheltered place, yet full in the sun. At no time should the roots be dry, or the leaves will turn yellow. Remove it to the room at the end of September.*

1244—**Treatment of Violets.**—My Violets were not attended to in April, and they are now large and full of foliage. I am in the habit of giving them a shift every year, but it is now so late that I hope you will say what I ought to do? They are grown in the open, and are Czar, Marie Louise, and Neapolitan.—GARRYOWEN.

*** *Cut away some of the plants where especially thick, thus giving more space to those remaining, enabling them to mature their growth better.*

1245—**Violets for winter flowering.**—Will you kindly give me advice about my Violets for winter blooming? They are just beginning to put out side shoots or runners. Should I keep these pinched back, or let them grow, and then pinch them back to three leaves later on, as I want to put them into frame in September? Should I keep them well pinched back till then, and then let them grow on for runners next season? If I have to pull away all runners please tell me how long I have to continue to do so?—G. I.

*** *If the plants have strong crowns pinch off all the runners as fast as they grow to concentrate the whole energy of the plant into the crowns. If they are weak, allow two or three runners to grow from each plant, which will increase the number of blossoms during the winter.*

1246—**Propagating-house.**—I have a propagating-house with a 3-feet 9 bed, heated underneath by three rows of 4-inch pipe. I made a bed of leaves and manure in the early part of the season, placing the same on a trellis, about 3 inches between each cross-piece, and about 6 inches from the pipes, leaving about a foot or more of a bed. Now, even when the pipes were quite hot, nearly at boiling point, scarcely any heat came through after the natural heat of the bed had subsided. I have thought of using tan or Cocoa-nut-fibre, placing it around the pipes, and filling up about from 6 inches to a foot thick; but, again, there is the possibility of it being too dry unless I could keep it sufficiently moist. But, having no experience in tan or fibre, I scarcely know which to use next season. Having about three months' work of propagation when the bed fails, it stops all progress. I should feel glad of an answer in your valuable paper of the most efficient means to make a lasting bed?—PROPAGATING.

*** *If the water circulates regularly and well you ought to have no trouble in getting regular bottom-heat for propagating purposes. Fill up the space about the pipes with broken bricks or stones, packing them as hollow as possible, through which the heat will ascend. Cover the bricks with Cocoa-nut-fibre-refuse, 1 foot thick, increasing it or otherwise as necessity arises regarding the heat. This material is quite good for plunging, as it retains moisture and warmth.*

1247—**Carnation Old Clove.**—I enclose a few Carnation leaves (Old Clove), which although the plants are otherwise healthy have turned dark brown. Can you kindly through your valuable paper tell me the cause and remedy?—CONSERVATOR.

*** *The leaves are infested with the well-known disease common to this variety of Clove. There is no remedy beyond burning all affected leaves directly they appear.*

1248—**Night soil.**—I have some of the above well decayed in loam. What quantity should I apply to a small garden, and is it a valuable manure?—PERPLEXED.

*** *Dig in the night soil and loam for any strong growing vegetable crop like any of the Brassica type. For Roses it is a valuable manure, forking it in about the roots in March. Use about half the quantity you would of farmyard manure.*

1249—**Stem-roots on Vine**—My Vine, which is full of fruit, is this year throwing small roots from nearly every stem, but more especially the older ones. What is the cause of this, and is it harmful to the Vine?—P. B. STORIEN.

*** *Excess of moisture in the atmosphere of the vinery is said to be the cause of air-roots, as they are called, coming from the Vine stems. They do no harm whatever, and should be cut off at pruning time. As the Grapes ripen the roots will shrivel up through lack of moisture.*

1250—**Grapes unsatisfactory.**—Will you explain to me the reason of my Grapes going off the same as those sent? The treatment I have given them is to syringe them about three-thirty in the afternoon, damp down and close up. I grow plants in the same house.—A CONSTANT READER.

*** *Excess of moisture in the atmosphere when the sun strikes upon the house in the morning is the cause of the berries being scalded as those sent are. The Vines ought not to be syringed after the berries are the size of those received. Leave a chink of air on the house all night, and ventilate early in the morning, so as to have the surface of the berries dry before the sun strikes them in the morning. We presume the roots are not suffering for want of water?*

1251—**Vine berries diseased.**—Kindly give me some information on the enclosed Vine berries, as the stalk goes as well as the berries? The border is inside and out, well watered.—ANXIOUS.

*** *There is evidently something very wrong in your treatment. But from the vagueness of your note we can only suggest the plants and young fruit have been baked up by sun during the past hot weather. All houses needed more or less ventilation during such weather. Give us a more definite idea of your treatment.*

1252—**A late Strawberry.**—I should be glad to have the name of a good cropping late Strawberry of as near as possible size and quality of Sir Joseph Paxton to plant on land suiting that variety? Have tried Eleanor and Elton Pine, but they do not answer requirements. I want to grow in quantity for market. Elton Pine grows a mass of foliage; flavour of Eleanor is objected to.—ADAM.

*** *Latest of All is about the best.*

1253—**Pear-tree on a wall.**—I have a Marie Louise Pear-tree in beautiful foliage growing on a wall, aspect east. It has no fruit at all on it, and I am told it never has borne. It is a fine tree, about 14 feet high, and 20 feet broad, and grows on a clay soil. Can you advise any treatment which would cause it to bear fruit. Other trees on the same wall do fairly well.—NEWHAVEN.

*** *If the Pear-tree grows vigorously it requires root-pruning. Say if many shoots are made over 1 foot in length it should be checked in its growth. Dig a trench 4 feet from the stem as deep as you find roots, cutting all you come in contact with. This will check the extra vigour of the tree and produce fruit spurs. Protect the tree from frost when in bloom by tiffany or nets.*

1254—**Araucaria excelsa.**—I read with pleasure the note on Araucaria excelsa. I have had a plant several years (the fine kind), but the leaves drop off at the bottom, and it is getting rather leggy. What sort of soil does it do best in, and what treatment should it have?—OMEGA PI.

*** *Probably your plant is badly drained or has suffered from extremes in watering. Repot into the following compost, removing as much as you can of the old soil—turfy loam, leaf-soil, and peat in equal proportions, adding a little coarse sand and broken charcoal. It must have good drainage.*

1255—**Dracæna sickly.**—I shall be obliged by your telling me the cause of the leaves of a Dracæna being mutilated. I enclose one for your inspection. The variety whose leaf I enclose suffers most, the others not being touched. What can I do to prevent it?—DRACÆNA.

*** *Your leaf appears to have been eaten by one of the many maggots which eat between the cuticle of the leaves; which it is we cannot possibly say. The leaf is also old and decaying from that reason. There was no pest on it. Watch for the pest. Hand-picking is the only remedy.*

1256—**Protecting Pear-trees in bloom.**—Six years ago I planted two Pear-trees (Marie Louise) against the gable of my house (southern aspect). The trees have grown well, and are quite healthy; but the blossom is invariably destroyed by frost. Kindly advise as to the best means of protecting the trees when in blossom? If a lean-to greenhouse is built to include the Pear-trees, what would be the best arrangement in view of the admission of rain to the trees? I presume that rain would, as a general rule, be preferred to artificial watering?—JOHN BURKE.

*** *The most effective preservation of Pear-tree bloom from frost is by covering the trees with scrim canvas, tiffany, or three thicknesses of fish-netting. Run a wire along the top of the wall under the coping; on this the curtain should run by the aid of rings, drawing it to one end in the morning and replacing it at night. Some stout, slanting stakes should be put in to keep the coverings clear of the bloom. It would not be wise to build a greenhouse over the trees.*

1257—**Treatment of border.**—I have a border about 30 yards long and 6 feet wide, which is fully exposed to the sun most of the day. It is backed by a Laurel-hedge, behind which the ground slopes steeply to a road 12 feet to 13 feet below. The soil is very stiff, brownish and bluish clay, the rock cropping up sometimes to a foot or so of the surface. Most of this I have got out and filled in with loamy soil, and have also dug in burnt soil and manure. Most plants seem to grow on the border, but in hot weather the soil becomes so hard and dry it is impossible to work it, and when wet it is equally impossible to work. Would it be a good thing to put a layer of stable-manure made with Moss-litter all over the border, and dig in in the spring, or what would you recommend? Is Moss-litter-manure good for gardening? How long ought turf to be laid up before used for potting purposes, and should it be mixed with anything else? I have a heap of road-scrapings and the cleaning-out of road ditch, mixed with lime in spring. When can I use this, and what is it best for?—SEMPER.

*** *Lightly fork over the border and mulch the surface 2 inches thick with the heap of road-scrapings and lime you have. The mulching will prevent the moisture escaping, and will gradually work down among the soil, enriching the border gradually. Stable-manure made from Moss-litter will do well as a mulch. It must first be thrown into a heap to enable it to ferment and thus throw off the gases which are injurious to plant growth. Turf for potting should lie until the Grass has decayed, then it is ready for use.*

1258—**Winter Cherry flowers falling.**—Will you kindly tell me through GARDENING the reason of the bloom falling from my Winter Cherry? The plant looks healthy, but the flower-stalks turn yellow, and the bloom falls off. Do they require much water?—WILTS.

*** *There are two or three plants called Winter Cherry, and they differ widely in habit and requirements. If you will kindly send us a portion of yours, and say what temperature and water supply are given, we can answer to better service.*

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Newhaven.—A book upon Roses can hardly be well up to date as regards varieties. "Book about Roses," by Dean Hole, can be obtained from most nurserymen at 2s. 9d., post free. Our columns are frequently occupied by seasonable Rose matter.——*A. M.*—"The Carnation Manual," post free, 2s. 9d., would suit you. It can be got from Messrs. Cassell and Co., La Belle Sauvage, Ludgate-hill, London.——*Inquirer.*—The name of the Lily is L. croceum. The old Orange Lily is one of the least expensive of all. Plant in early autumn.——*J. S.*—Messrs. J. Laxton and Son, Seedsmen, Bedford, raised Strawberry Royal Sovereign.——*W. W. Hall.*—May's book for amateurs on "Greenhouse Management," published at the *Bazaar* Office, 170, Strand, price 1s., would be useful to you. Study the pages of GARDENING carefully, from which you can learn all that is required.

NAMES OF PLANTS AND FRUITS.

*** ***Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, W.C.***

Names of plants.—*F. Dillon.*—Eucomis punctata, an illustration of which was given in GARDENING, July 17th last.——*L. P.*—We cannot name the Coleus, as there are so many varieties near each other in character. The only way to get the true names would be to send them to someone who grows a collection, as then a comparison could be made. Of the Ferns not named please send fertile fronds. The others are: 1, Adiantum cuneatum; 3, Pteris serrulata; 4, P. cretica albo-lineata; 5, P. serrulata cristata; 6, Asplenium bulbiferum; 8, Pteris tremula.——*Geo. F. Milburn.*—Very fine flowers of Francoa ramosa, which comes from Chili.——*Crosspatch.*—We have done the best we could with the Roses: 2, is evidently Gloire de Dijon; 4, Mme. Gabriel Luizet. The other plants are: 1, Geum coccineum; 2, Pentstemon barbatus.——*Mrs. Lindsay.*—Rose Celestial.——*A. B. Lowndes.*—The flower was much faded, but it is apparently Mimulus cardinalis.——*Mrs. D. Watt.*—A poor specimen of Hypericum olympicum.——*Colonel Silvester.*—Azalea arborescens.——*J. Kirkland.*—It is certainly not Duc de Rohan, being far too smooth-wooded and dark in colour for that variety. You seem to have a climbing form of Charles Lefebvre.——*Jack.*—1, Inula glandulosa; 2, Œnothera fruticosa; 3, Erigeron speciosus superbus; 4, Sedum Aizoon variegatum; 5, Geranium armenum; 6, G. sanguineum.——*Uncle.*—1, Pilea muscosa; 2, Centranthus ruber; 3, Achillea Ptarmica fl.-pl.; 4, Campanula Rapunculus; 5, Sedum Aizoon variegatum; 6, Linaria cymbalaria.——*E. S. Browne.*—In all probability the Climbing Aimée Vibert, but it is not easy to tell from cut blooms that had almost tumbled to pieces.——*J. S. F. Newton*—1, Veronica spicata; 2, V. rupestris. The Orchid is probably Oncidium hæmatochilum, but it was smashed almost beyond identification. Flowers for naming must always be carefully packed.——*E. C.*—1, Astrantia major; 2, Hemerocallis fulva. The Pea is named in the proper place.——*Edna.*—Martagon Lily (Lilium Martagon).——*R.*—We are sorry you sent the Carnation flowers, which, through being so crammed together, were not fresh. It is very difficult to name such flowers as Carnations; the varieties are endless. Do not sever the layer from the parent until it is time to transplant the layer.——*J. R.*—We are always pleased to help our correspondents. 1, Perennial Larkspur (Delphinium); 2, Sidalcea malvæflora; 3, Geranium phæum; 4, Please send again, withered; 5, Œnothera fruticosa; 6, Lilium pardalinum (Panther Lily).——*R. S.*—1, Lysimachia thyrsiflora; 2, Achillea Ptarmica fl.-pl.; 3, Astrantia major; 4, Spiderwort (Tradescantia virginica)——*J. Craig.*—Musk Mallow (Malva moschata).——*Vine.*—1, Cotoneaster microphylla; 2, Deutzia gracilis; 3, Achillea of some kind (send in bloom); 4, Cerastium tomentosum; 5, Iberis correæfolia; 7, Spiræa palmata; 8, Artemisia; 9, Tansy (Tanacetum vulgare); 11, Sidalcea candida; 13, Arabis albida; 14, Ajuga reptans.

Names of fruits.—*T. R. P.*—Without seeing the foliage it is difficult to name Raspberries simply from the fruit. Superlative is the best Raspberry in cultivation. It continues to bear a long time, is large, and a vigorous-growing kind.

LAW.

Greenhouse erected by both landlord and tenant.—Two years ago I commenced to erect a lean-to greenhouse at the back of my shop. My landlord not only gave me permission, but also supplied me with bricks for the building, and I received permission from an adjoining property owner to secure the building to his wall. My shop has been sold and I am intending to remove the business. Can I take down this greenhouse and remove it also? I am told I cannot, and I may say I never finished the greenhouse because the situation is a bad one, facing north-east and surrounded by other buildings.—CONSTANT READER.

*** I think this greenhouse cannot be removed, for the landlord found part of the materials. If the situation is so faulty, perhaps your landlord will not object to the removal, and if you were to take it quietly down at once he might not trouble. But if you wait until you give or receive notice to quit he will probably interfere. You say you are "in the trade," but, remember, a mere shop is not within the Market Gardeners' Compensation Act unless, indeed, it is in or on a market garden.—K. C. T.

The right to train trees on the wall of another.—One side of my garden is bounded by a wall which does not belong to me, but on which I have trained a number of fruit-trees. Kindly tell me if by long continuance I can claim the right to use the wall, and, if so, in how many years such a right would be gained?—QUINCE.

*** I do not think such a right can be gained by any number of years' use. You could not be compelled to remove your trees, as they stand upon your own land, but the owner of the wall might withdraw the nails or other fastenings you had placed in the wall. Suppose, now, that you could, by use, acquire the right to have your trees supported by this wall, would it not be unfair to your neighbour if he should wish to pull down the wall?—K. C. T.

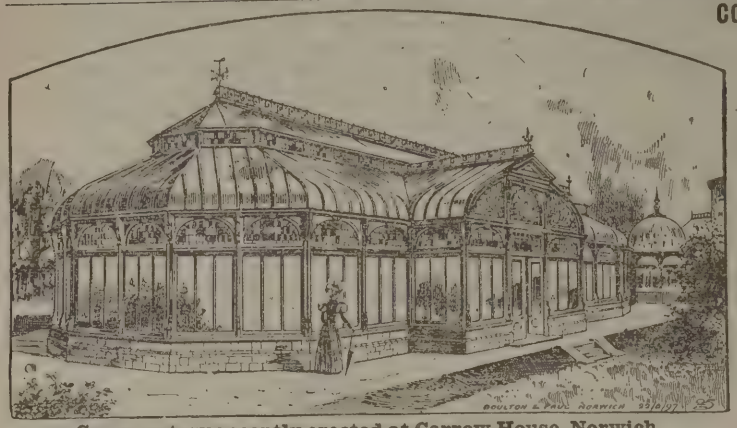
A gardener's notice.—I was employed by a farmer in the spring of this year as gardener at a wage of 16s. per week and a cottage rent free. I hear he is about to give me notice. What notice can I claim—a week or a month? My wages are paid weekly. Since I have been working for him I have used four dozen 5-inch pots, my own property, for his use, and have also some Geraniums, Fuchsias, and Begonias that I bought personally in his greenhouse. Can I take them away if he will not compensate me for them?—H. S. B.

*** If there was no express contract as to notice you are entitled to a month's notice, and when your service ceases your right to occupy the cottage will cease also. If your employer will not compensate you for the flowers you bought and placed in his greenhouse and for the flower-pots of your own which you used in his service you may remove them. It is, of course, understood that you have neither given these to him nor exchanged them for something of equal or corresponding value made over by him to you.—K. C. T.

Overhanging trees (*H.*).—An adjoining occupier of land may, after due notice has been given, cut or lop the overhanging boughs and branches of trees standing upon a neighbour's land, but the person entitled to the right of burial in a family vault in a churchyard is not in the position of an owner or occupier of land. His best course is to make a written representation to the bishop of the diocese, who will probably order the vicar to do what is required. At the same time it may be as well to point out that the property in tombstones is not in the incumbent, but in those who erected them, and possibly an action might lie against him. Had the garden in question been occupied by any other person the vicar and churchwardens might have lopped the trees in question, but the person entitled to the vault could scarcely have actively interfered. As already stated the proper course is to complain to the bishop.

Vitality of Tomato-seed.—It might interest some readers of GARDENING to know the length of time that Tomato-seed may be kept. I had some which germinated after being kept fourteen years, the varieties being The Conqueror and Reading Perfection. I raised plants of these this season, and they are bearing fine crops just now. My employer bought the seed in 1883.—GEO. E. MILBURN.

BOULTON & PAUL, NORWICH.



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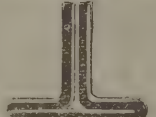

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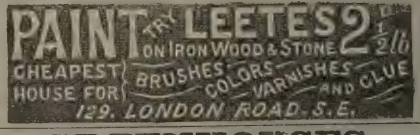

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FRUIT.

GRAPES SHANKING.

Grape-Vines are long-suffering and patient under abuse, but sooner or later they break down under bad treatment of any kind. Because they are naturally of a most productive habit of growth, Black Hamburgh and Foster's Seedling are the most abused of all Grapes. I have seen the former so regularly overcropped that at least more berries shanked than were eatable, while Foster's Seedling has been so overweighted with bunches that the variety was unrecognisable. The bunches were long, thin, and loose, the berries small, round, and quite green when ripe, and the flavour far inferior to that of the Royal Muscadine ripened against open walls or house-fronts. Instead of one, and sometimes two, bunches being left on every lateral, a far more valuable crop would be had by reducing the number to a bunch on every second lateral. Do not wait until colouring has commenced or been going on long enough to show that it will be faulty, nor till shanking has started, before reducing the number of bunches to reasonable limits, but set about it at once. Not only are the colour and quality of the berries of over-ripened or over-cropped Vines indifferent, but the attempt to perfect extra heavy crops each year must inevitably lead to a breakdown.

Another cause of shanking is that when roots are tempted to strike, or are driven down to a depth of 4 feet or 5 feet, they cease to do such good service as formerly, and to undue deep root-action shanking is frequently ascribed. It is near the surface where the roots will form the most root-fibres and be the most likely to profit by food and moisture placed at their disposal, and be benefited by warmth and air. A depth of 2 feet to 3 feet of border—that is to say, soil alone—is ample, and in this the roots ought to be kept active by means of top-dressings, moisture, and mulchings. If they leave it and strike downwards, shanking, mildew, or other evils will most probably have soon to be reckoned with. Watering either inside or outside borders at fixed or stated times is a mistake. They ought to be treated exactly the same as soil in pots, or watered whenever approaching dryness. Delay watering till the borders are quite dry, and much harm will already have been done to the roots, and much larger quantities of water are needed to remoisten the soil than need be used at two waterings when these are given at the right time. Worn out old borders well filled with roots ought to have liquid-manure or surface dressings of manure much more frequently than comparatively new borders, and sulphate of ammonia alone is but a poor food to give Vines. It supplies nitrogen alone, whereas phosphoric acid and potash are usually more needed. Well-diluted drainings from a mixed farmyard and sewage water greatly benefit Vines when given before the borders are quite dry, or after a very dry border has been remoistened either by rain or with the aid of the watering-pot. Once more I repeat there should be no fixed rule as to when and how often to water. I have had charge of borders which were so cold and retentive that it would have been a mistake to water them oftener than once in three weeks or a month, and at the present time I have borders that part with the moisture so quickly as to need watering once a week. That is where individual judgment ought to be exercised. Water a retentive border too often and it becomes saturated and sour, the roots perish, the wood is soft, the leaves turn yellow, and the crops are poor. Apply too little moisture to the non-retentive borders and the roots strike downwards or out and away in search of it, a precursor of shanking and also red-spider, faulty colouring of the berries, and general debility.

Grower.

Apple Bismarck.—This is a grand Apple in every respect, its size and colour stamping it as a valuable market kind, and in addition to this the trees are marvellously fruitful and rarely fail to bear. The tree is also a hardy, vigorous grower, and I think intending planters need not hesitate about planting it largely, and in private gardens a few bush trees on the Paradise-stock should have room found for them. One important matter I find I have omitted mentioning, and that is the fruits are very sound, solid, and heavy, a valuable fact not to be lost sight of by those contemplating growing Apples for market. The high opinion of this Apple formed by experts when first brought before the public notice has been fully borne out by its behaviour since that time, and it must have been very gratifying to the introducers to see how it at once caught on and how largely it has been cultivated since.—R.

Gooseberries.—These hardy bush fruits have again this year, when so many other fruits are scarce, shown their reliability, for the crop is perhaps the best of bush or tree fruits of the year. This fact should make the planting of bushes far more general than is even now the case. There seems to be no one variety that is more abundantly fruiting than another. I have been just recently into scores of cottage gardens and have found many sorts on bushes of all descriptions, old and young, and even where the fruits are gathered hear enthusiastic accounts of the quantities that have been gathered. Those who prefer large fruits for gathering green find Crown Bob, Lancashire Lad, Whitesmith, London, and Whinham's Industry to be some of the very best.—D.

Strawberries for small gardens.—When so many diverse varieties are in commerce, and each one gets from someone or other a recommendation, it is very difficult for the small grower for his own use to make a suitable selection. Undoubtedly it is needful to make a selection that seems generally of a satisfactory character, as Strawberry varieties have their fancies in soil and position, doing so much better in some than in others. Royal Sovereign is now metaphorically in everybody's mouth, and for a first early seems to rank as one of the very best. It is a good grower, and to a cottager or amateur that is a recommendation. Sir Joseph Paxton still takes rank amongst the best and most reliable of varieties for midseason. It is universally the market growers' best, and that is high praise. Then for late cropping a very fine variety is Latest of All, and where that does not do well, Elton Pine may be its best substitute.—A. D.

ROSES.

BOURBON ROSES.

Autumnal Roses are always welcome, and there are several reasons why this is so. They assist in a large degree to prolong the feast of beauty which the Rose-garden gave us during the summer months, when, perhaps, only fleeting visits could be paid to the country home; but when the autumn approaches then it is that the Bourbon Roses are valued. Excepting the Tea and Hybrid Tea scented and the Monthly Roses, there is no class of Rose so valuable for planting where late-flowering varieties are desired, and they certainly deserve much more extended cultivation than they at present obtain. Their bold, vigorous habit, combined with exceedingly free-flowering qualities and clear, bright colours, should be sufficient recommendation of this lovely class of Roses. Many varieties are also so exquisitely formed that one would almost imagine they had been taken from a mould. They make excellent standards, for frequently one sees quite a large head on a two-year-old plant. Many varieties are also well adapted for pillar Roses, if allowed to grow as they like, but it is as garden Roses that the Bourbons are most valuable. Where possible, it is best to plant them in large beds or masses of one variety, the ground of course being previously well trenched and manured. They delight in a good rich loam rather stiff than sandy, but must have good drainage. The treatment of these Roses is somewhat similar to that necessary for the Hybrid Perpetuals. For ordinary garden decoration they should not be pruned hard. Doubtless many Roses are over-pruned at the present day, with the result that, instead of seeing grand, effective shrubs covered with blossoms, there are a great many distorted, puny bushes. These Bourbon Roses will readily root from cuttings, but I prefer the seedling Brier for them, with its long tapering roots, as this stock is sufficient in itself to induce late flowering. Like most classes of the Rose, the Bourbons are becoming rather mixed, some having the name of Bourbon Perpetual, others of Hybrid Bourbon, but for all practical purposes they are the same. I append below a list of the best varieties taken somewhat in their order of merit.

Souvenir de la Malmaison.—A superb old variety, so well known that a description would be superflous. It is certainly the best of all the varieties hitherto obtained.

Mrs. Bosanquet.—Very pale flesh colour. Most abundant bloomer. Excellent either as a standard or as a bush, and very free in growth.

Mme. Isaac Pereire.—A fine showy flower and most abundantly produced. The colour is a lovely rosy carmine. Certainly a very fine Rose either as a standard, on a pillar, or as a bush.

Mrs Paul.—A large Camellia-like Rose of exquisite colour. It is blush-white with rosy-peach shading, and the flower has good thick petals; very vigorous in growth. It is a seedling from Mme. Isaac Pereire, and partakes of all the good qualities of that fine Rose. Splendid as a standard or pillar Rose.

Queen.—Wondrously free-flowering; often as many as fifteen to twenty flowers and buds can be counted on one shoot. The colour of the flower is buff, shaded rose.

Gloire des Rosomanes.—One of our most brilliant garden Roses. It is only semi-double, but instead of this fact marring its beauty it rather enhances it. The colour is a beautiful rich crimson. It is of vigorous growth.

Mme. Pierre Oger.—White, shaded and edged with a lovely pink. The most beautifully formed Rose in cultivation. Fine as a standard or dwarf.

Kronprinzessin Victoria.—A delicate primrose-yellow colour. It is a lovely variety, which appears to increase in popularity each year. It is a sport from Souvenir de la Malmaison.

Lorna Doone —The colour is a bright carmine shaded with scarlet. It is a Rose that should be in every collection.

Baron Gonella —This Rose should be more extensively grown. The colour is very distinct; the back of the petals is a deep rose, almost lake colour, edges of petals silvery, whilst the inner side of the petals is a deep pink. It is of very fine, free habit.

Queen of Bedders.—Rich crimson, abundant bloomer, and of a very dwarf habit.

Acidalie —A grand variety of a very slender, graceful growth. Its flowers are blush-white and of good size, and the variety is a semi-climber.

Comtesse de Barbantane.—Very double, flesh-coloured flower, of fine form, the plant vigorous in growth.

Reine Victoria.—Another well-formed variety of very vigorous growth. The colour is a bright rose, and the size of the flower may be called medium.

Robusta.—This is well named. It will make growths in one season 6 feet to 8 feet long. The colour is velvety crimson, with a purplish shading. Excellent as a climber or pillar Rose.

Comtesse de Roquigny.—Immense trusses of flowers are produced by this variety; the colour is white, flushed with salmon-flesh. Fine variety for the wild garden or shrubbery.

Sir J. Paxton.—Although somewhat flat, one cannot well omit this Rose because of its good character as a town variety. It is very free and vigorous; the colour is bright rose, the flowers are rather flat. As a free-flowering, vigorous variety there are few to equal it.

W. H.

ROSE-HEDGES.

(In Reply to "H. E. C.," Forest Hill.)

A correspondent asks for more information upon Rose-hedges, and as this is one of the prettiest forms in which to grow Roses, we willingly give the desired notes. First of all we must consider the object of our hedge. Is it to act as a screen, a shelter to other subjects to grow 2 feet, or 10 feet to 12 feet high, and is it to face east, or will it be in a somewhat sheltered position? Forest Hill and similar localities would scarcely do for dwarf hedges of the weaker growers, but William Allen Richardson and others might succeed when pegged down, in which case a distance of 5 feet from plant to plant would be suitable. But for dwarf hedges we can use the Scotch Briers, free-growers from among the Teas and Noisettes, such as Marie Van Houtte and Madame Lambard, and General Jacqueminot from the Hybrid Perpetuals. These should be planted 2 feet apart. A hedge of 4 feet or so can be obtained from the Japanese Roses (Rugosas), which flower very freely all the season, are not affected by mildew, red-rust, and other diseases, and carry clean foliage with most handsome berries. There is scarcely a better town-flowering shrub than these.

If we want a higher hedge, hardy climbing Roses can be used, but will now need to be planted 2½ feet apart, and encouraged to grow upwards. Here are half-a-dozen good kinds with their predominating colours: W. A. Richardson, orange and apricot; Waltham Climber No. 3, crimson; Aimée Vibert, white; Rêve d'Or, apricot-yellow; Mme. Alfred Carrière, creamy-white; and Pink Rover, pink. Do not be too free in mixing the colours; a hedge of one variety is far more showy and always more uniform. As a high hedge, especially for a complete screen, and also as a shelter to other subjects, you could not possibly have better plants than the Hybrid Sweet Briers, which will grow well in and near towns in any position, and give a hedge from 6 feet to 12 feet high during the second season from planting. Here, again, we would be chary of mixing the colours. Such as Flora McIvor, with its abundance of light-coloured flowers, has a very inferior appearance in connection with Anne of Gierstein or Jeannie Deans, two bright reds, than when either are grown alone. Four feet apart is none too far for these. Our reply to the first querist, on page 285 in the issue for July 17, gives other information should a reader require it.

Do not forget that a hedge of this description must not be underfed or overpruned

ROSES FROM CUTTINGS.

In reply to several correspondents, and as the present is a most seasonable date for the operation, we now give a fuller account of Rose propagation from cuttings and eyes than can be the case in our correspondence columns. That Roses can be grown upon their own roots and do well is a thoroughly established fact. At the same time, we do not go so far as some and say they should always be grown in this form, experience showing that many varieties are considerably aided by the help of a foster stock and roots. But as this part of Rose propagation has been dwelt upon under the headings of budding and grafting, we will dismiss it, and simply state that all vigorous and free growers are capable of good results upon their own roots alone. Indeed, as pot plants the beautiful Teas and Noisettes are far better when grown in this form. But the chief gain, especially to the amateur not thoroughly acquainted with Roses and stocks, is in the entire absence of suckers. How often, even in the present days of universal Rose growing, do we see a plant carefully tended and pruned, when in reality the whole, or, at all events, the chief part of its wood, is not the desired Rose, but useless suckers from the foster stock. It is certain that in the United States Roses thrive better upon their own roots than is the case with us; but that we can also have good plants and profitable beds in this form is becoming better known every year.

Now that the first crop of bloom is past there is much suitable growth to be found upon all Roses. The short piece of wood from below a bloom that was cut, or has faded off, is generally in the best possible condition. Take a piece of three or four eyes, cut off close below a leaf or eye, and your cutting is ready. Some remove the two lower leaves, but we find this quite unnecessary, and even get a greater percentage of success by leaving them on. It is quite immaterial whether the cuttings have a heel or small portion of older wood attached or not. In this instance we are not aiming for roots without undue risk of suckers in the future, as is the case when preparing stocks for Roses—a subject we will treat upon in due course—but would much prefer suckers from the base of the young plants. Still, we can root a cutting without a heel just as well.

Insert thickly and deeply in a compost of leaf-soil, turfy loam, and coarse sand in equal proportions. Give a thorough watering, and then stand the pots in a box, over which you can place sheets of glass and keep perfectly close. Stand these upon a shady border, or, better still, upon the cool and moist floor of a conservatory. Do not allow too direct sunshine, and if drying off much, give a second good watering and again keep perfectly close until roots have formed. When first potting off, replace in the box for a week or two, and gradually inure to full exposure.

For striking Rose-cuttings in the open, refer to our note upon "Stocks for Roses," which will shortly appear.

Roses in Cumberland.—A short time back I mentioned the unpromising condition of my border Roses. A heavy fall of rain and unusually high temperature have transformed my collection into a scene of unprecedented beauty, the blooms unusually large and deep coloured. The leaves are rapidly recovering from the effects of those cruel north-east winds and late frosts.—W. H. L.

Lamarque Rose.—I am sending you a photograph taken last month of the White Rose Lamarque upon our house. It was budded about 1884, and now extends to a length on each side of the stem of 22 feet. It has full southern exposure, and the natural soil is heavy clay. It blooms twice in the year, and was as luxuriant last year as this. On November 19, 1896, I gathered a good basket of Roses from it.—M. Borrer, *Cowfold, Sussex.*

Six best yellow-flowered Teas.—Would you kindly tell me the names of the six best yellow-flowered Tea Roses (bush) for growing in the open? Also the names of twelve hardy climbing Roses for wooden trellis facing south, which naturally would not afford the protection of a wall? I already have William Allen Richardson, Gloire de Dijon, Crimson Rambler, and a small white cluster Rose, either Aimée Vibert or Félicité-Perpetue.—G. Wynant.

*** Six good yellows for dwarfs are Marie Van Houtte, Mme. Hoste, Medea, Caroline Kuster, Perle des Jardins, and Amazone. Twelve climbers: R. M. Henriette, Mme. A. Carrière, Reine O. de Wurtemberg, Fulgens, Blairi No. 2, Réve d'Or, Kaiserin Friedrich, Waltham Climber No. 3, Pink Rover, Cheshunt Hybrid, Emilie Dupuy, and Mme. Chauvry.

Roses for pegging down.—I shall feel obliged if you would kindly tell me the best Roses for pegging down, the proper time of year in which to peg them, the details of how to peg them, and, further, whether they should be let up at any time for mulching?—T. G. A.

*** We contemplate a series of short lists of Roses suitable for different purposes shortly, and with each note will give a few remarks upon the treatment necessary. To give you varieties of various colours would occupy too much space for a special reply. Plant in November, prune hard the first year, peg down the following spring, summer prune when flower is passed, manure or mulch, and grow on more shoots for pegging down again the following year. See our notes later on.

Rose-trees dying.—Many of our Rose-trees seem dying off with some disease. Some of the trees have their leaves covered with dark-brown spots, some diseased also at the back. Will you kindly tell me what is the matter and the cause, and if there is any cure? Our soil is clay.—M. Cross.

*** Your Roses are infested with red-rust and red-spider. The former cannot be cured, but constant syringing would prevent the red-spider. However, your plants are so badly affected by red-rust that it is useless trying to save the foliage from the red-spider. See our note upon "Some diseases of Roses."

Rose Mme. Pierre Oger.—This is certainly one of the most beautiful of the Bourbon Roses. The lovely colouring of the flower is only equalled by its perfect formation. The petals are shell-like in shape, and are so regularly placed that the flower appears to consist of six circles of petals. The colour is ivory-white suffused with deep pink, the latter colour increasing in intensity towards the edges of the petals. It is very free blooming and of vigorous habit, making a good Rose for a standard or pillar.

China Rose Laurette Messimy.—This pretty Rose was raised in 1887, and as yet is none too common. The colour is a charming combination of rose and yellow. Its blossoms are not large individually, but of a nice shape and borne in fine clusters. The plant is charming grown as a standard about a yard high. We lose the full beauty of many Roses as dwarf trees, but when budded on the Brier at the height named one may comfortably inspect the flowers.

Rose-buds withering.—I should be glad to know the cause, and whether anything can be done to prevent the buds of our Roses withering away like the enclosed specimens? The bushes seem quite healthy, and the plants are in good soil and exposure, planted in Grass

along a wire flower garden fence. The buds turn quite red and yellow before they fall off.—Garthland.

*** As your plants are healthy it cannot be from lightning, nor from contact with the wire. We are inclined to think great atmospheric changes the main cause. During the third week of July there were often 30 degrees difference between day and night temperatures, and many cases of actual frost have been recorded. You cannot prevent such, and can only pick off the affected buds, from whatever cause.

THE MYRTLE IN LARGE POTS AND TUBS.

It is only in quite the southern counties of England that the Myrtle is safe when planted out; but it is a good shrub to grow in a large pot, as shown in the illustration. There are few finer shrubs for tubs to put out on the terrace or lawn in the summer months and give protection to in the winter. As a wall shrub the common Myrtle is valuable, too, as it makes

Myrtle in a pot. From a photograph by Mr. J. Vasey, Broad-street, Abingdon.

a dense covering, which may be brightened by the growth of Honeysuckle or Clematis, which will clamber about the Myrtles without harming them seriously. But a sheltered place must be chosen, as easterly and northerly winds greatly injure the young leaves in spring. There are several forms of the common Myrtle, in each case the leaves being fragrant and the flowers white, these being produced more or less freely. The chief varieties are the Roman, Italian, Dutch, Box-leaved, Thyme-leaved, and Andalusian.

CANTERBURY BELLS.

There are few more suitable flowers for the garden than Canterbury Bells, which are very free and display a wide range of colouring. The flower is one of long standing, and has for many years figured in old-fashioned gardens. In southern counties, particularly Kent, it seems to be a general favourite, and recently I have noticed the beauty of cottage flower-gardens in which the Canterbury Bell has played no small part. It is by no means fastidious, and many a spot where other plants do not succeed might be made beautiful by its aid, as on dry banks, and even under the shade of overhanging trees, Canterbury Bells grow and flower profusely.

Not long ago I noticed the beauty of a small garden in the front of a cottage by the roadside. It was planted almost entirely with Canterbury Bells, and the varying shades of blue, rose, and pink were pleasing and interesting. The bells were large, and the delicate tints showed that the strain was a good one. I have known amateur gardeners who have failed altogether with Canterbury Bells, and, in consequence have been much disappointed. The secret of success, if there be any secret, is to obtain strong, healthy plants, and in order to do this seeds should be sown at the latter end of May, and as soon as they are large enough to handle the seedlings must be removed to a nursery-bed prior to their final planting in the autumn. If the seeds are sown too late the plants do not get sufficiently large in time for the final planting, and disappointment is the result.

Canterbury Bells should not be again removed after the autumn planting, or this will interfere with flowering the following summer. The plants may also be grown in pots, under which conditions they are extremely useful for the adornment of greenhouse or conservatory. Precisely the same treatment is required, with the exception that they are potted in the autumn into 7-inch or 8 inch pots instead of being planted out, and during the winter plunge the pots in ashes as a protection against frost, or place them in a cold-frame. I have grown fine specimens of Canterbury Bells in this way, and have always found them extremely showy for the conservatory. H. H.

A SELECTION OF CARNATIONS.

It would be a great boon to many of your readers who, like myself, are amateur growers of Carnations and have no chance of seeing the many kinds advertised in bloom, and cannot properly tell the worth of a flower from the description in a catalogue, if someone would give us the benefit of his advice before we make our purchases in the autumn? Raby Castle and many more are not worth growing, especially for exhibition. I suggest the description of one or two dozen of the latest fit for exhibition, free from bursting, free-blooming, strong growers, and bearing good-sized blooms of various colours. Many in my district would be greatly benefited by such advice. Waterwitch.

*** Several correspondents write asking for the names of the best varieties of Carnations, and it seems to be a necessary quality with each of them that they do not burst their calyx. A Carnation to be free from bursting—that is, a variety of which the calyx does not split—must have a long, stout calyx, and not be too much crowded with petals. As to varieties, the new ones recently raised by Mr. Martin R. Smith will in time eclipse all the old varieties. The correspondent whose letter we print says Raby Castle and a good many more are not worth growing, and he suggests that "one or two dozen of the more recently introduced varieties, fit for exhibition, non-bursters, free-blooming, and strong growing varieties," be described; but does not say in what classes. I will, therefore, describe the

Selfs first, as this is the most important section: Dick Donovan (Martin Smith), blush-white; Endymion (Martin Smith), salmon-pink; Lady Hindlip (Martin Smith), crimson-scarlet; May Yohe (Martin Smith), reddish-pink; Nox (Martin Smith), rich dark crimson-maroon; Silver Strand (Martin Smith), pure white. The above six are new this year. Of older selfs the best six are: Germania (Benary), yellow; Paradox (Spurling), bright scarlet; Mrs. Eric Hambro (Martin Smith), pure white; Exile (Martin Smith), deep rose; Waterwitch (Martin Smith); Bendigo (Martin Smith), blue-purple; Mrs. Colby Sharpin (Sharpin), rich cinnamon.

Fancy Carnations.—The best twelve are Perseus (Martin Smith), new, yellow ground, edged orange-red and lilac colours; Don Juan (Martin Smith), new, buff ground, flaked purple; Cardinal Wolsey, buff ground, heavily flaked scarlet; George Cruickshank, orange-buff, flaked crimson; The Dey, buff, streaked rose. The above three are also Martin Smith's, and are of the best. The Czar (Douglas), yellow ground, broad purple margin; Duchess of Portland (Lamb), white, streaked rose; Stradtrath Basil (Benary), deep yellow, edged and streaked scarlet; Welbourne, deep yellow, heavily edged bright red; Mogul (Douglas), yellow, flaked scarlet; Mauld (Ellis), buff, edged red; Victory (Douglas), yellow, flaked bright red.

Show Carnations.—Bizarres: The best scarlet Bizarres are Admiral Curzon (Easom), S.B.; Joseph Crossland (Simonite), S.B.; Othello (Lord), S B.; Robert Houlgrave (Barlow), S.B. Crimson Bizarres: The best four are Bruce Findlay (Lord), Patriot (M. Smith), Phœbe (M. Smith), J. S. Hedderley (Rodwell). Pink and purple Bizarres: William Skirving (Gorton), Sarah Payne (Ward), Harmony (Douglas), Arline (Lord).

Twelve flakes.—The best four purple flakes are Charles Henwood (Douglas), James Douglas (Simonite), Mrs. Douglas, (Dixon) George Melville (Dodwell). Scarlet flakes: Alisemond (Douglas), Guardsman (Chaundy), Miss Constance Grahame (M. Smith), Sportsman (Hedderley), Rose flakes: Thalia (Douglas), Rob Roy (Gorton), John Keet (Whitehead), William of Wykeham (Douglas).

Picotees (white ground).—These are divided into no less than six classes for show purposes—viz, red, purple, and rose edges, these again into light and heavy. H will stand for heavy and L for light edge. Best four red are Brunette (Kirtland), H; Ganymede (Douglas), H; Mrs. Gorton (Simonite), L; Thomas William (Flowdy), L. Best four purple edge: Muriel (Hewitt), H; Mrs. Chancellor (Turner), H; Her Majesty (Addis), L; Nymph (Lord), L. Best four rose edge: Little Phil (Dodwell), Mrs. Sharpe (Sharpe), Favourite (Liddington), Fortrose (Douglas).

Yellow ground Picotees now constitute an important section of the Carnation family, for it ought to be generally known that Picotee is a mere name for a section of the Carnation. The best twelve varieties are Badminton (M. Smith), Empress Eugénie (M. Smith), Miss Alice Mills (Colby Sharpin), Stanley Wrightson (Douglas), Wanderer (M. Smith), Annie Douglas (Douglas), Eldorado (M. Smith), Florrie Henwood (Douglas), Golden Eagle (M. Smith), Ladas (Douglas), Mr. Nigel (Douglas), Mrs. R. Sydenham (Douglas).

J. D. E.

THE KITCHEN GARDEN.

GLOBE AND JERUSALEM ARTICHOKES.

At this season the

Jerusalem Artichoke is not much thought about, but it is one of the best winter vegetables we have on account of its hardiness and its vigour in any soil or situation. It is delicious for soups or used as a winter vegetable. The Globe is not so much grown by amateurs as it

Globe Artichoke.

should be. By many it is thought to need more than ordinary culture, but few vegetables need less, and though there are losses in some localities from frost in severe winters, these are rare once the plant gets well established. Of late years the

Jerusalem Artichoke has been considerably improved. We now have white tubers almost smooth, not unlike a Beauty of Hebron Potato. This is a great gain, as the old pink form was much corrugated, difficult to prepare, and on this account found little favour in the kitchen. Again, the advent of the Chinese variety (Stachys tuberifera) was welcomed, as, though it is a very small form, it may be improved upon with good culture, and it is a great cropper. Take the

Globe section, one of the varieties illustrated; this has also been improved upon. Many years ago we had not the compact globe-shaped variety we have now; the heads were longer, spiny, and less succulent. A new variety named Large Green Globe is so superior that it needs special mention in the improvement which has taken place of late years. The Large Purple Globe is also an excellent type, and far superior to the spring varieties obtained from seed. Among other things not so well known is a Parisian tuber of splendid quality. This is a distinct new Jerusalem variety, and so readily prepared. In shape it is more like a Carrot, and the flavour is superior to the old pink form. A few words as to

Culture may not be out of place, and here let me remind my readers the Globe variety is readily obtained from seed; but the amateur, when he obtains his plants thus, should make a rigid selection after the plants come into bearing, as fully half will not be worth keeping. This, I must admit, is not always the case with the newer kinds. I have got the Green Globe almost true, and doubtless this is the result of rigid selection, as in the older varieties it is the rule rather than otherwise to get a large percentage of worthless seedlings; but the Globe varieties are so readily propagated from suckers that it is best to get a few suckers of a good form and grow stock, as then there is no time lost in weeding out poor seedlings in the rows, and one can devote more attention to the good varieties. It is often asked, Are Artichokes worth growing? I say yes—few vegetables more so; and the amateur can grow them as well as the best grower if he makes a good start. In the case of the Globe, it is useless to crowd the plants. I would advise at least 6 feet between the rows, 3 feet between the plants in the row, double dug or trenched ground, and plenty of manure. The plant is a gross feeder, and may be given liquid-manure in abundance from June to September—indeed, these plants are often starved whilst growing, needing more moisture, and in dry soils would well repay a top-dressing of manure twice a year. In gardens where they are at all injured by frost I have lifted suckers in November and wintered them under a wall. These make a nice new quarter the next spring, and produce very fine tops. When obtained from seed, it is well to sow in a frame in March three seeds in a small pot. Reduce to the best when above the soil, and plant out end of April or early in May, and water freely in dry weather. The seed may be sown in the open ground in April; but the plants do not attain the size of those raised in a cold-frame.

The Jerusalem Artichoke is so well known that few cultural details are here needed, but I would here add these plants are often seen growing year after year in the same place without any help in the way of manure. The New White is well worth the cultivation given to Potatoes—that is, change of soil, new seed, and ample food. Many use these tall growers as a fence or dividing line, and they answer the purpose, but give them food also and space. If planted in rows, quite 4 feet should be allowed between the rows, and half that distance between the plants in the rows. This variety does best left in the soil and dug up as required for use; but if the land is needed for other things, lift in November and place in a clamp, merely covering with soil to exclude frost and keep the tubers moist, as they soon shrivel and lose flavour in a dry or warm position. This variety should be planted in February or March, using good-shaped, medium-sized tubers as sets.

W.

TOMATOES FOR FLAVOUR.

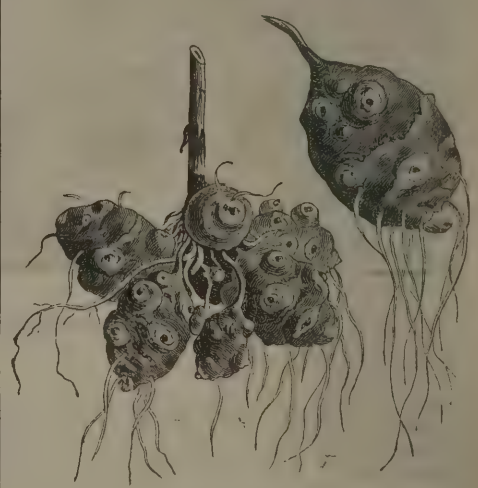
In spite of the number of new varieties of Tomatoes which have made their appearance during the last few years, it is a fact that the majority of them, like the majority of new Apples, Pears, and Potatoes, are in point of flavour far behind some of the older though less cultivated sorts. A few years ago Tomatoes were not eaten, as a rule, except in a cooked state, and then the old dwarf Orangefield was found in almost every garden growing between the Peach-trees on south, and Apricot-trees on west walls; and I maintain that for exquisite flavour that rugged sort has never been beaten, and as to cropping, all gardeners can remember how in fine sunny autumns the fruit hung like ropes of Onions from summit to base. Later on, when culture under glass commenced, this variety was still grown in pots, and when sold held its own against all comers. No sooner, however, did the community acquire the taste for eating the fruit raw—and the eye had to be pleased as well as the palate—than the smooth, symmetrical forms at once took the lead and have kept it ever since. The corrugated varieties are usually the freest setters and the heaviest croppers, and, with the additional fact that many of them possess splendid flavour, I see no reason, but rather the reverse, why they should not be grown at least in private gardens where Tomatoes are much in demand in the kitchen. Of course, the market grower must go in for the varieties that command the best sale, and these are alone found in the smooth, handsome forms; but I find that many customers of fruiterers in towns are complaining of the indifferent flavour of these handsome varieties, which was never the case when Hathaway's Excelsior and Perfection were about the only two non-corrugated sorts which found their way into the market—two Tomatoes which those who have proved their worth are not likely to discard for perhaps slightly more showy sorts, whose chief characteristics are a hard core and an acid flesh.

I am sure there is no difference between many of the so-called distinct varieties. No sooner is a good Tomato sent out than it is almost certain to be re-named by some unscrupulous firm. I have this year several varieties supposed to be distinct, but which I cannot detect the least difference in, either in habit of growth, shape, colour of fruit, or flavour. Sensation, I believe, to be an improved strain of Perfection, and nothing else. Chemin Rouge is, I consider, a capital Tomato, taking on a deep red colour, and possessing a first-rate flavour. The want of colour in many of the newer sorts, even when grown under glass, is one of their chief drawbacks. I think all will agree with me in saying that Tomatoes grown under glass are, as a rule, of better quality than those even from open walls, to say nothing of those grown on open quarters trained to upright stakes. Although many who grow for market are compelled from lack of capital to go in for open-air culture, yet house culture, although incurring considerable expense at the outset, reduces the liability of disease to a minimum, and renders the certainty of finishing autumn crops tenfold greater than is the case with outdoor crops. Fancy a grower having half-an-acre or an acre of Tomatoes which look as well and promising as can be wished for up to a certain date, and then from lack of sunshine and continuous rains disease sets in and destroys the lot, and this is often the case. Corrugated Tomatoes do not crack so soon or so badly as the smooth, round ones.

J.

New Zealand Spinach.—In hot weather the round-leaved kind is not a success, but it suits the New Zealand variety, as, give it abundant moisture, it grows well. Within a few yards from where I am writing upwards of a dozen clumps of it are growing. In the spring I raised the plants in heat. When strong enough they were put five plants into a 5-inch pot, and about the middle of June a south border was cleared of Lettuces, where a barrow of old hot-bed manure was placed at distances of 2 yards apart, covering it with soil. Plants were planted on each and plenty of moisture given. Now (July 17th) we can commence gathering, and shall continue to do so till destroyed by frost.—J. Crook.

Propagating-house (*Be*).—If there is any difficulty about getting sufficient bottom-heat through the slate which covers the hot-water pipes take it off and cover the pipes with broken bricks 9 inches thick, through which the heat will ascend regularly. Where possible it is a good plan to have the bottom-heat pipes in a tank of water; this is a good way of providing bottom-heat, but perhaps too expensive to make.



Jerusalem Artichoke.

In any case, the bottom-heat pipes ought not to be more than 18 inches from the surface of the bed on which the plants are growing; a little less would be all the better. Upon how the pipes are arranged in the beds, of course, depends the quantity of heat you will get. Generally, the flow-pipe runs round the top of the bed, near to the glass, to provide surface-heat, and from there it passes as a return under the bed, thus providing sufficient bottom-heat. Without seeing the house or having more information than your sketch provides as to the number of pipes in the house, the size of the latter, and how the boiler is set, and what sort it is, it is a most difficult matter giving trustworthy information. You would do wise to consult a trustworthy hot-water engineer in your neighbourhood before making any alterations.

TREES AND SHRUBS.

THE JAPAN QUINCE (PYRUS JAPONICA).

The fruits of this Pyrus are large, and though they do not become brightly coloured when ripe, as many of their allies do, yet their fragrance at that time is very tempting; but they are by no means pleasant to the taste. It is indeed as a flowering shrub that this Pyrus claims attention, and in this respect it stands in the very front rank, for it possesses so many desirable features. In the first place, when trained to a wall its rich-coloured blossoms serve to brighten up an otherwise dull winter's day; next, though often treated in this fashion, it is thoroughly hardy when grown as an open bush, though in this case, of course, its season of flowering is later. Under whichever conditions it may be grown the blooming period of this Pyrus extends over a considerable time. It is one of those subjects that may be regarded as everybody's flower, for many a cottage is during the winter and spring enlivened with its bright-coloured blossoms, whilst in the largest and most ambitious gardens it is frequently represented by several varieties. When grown in the open ground this Pyrus is not seen at its best if dotted here and there in a shrubbery border or similar position, but is very effective as a bush on the open lawn, while three or four distinct kinds grouped in a good-sized bed will form a most attractive feature when in bloom, and be an object of interest throughout the year. The varieties are numerous, the principal feature of each being the different colour of the flowers, which range from pure white to deep crimson through various shades of blush, pink, and scarlet. This Pyrus, which at one time was more generally known as Cydonia japonica, was introduced from Japan in 1815, but little seems to be known of its early history. Its merits, however, asserted themselves before any great length of time had elapsed, as it was by Loudon referred to in the following terms: "One of the most desirable deciduous shrubs in cultivation, whether as a bush in the open lawn, trained against a wall, or treated as an ornamental hedge plant." Though it is many years since this was written, Loudon's opinions will, I think, be still endorsed by everyone at the present day. A good rather deep loam that is always at least fairly moist suits this Pyrus best, but it is not fastidious as to soil or situation.

Flowers of the Japanese Quince.

An allied kind is Pyrus Maulei, which is of far more recent introduction, having been obtained from Japan by Messrs. Maule, of Bristol, after whom it was named. This Pyrus made its appearance as a novelty in 1873. It differs in many widely-marked features from P. japonica, being much less in growth, with smaller foliage and flowers, these latter being of a bright orange-scarlet as a rule, though in tint they vary somewhat. The fruits are borne more freely than in the case of P. japonica, while they are in shape more like an Apple, and when ripe are of a rich golden-yellow, flushed with red. In the early part of May P. Maulei is an extremely bright object when laden with blossoms, and frequently its fruits form an equally effective autumn feature. There is not nearly as wide a divergence from the normal type in this species as there is in the allied P. japonica, for this list is represented in different lists by varieties innumerable, while P. Maulei, though it shows a certain amount of variation when raised from seed, has only, as far as I am aware, one decided variety. This is superba, whose blossoms are much richer and deeper in colour than the common kind. When first introduced it was thought likely that the fruits of P. Maulei would prove useful, but they can only be eaten as a preserve. It is just as hardy as P. japonica, and when a group or groups of this last are planted P. Maulei is just the thing for the outskirts thereof. T.

Fruit of Japanese Quince (Pyrus japonica).

ERANTHEMUM ANDERSONI.

Some of the Eranthemums are remarkably pretty flowering plants for the stove, and included amongst them are very diverse forms, while their season for blooming is also variable. Eranthemum Andersoni forms an erect-growing plant furnished somewhat sparingly with large oblong leaves, while the shoots are terminated by long spikes of closely packed blossoms. The individual blooms are about an inch across, and pure white except the lower lobe or lip, which is exquisitely blotched with rich purplish-lake, that contrasts markedly with the rest of the flower. It usually blooms in the latter part of the summer or in the autumn months, but will sometimes flower in the spring. This Eranthemum does not naturally form a bushy specimen, and if stopped too freely during its early stages an increased number of shoots is obtained at the expense of blossoms, as the large massive spikes borne on the strong shoots are much more effective than the poor weak ones which result from overstopping. Though this Eranthemum may run up rather tall it is extremely useful in this state for grouping. Propagation is best carried out in the spring, and cuttings root readily enough. It is a native of India, and was introduced into this country nearly thirty years ago. Another species is E. albiflorum, a sturdy-growing, upright-habited kind, which flowers freely when little more than a foot high. The foliage of this is of a very deep green, while the terminal panicle of blossoms is not unlike a cluster of White Lilac. This is perhaps the most generally useful of the whole genus, as the plant is naturally of a bushy habit, while the flowers, which are of a beautiful blue colour, are freely borne in the depth of winter. Another desirable member of the genus from a flowering point of view is E aspersum, whose blooms are borne in small axillary clusters. They are not unlike those of E. Andersoni, except that the purple marking extends over the whole of the flower. This blooms in the spring, and so does the large-growing E. cinnabarinum, which will run up to a height of 4 feet to 5 feet. The flowers of this, which are borne in long branching terminal panicles, are large and of a bright magenta-crimson colour. It is a valuable decorative plant in the spring. Besides these remarkable for the beauty of their blossoms there are some whose foliage is the principal claim to recog-

nition, but they are not so popular now as when first introduced, for most of them were sent here from Polynesia about the time that variegated-leaved stove plants were so popular. The most notable of these are E. reticulatum, with broadly lanceolated leaves of a bright green tint and heavily veined with gold—certainly a very bright and effective plant—while in albo marginatum the broad deep green leaves are edged with white, and those of E. atropurpureum are of a uniform rich purple tint. A curious combination of hues occurs in E. tricolor, the oblong-shaped leaves being marked with olive-green, greyish-purple, and salmon-pink, in ever-varying combinations. H.

OUTDOOR PLANTS.

A WARWICKSHIRE COTTAGE GARDEN.

The accompanying illustration shows a cottage garden at Wishaw, in Warwickshire. Climbers run over the windows and porch, and everywhere flowers are present—hardy perennials in variety and well grown. An edging of white Pinks gives a welcome finish to the picture. We have recently given illustrations of cottage gardens in various parts of England, but few have been more pleasing than this flowery spot in Warwickshire.

A Warwickshire cottage garden. From a photograph by Mrs. Barton, The Grove, Wishaw.

PLANTING A BORDER.

I shall be greatly obliged if the Editor could give me advice about planting a double border in an old-fashioned kitchen garden. The border is 6 feet wide on either side of the path and 160 feet long. Backed on one side by Hornbeam-hedge and on the other by espalier Apples. I want flowers at least eight months in the year and clumps of distinct colour. I am having the border prepared and made very rich, so that all space can produce flowers and small things be sown to blossom under tall ones. Double Border.

*** There is plenty of scope for fine effect in these long kitchen garden borders, which should contain blossoming plants from March till October. The bulk of the collection should consist of herbaceous plants and bulbs, while here and there a clump of a good annual or less hardy plants of handsome colouring might be used. In March the fine Trumpet Narcissi should commence to flower, N. maximus, Emperor, Golden Spur, Horsfieldi, and Queen of Spain being a good selection, while Sir Watkin, Stella, Cynosure, and Frank Miles are good specimens of the incomparabilis section, and Grand Monarque and Soleil d'Or of the Polyanthus class. The Scillas and Chionodoxas, in breadths, will give their bright blue, and Hepaticas and Anemones star the border with their varied tints. The Tall Crown Imperials make an imposing show, and these and the Lyre-flower (Dicentra spectabilis) are often in bloom before the conclusion of March. In April the Fair Poet's Narcissi come, and Doronicum plantagineum excelsum Harpur-Crewe produces its great golden stars; the Scarlet Geum also will give a bright note, and the purple of Campanula glomerata is not unpleasing. Bulbs may always be surfaced with Myosotis dissitiflora, whose azure carpet forms a lovely setting for the tall flower-scapes. The Scarlet Tulips show well in such company, one of the best of these being Vermilion Brilliant, which is worthy of its name. In May the Day Lilies begin, with the scented Hemerocallis flava, and during this month and the next the lovely Hybrid Aquilegias, with their graceful shapes and charming colour-gradations, are in bloom. These should be treated as biennials. Dictamus Fraxinella, and especially its white variety, will make handsome plants when well established, and sheaves of the White Gladiolus Colvillei The Bride should be grown, with which the scarlet flower-spires of Heuchera sanguinea will contrast effectively. Irises should also be used, some of the German Flags being fine for massing. Amongst the best are I. pallida and pallida dalmatica, Celeste, Queen of the May, Victorine, Madame Chereau, Princess of Wales, florentina, atro-purpurea, and flavescens. Clumps of the Spanish Irises (I. Xiphion) should also be planted, care being taken both in this and the English Iris (I. xiphioides) that only self-coloured varieties are purchased, which should be massed in distinctive colours. Libertia grandiflora, another May-flowering plant, is well worthy a place in the border. Of Poppies we have a number, the most striking of all being the great Oriental Poppy (P. bracteatum), whose colour should be of a vivid scarlet, not inclining either to crimson or to orange. The pretty Iceland Poppies (P. nudicaule) in their three colours, and the drooping Welsh Poppies (Meconopsis cambrica) should also be utilised, as may the apricot-tinted P. pilosum, while breadths of Shirley Poppies may be sown at intervals. Tree Pæonies are very handsome in a border, as are some of the newer herbaceous Pæonies. White Pinks should, of course, be grown in quantity, and the sweet-smelling Double White Rocket should certainly not be left out. The latter does better if shifted each autumn. Thalictrum aquilegifolium makes a good back-row plant, as do Lupines, Monkshood (Aconitum napellus) at this time of the year; white Solomon's Seal and Fair Maids of France (Ranunculus aconitfolius fl.-pl.) are also May flowers.

June is ushered in with the first of the Lilies, generally the yellow L. pyrenaicum, followed by L. umbellatum, L. croceum, L. Martagon album, the Madonna Lily, and L. excelsum. All these are handsome in large clumps, but the first-named possesses a rather disagreeable smell. Achillea Ptarmica fl.-pl. The Pearl, a long-flowering vigorous plant, should be used here and there as well as Erigeron speciosus, and the Hybrid Alstrœmeria is one of the most delightfully-coloured flowers we possess, being easily raised from seed and increasing in strength year after year. The tall Campanulas, C. grandis and its white variety, C. latifolia, and C. persicifolia alba plena, are all effective, whilst of the Bergamot (Monarda didyma) a plant or two should be grown. Hemerocallis fulva and Kwanso fl.-pl. fol. var. are worthy of selection, as well for their handsome leafage as their blooms, and the scarlet Lychnis chalcedonica is particularly striking at a distance. Some of the Sea Hollies, such as Eryngium Oliverianum, E. Bourgati, and E. amethystinum, bloom about midsummer, their colours being very beautiful, especially when grown near the Evening Primroses Œnothera fruticosa or Œ. Youngi, both of which are June bloomers. The Crimson Dianthus Napoleon III. and the golden-yellow Linum flavum are two brilliantly-coloured subjects that will show their hues to advantage near the front of the borders. In July Carnations should be masses of colour. Clumps of the scarlet Gladiolus brenchleyensis may be associated with the white Cape Hyacinth

(Galtonia candicans), with which latter the blue of Salvia patens mingles with excellent effect. The Salpiglossis is such a beautiful annual that it can hardly be out of place, and the yellow Paris Daisy shows it off to the best advantage. Chelone barbata is worth growing, and the borders will be much improved by tall Hollyhock spires towering into the air in the background. Galega officinalis and its white form are very pleasing, while of July Lilies, L auratum, L. pardalinum, L. Humboldti, and the scarlet Turk's-cap (L. chalcedonicum) are the most notable. Here and there plants of Gypsophila paniculata, with its fine flower-lace, should rise in billows from the foot of a tall-growing subject. The blossoms of the Ivy-leaved Pelargonium Souvenir de Charles Turner will be found to create a delightful contrast with the grey of its myriad flowerets. Tall Phloxes of distinct colours have a fine effect when massed, and the Plume Poppy (Bocconia cordata), with its glaucous foliage and ivory-white inflorescence, rising 7 feet or more in height at the back of the border, would produce a striking picture. Rudbeckia Newmani and the light blue Scabiosa caucasica are attractive at about this period and during the following month. In August the perennial Sunflowers will show their wealth of golden blossoms. Helianthus rigidus Miss Mellish and H. lætiflorus are the best singles, and H. multiflorus Soleil d'Or as good a double as any. Hydrangea hortensis is handsome, but would be considered rather out of place in a bed in Devonshire, where it is largely used for the ornamentation of drives and parks. Some of the newer Cannas, massed here and there, should create brilliant effects, while the leafage of the older varieties, such as C. iridiflora Ehmann, is exceedingly noble. The white Japanese Anemone would be valuable at this time, and the Tiger Lilies, of which the best is L. t. Fortunei, should commence to bloom in August, while the best of the Cactus Dahlias will make a brave show, and the glowing bloom-spikes of the vermilion Lobelia cardinalis make spots of vivid colour, while the orange calyces of Physalis Alkekengi (the Winter Cherry) create a pretty effect.

September is the month of the Michaelmas Daisies, and many of these perennial Asters are worthy of a place in the border. Amongst the best are Aster Amellus bessarabicus, large-flowered purple; A. Novi Belgi Harper-Crewe, white; A. N. B. niveus, another white, rather later; A. N. B. Robert Parker, light lavender, very tall; A. ericoides, a small plant thickly studded with minute white stars; A. puniceus pulcherrimus, a particularly floriferous variety with white flowers slightly tinted blue. Two good Starworts of the Novæ Angliæ section are Melpomene, purple, and ruber, red; Pyrethrum uliginosum, with its wide-rayed stars, will also be at its best, and is far more decorative than the slightly earlier Chrysanthemum maximum.

In October few new flowers can be expected, though Aster grandiflorus and Stokesia cyanea may produce their purple blooms if not injured by an early frost; and both the Winter Flag (Schizostylis coccinea) and the beautiful and fragrant Iris stylosa then commence their flowering. There will, however, be plenty of flowers common to earlier months left to colour the borders.

In the foregoing an idea has been given of what plants will be in bloom in certain months, but this period may often be considerably lengthened. In planting, massing rather than dotting should be practised, and care be taken that discordant colours are not placed in juxtaposition. The roots from the Hornbeam-hedge will probably give some trouble and will have to be cut out and the adjacent border re-made occasionally. S. W. F.

Tufted Pansy Pembroke.—There is much to admire in this handsome rayless variety. The flowers are of large size, almost circular in shape, and very even and neat. The colour is bright rich yellow, fading slightly on the edges of the upper petals. The flowers are freely produced on long footstalks, this fact alone rendering them very useful for vases and similar receptacles. The blossoms are fragrant, a few flowers distributed about a room scenting the whole apartment. The constitution is excellent, and there is good reasons for believing that this variety will be largely grown.—D. B. Crane.

Hardy Ferns and Cyclamens in the Rectory garden at Woodbastwick, near Norwich. From a photograph by Miss Dunstan, Court Lodge, Knockholt, Sevenoaks.

FERNS.

HARDY FERNS PLANTED NATURALLY.

There are many varieties of our native Polystichums, Hart's-tongues, Blechnums, which would be excellent as companions to the evergreen herbaceous plants suited for sheltered, half-shady nooks. There are also many exotic kinds hardy and vigorous. Graceful and new effects may be developed in foregrounds by drives through glades and in many other positions by the bold use of hardy Ferns of the larger kind. The Bracken we see everywhere; but some of the others are more graceful in form, and delight in the partial shade of open woods and drives, and do even in the sun. Up to the present time Ferns have, as a rule, been stowed away in obscure corners, and never come into the garden landscape at all. But not only can they give us new and beautiful aspects of vegetation in the garden landscape, but even in parks and woods.

The best way of growing Ferns is along with the flowers as in Nature. Ferns in their natural state have, as a rule, both soil and locality exactly suited to their requirements; furthermore, the soil is yearly enriched by the decaying foliage of surrounding trees, which foliage, moreover, forms a protection to them in winter. In arranging a fernery, study the habits and requirements of the species, and allot each such a position as is most likely to produce the best results. The most sheltered, moist spot should, for instance, be given to varieties of the evergreen Blechnums, which delight in a damp atmosphere, and the delicate forms of Asplenium. The noble Osmunda needs a damp place, free, however, from stagnant moisture. The best soil for these Royal Ferns is a mixture of good loam and fibrous peat. The better deciduous kinds of Polypodium, such as P. Phegopteris and P. Dryopteris, should have sheltered positions, and in quiet nooks should be found charming groups of such things as the Parsley Fern and Cystopteris fragilis, a most delicate and graceful Fern. Let Lastrea Filix-mas and its varieties occupy the bolder and more exposed positions, in company with fine colonies of the evergreen

kinds, comprising some unique varieties of the Polystichums, Scolopendriums, Polypodiums, etc.

The beauty of a fernery is much enhanced by having the larger kinds of Ferns growing out of some plant of dwarfer habit. The Ferns themselves are much benefited by this plan, because there is not an excessive evaporation constantly going on during dry and hot weather. The small Ferns are best without any carpet. They are the choicest, rarest, and most difficult to grow, and, as they require a little extra attention, it would be better not to run the risk of their being smothered. The Fern lover will remember that it is not only our own beautiful native Ferns that we possess for the adorning of our outdoor gardens. If we had but these and their many pretty forms they would be a great aid; but we have also the hardy Ferns of America, Asia, and the Continent of Europe. Some of the monstrous varieties of our own Ferns are not pretty—not worthy of a place in the flower garden.

THE GOLDEN DROPS (ONOSMAS).

Onosma albo-roseum is as yet a somewhat scarce plant in commerce. It has white or blush-white flowers, which are drooping and inclined to tubular in outline. It is a distinct and pretty plant, and an interesting companion to the other members of this genus. Though frequently coming through our winters safely, it cannot be considered so reliably hardy as the better-known kind O. tauricum. When planting the above, a well-drained chink, where its roots may descend deeply in a free, gritty loam in a sunny position, avoiding manure of any description, is the best position. The other species of this genus are

O. echioides, a very charming plant of biennial duration. Its flowers, which on large plants are abundantly produced, are of a rather pale yellow, and in favourable seasons seeds are freely produced. A warm, sunny exposure in the rock garden in deep, gritty loam suits it well. In general habit the plant resembles O. tauricum. Native of Southern Europe.

O. simplicissimum is a perennial species from Siberia, with terminal racemes of pale yellow flowers. I have not grown this species and am unaware if it exists in cultivation in this country.

O. stellulatum is a variable species; flowers either white, yellow, or citron in colour. A native of Macedonia, growing about 6 inches high.

O. tauricum (Golden Drop).—This, the best known of the genus, is also the most worthy, and in good condition is a striking plant. The plant attains to about 15 inches high when fully grown, though rarely seen more than half that height. In habit it may be regarded as more or less an evergreen perennial, of a spreading, tufted growth, and from which in spring issue the flower-stems. These are slightly branched, and furnish during May and June large clusters of drooping yellow and fragrant flowers that are singularly effective. Indeed, it is from the clear, pleasing yellow tone of the corolla that it has received the rather appropriate name of Golden Drop. This is undoubtedly one of the choicest of hardy flowers, better adapted, as a rule, for a well-chosen position in the rock-garden than anywhere else. Generally speaking, it is short-lived in the border and requires care in any position. Shade should always be avoided in its culture, and the plants, if possible, so placed that the tufts of leaves may rest on a sloping ledge of rock, so as to keep fairly dry in winter; a soil of lumpy peat and equally lumpy fibrous loam, with sand very liberally added (quite a fourth part), and charcoal dust to a like amount. This and a raised, well-drained position in the rock garden will do as much as cultural aids can do for one of the best hardy plants. Its propagation is a rather slow business at times, and must be done by means of cuttings, stripped off with a heel any time during May or early in June and inserted in very sandy soil (in pots preferred) without further ado. I never use a knife to a cutting of this plant. Given a thorough watering and left to dry for an hour, the frame should be closed and slightly shaded. With careful after-management the cuttings at this season root in about three weeks, and may then be potted off singly in much the same soil as recommended above. A cold-frame or handlight is much the best for its propagation. Native of Caucasus. J.

GARDEN PESTS.

THE WHITE WOOLLY CURRANT-SCALE (PULVINARIA RIBESIÆ).

In an article on scale insects in Gardening of the 22nd and 29th of February last year I

White woolly Currant-scale.

mentioned this insect without giving many details about it; being now able, through the kindness of Miss Ormerod, to give a very good figure of this insect, and of the way Currant-bushes are infested by it, I propose now to

Showing the destructive work of the scale. From a photograph.

deal with it more fully. It is very fortunate that it is to a certain extent a conspicuous insect, so that with ordinary care it should never, so to speak, get "a footing" in a garden; but if it does, then, like all its relations, it is a most tiresome pest to eradicate. Until about eight years ago this scale was unknown in this country—at any rate, as a garden pest—and now it has been noticed at several places in England and at various places on the east coast of Scotland. Not only are the Black, White, and Red Currants attacked, but also the Currant grown for its blossom, and generally spoken of as "Ribes." Miss Ormerod suggests that it may also attack the Mountain Ash. The young scale insects are hatched at the end of June or the beginning of July. They at once spread themselves about over the bush in search of suitable positions in which to settle down; having suited themselves they thrust their beaks or suckers into the bark and feed on the sap of the shoots, and they do not move again unless disturbed. When first hatched, and some little time afterwards, the sexes of the individuals are indistinguishable, but at a certain period the males form a covering over themselves and assume the chrysalis state from which the perfect males emerge in due course. The males, like those of other scale insects, are elegantly formed two-winged flies, with two long hair-like organs at the end of their bodies and six well-formed legs; the head is well defined and furnished with a pair of longish feelers and prominent eyes. The young females do not undergo any well-marked transformations like the males, but they gradually change in form from the insect depicted in Fig. 2, which is much magnified, to that shown in Fig. 1, which is little more than twice magnified. Having attained their full size they begin to lay their eggs in a mass, mixed with and covered with a cotton material (see Fig. 1), which gradually becomes drawn out into threads, as shown in the figure which is taken from a photograph. As regards the best way of dealing with this pest, if a bush is very badly infested by it the best thing to do is to pull it up and burn it. If such a drastic method of treatment is not necessary, the parts which have been attacked should be cut off and destroyed, and the remainder of the bush dressed with 2 lb. of hot lime to 1 gallon of water in the autumn. This mixture should be applied with a brush. The eggs and the quite newly hatched young are so protected by the cottony covering that it would be very difficult to make any ordinary insecticide reach them; and there is another drawback in their use, which is that it is difficult to know if every portion of the bush has been reached by the remedy, as there is little or no trace left to show where insecticides have been applied. The male scale I have already described as fully as is necessary. The female when full grown is about $\frac{1}{8}$ inch in length, and is nearly circular, very flat, and slightly raised down the middle, with a deep, narrow notch at the posterior, or tail end, and is of a reddish-brown colour. The mass of eggs varies in size according to the amount of eggs the female had laid at the time of observation. This insect very much resembles, and is very nearly related to, the Vine-scale. G. S. S.

Caterpillar on Calceolarias (*W. W.*).—The caterpillar you sent is that of the common Swift-moth (Hepialus lupulinus) or the Ghost-moth (Hepialus humuli), but I am not certain which, as they are so very much alike. As is always the case with caterpillars that live underground, it is almost impossible to destroy them by any other method than turning up the soil and picking them out. As soon as a plant is found to be attacked it should at once be taken up and search be made amongst its roots for the enemy. A heavy dressing of nitrate of soda, well watered in, would help the plants and be distasteful to the caterpillars.—G. S. S.

Earwig trap.—Following the advice you gave me for ridding a Tom Putt Apple-tree of earwigs by an application of paraffin, and then white liming the trunk, I think I am saving more fruit this year. In the early summer, to make a shady corner to sit in, I slung a curtain under the tree, tying it back to the latter when not in use. Every morning it is full of earwigs in every fold. So we put a bath of water under and sweep them in. If neglected for a few days they number hundreds.—Somerset.

White Jasmine.—No flower, perhaps, possesses a more grateful perfume than the common white Jasmine (J. officinalis) now blooming so freely on many a cottage front or porch. The dainty twigs of bloom are specially suited for cutting, supplying, as they do, their own garnishing, and none more beautiful or pleasing than its own elegant leaves.

INDOOR PLANTS.

BULBOUS AND TUBEROUS-ROOTED PLANTS IN BASKETS.

Many plants of this character are suitable for baskets. Well-grown and freely-flowered Lilies of the Valley would be serviceable in many ways. They would look very well hanging up, but not too high, or the effect would be lost. All that is needed in growing them in baskets is careful attention, a liberal supply of water being required. In making up baskets either single crowns or clumps could be used, the latter being of the two the better to depend upon. The imported clumps would need to have the bottom of the mass of roots removed; this could be done without much harm, if any. The baskets should have a surfacing of Moss, then a little rough soil, any spare space being packed in with the same after the basket is made up. A surfacing of Moss will then be needed to retain moisture and to prevent the centre from getting too dry. Watering is best effected by dipping into a tank, and thus thoroughly soaking the entire mass. In making up with single crowns more can, of course, be made of the room, but the foliage growth, in itself an ornament, would not be quite so good. This method of growing the Lily of the Valley commends itself as something fresh and should receive consideration. The Achimenes are also beautiful basket plants for summer use in moderately warm houses. These when grown in this manner also require a liberal supply of water. Another excellent bulbous plant for baskets is Lachenalia tricolor (and other varieties). Grown in this way this beautiful spring flower is most effective. There are also some few kinds of the Tuberous-rooted Begonias which make capital basket plants that will last for months in good condition. Triteleia uniflora is yet another instance; this, when in pots even, always looks best when above the range of vision, its foliage and flowers with their slender footstalks drooping over the sides of the pots. There is room for baskets in most houses; these need not always be of wire, for those made of wood or earthenware are very useful. A.

Tuberous Begonia as a basket plant.

HYACINTHS AND OTHER SPRING-FLOWERING BULBS IN POTS.

The spring-flowering bulbs that will be noted in the following cultural remarks may be termed everybody's flowers, because they take up but little room, and therefore persons with the smallest amount of glass accommodation may grow them equally as well as those with unlimited greenhouses. Nor is fire-heat absolutely essential, except for early forcing, so that even the cottager with the light given by an ordinary window may be successful with them. Not the least important of spring flowers is the Hyacinth, and, starting its culture with the small details, one must be provided with a stock of clean pots. I would use old ones in preference to those quite new, as the latter, unless soaked, are apt to dry the earth unduly. Forty-eights, or 4½-inch pots, are the most generally useful. I have tried Hyacinths for exhibition in a size larger, but have had equally fine spikes of bloom in pots the size named; it is therefore wise for the sake of economy alone to choose the smaller. The soil recommended is composed of rotten turf of a fibry character, broken up small, manure, preferably cow-manure, dried, so that it may be passed through a sieve, coarse sand or road-grit, the loam being in slightly the larger proportion. In this compost water will pass through freely, and a rich root-run is also provided. One might imagine that, as Hyacinths will grow in water alone, it matters little about having a soil that is porous; but the fact is, these bulbs require some care as to the quantity of moisture given when cultivated in pots.

Use the potting earth in an even state—neither sodden with wet nor dust-dry. It is advisable to mix the compost a considerable time before required, so that that desirable condition may be obtained. In potting, place one good-sized crock over the hole of the pot, then a handful of the rougher portion of soil; afterwards fill the pot and press down the earth moderately firm, then scoop out a hole with the finger in which to place the bulb. This latter item is of some importance because if we press the bulb and soil down together that portion under the bulb becomes so hardened that the roots, instead of wandering in the earth, will raise the bulb upwards and perhaps finally push it out of the pot entirely. Take care, then, to have the soil loose for the bulbs to rest on, and I may mention that about one-half of the bulb should be buried. A finish is made by pressing the soil down evenly in the margin between bulb and pot. When the compost is in the condition before mentioned watering immediately after potting is not required, but if the earth be at all dry one good soaking should be given. Stand the pots close together in any available space that is open—that is to say, free from the drip of trees. Put them on a sound bottom of ashes likely to prevent worms from entering the pots, then place an inverted pot of small size over each bulb. This detail is perhaps not essential, but it is done with the object of keeping subsequent growth clean; the covering material is apt to find its way into the centre of the new leaves and, maybe, rot the flower-spike. We next bury the pots, bulbs and all, with Cocoa-nut-fibre to a depth of 4 inches. The material named is light and clean; sand, however, will answer the same purpose, but, if possible, avoid a covering of ashes; the sulphur these contain has sometimes done mischief below. I would pot Hyacinths in September; if left much later roots will have started growth, and the bulbs are likely to deteriorate thereby. They may be left—forgotten, I might say—for about two months. I would at the same time advise that a covering of glass—in fact, anything—be provided in case of more than usual rainfall to guard against the earth in the pots becoming soddened. The object of placing the bulbs under ground, as it were, is to get them well rooted before top growth takes place to any extent. This item, to my mind, is the most important of all. Without a good supply of roots there is nothing to force the spike of bloom out of its bulb. The bloom is placed there by the previous season's growth, mostly in Holland, and we cannot alter its form, but by good cultivation we may develop each individual bell, and in the end obtain a spike of bloom apparently double the ordinary size. Extra large bulbs are not indeed desirable in producing fine spikes of flower; in fact, very large ones usually give more than one spike, which, for purposes of show at least, would be useless. Choose, therefore, medium-sized, firm, well-ripened bulbs to obtain the best Hyacinths.

Some time in November, then, we should examine the plants. Roots will be found plentiful, in some cases growing through the hole at the bottom of the pots, while the top growth will be about an inch high and the bloom-spikes visible. Such as these may be taken from their covering and stood in a cool-frame or greenhouse where plenty of air can be admitted. For a few days do not remove the pots which were placed over the bulbs; the change from darkness to light must be gradual. Hyacinths to be well grown must grow slowly, otherwise the leaves will advance faster than the blooms; the latter, too, will be wanting in substance, points against them in competition. Of course, such matters are not so important generally; most of us like to lengthen the period of flowering by gently forcing a few—Hyacinths will bear this—and retarding others.

Keep the plants well up to the glass at all times and give air abundantly. Do not water much in dull weather. I would, in fact, keep the soil on the dry side until the blooms push well up out of the bulb. Use rain water slightly warmed. After the spikes of bloom show colour growth is very rapid, and it is then we must develop them to their utmost. By this time we should have abundance of roots; all the stimulants necessary may then be given. Soot-water is excellent, but I have not myself used anything to equal sulphate of ammonia. This powerful salt should be given at the rate of an ounce to two gallons of water. Use it at every watering, which may now be often, for at the final period it is not easy to over-do Hyacinths with moisture at the roots.

The foregoing practical paper is by Mr. Shoesmith, and read before the Woking Gardeners' Association.

Rampion as a border plant.—This is generally grown as a vegetable, and most useful it is for salads if used in the same way as the

Radish. But it is as a useful border plant that I now write of it. Seed should be sown early—say April or May—and the plants pricked out where they are to bloom, or sown broadcast, thinning out the seedlings, using what is needed for salad, and the remainder planted out in positions for blooming early in the year. I first saw this grown in this way many years ago when in a large garden in Norfolk, and I remember many of the spikes were from 3 feet to 4 feet long. The flowers are blue. I use it in this way in this garden, and find it very useful for cutting from.—J. Crook.

CHRYSANTHEMUMS.

Early-flowering Chrysanthemums (*T. C.*).—We think it would be a great mistake to disbud your early-flowering Chrysanthemums in the open border, except in the case of some of those more free than others, and where there are too many buds to develop without undue crowding. For producing a mass of colour in the open border you will find these plants far more useful than many of the dowdy-coloured, hardy-flowering plants, and if provided with a good stout stake, and the growths neatly and not too tightly tied to this, you will have a display that will please you immensely. Yes; Madame Marie Masse certainly does appear to be somewhat early this season; in fact, we have just seen a few very pretty flowers of this fine variety in the open border. Our knowledge of this sort, and, in fact, several others, only goes to prove that those fond of a display in the garden during the late summer and early autumn are missing one of the best subjects for this purpose when they fail to include a batch of these plants in their selection. Flora is a yellow Pompon, and is one of the first to flower. When given a generous treatment this old variety gives a handsome return. It is largely grown for market. You are doing better, however, by giving more attention to the Japanese sorts. You should add to your list: Harvest Home (crimson and gold), M. Dupuis (deep yellow), and François Vuillermet (pale blush-rose), each of which are invaluable for outdoors, and to assist to keep the garden bright and cheerful a little later.

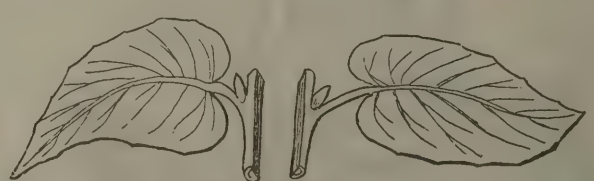
Chrysanthemums—cause of shoots becoming malformed (*J. R. H., Clapton*)—Your plants are not in the least peculiar in this respect, the cause of the points of your shoots heeling over in the way you describe being generally ascribed to the attacks of a small fly, known to most Chrysanthemum-growers as the "jumper." These insects appear to have a weakness for boring or splitting the tender green stem near the apex of the growth, thus causing it to bend over, and generally rendering the whole stem utterly useless for producing exhibition flowers. Of course new lateral growths will afterwards appear, but these are too late and generally comparatively weak for producing flowers of exceptional size and beauty. To check the depredations of these insects it is a good plan to repeatedly dust the shoots with Tobacco-powder, as this certainly renders the surroundings very distasteful to them. A very celebrated amateur recommends growers on every occasion when inspecting the plants to pass the hand lightly over them, in this way disturbing the marauders and thus often avoiding the evils resulting from the attacks of this insect when left undisturbed. They invariably "jump" when in the least disturbed, and are often difficult to catch. A good plan, however, is to watch for the insect to jump and see where it alights, as they appear to get exhausted as the result of the jump, and are then fairly easily caught. It is worth the trouble to remove the evil in this way. The "jumper" is a small brown fly, about a third of an inch in length.

Chrysanthemums—when to retain the buds (*J. T. R., Woolston*).—The crown-buds of each of your plants should be retained, but in several instances the second or late crown-bud would probably give better results than those flowers developing from first crowns. It is difficult to advise you at this season, as we do not know in what sort of condition your plants are. You state they are mostly now running on for the "crown-bud after making their first break." If your plants are in a forward condition and are also strong in their root action we should be somewhat disposed to send the following sorts on to the second or late crown-bud: Phœbus, Souvenir de Petite Amie, J. Agate, M. Georges Biron, Miss Elsie Teichmann, Australian Gold, and Duke of York. If you can accurately gauge your plants and think they will probably produce their buds between the second and last week in August by all means retain such buds, as that is about as good a period as possible in which the buds should be selected. In any case, retain first crown-buds of Col. C. T. Bourne, Duchess of Wellington, Directeur Tisseraud, Lady Ridgeway, Mons. Gruyer, Miss Maggie Blenkiron, Mons. Pankoucke, and Mrs. H. Ford Hillier. We can advise you much better early in the season, as by special treatment plants can be assisted to produce their buds earlier than they would do naturally, thus enabling the grower to avoid the production of coarse and unrefined blossoms, such as are often characteristic of first crown-buds.

PROPAGATING.

BY BUDS OR EYES.

There are many subjects that can be easily and numerously increased by this process. Even the Rose is open to propagation in this way, but as there are other and better methods in the case of Roses and several other plants the practice is not much adopted. Such plants as Bouvardias, Deutzias, and others which make sucker or root-like growths with eyes, can be cut up in the way illustrated. The Wineberry and Mayberry are good examples of plants eminently suited for this form of propagation. Simply cut out the eyes as shown, insert in a sandy compost, leaving the bud or eye just peeping above the surface, and, where possible, keep them close for a short time. In some cases no leaves will be attached to the eyes; but a leaf often causes quicker callus and root action. As far as possible select eyes or buds that are about three-parts ripened, and if a gentle bottom-heat can be afforded so much the better.



Buds for propagation.

THE AUTUMN PROPAGATION OF BEDDING PLANTS.

Several queries have arrived of late asking for information upon the increase of "Geraniums," both Ivy and Zonal-leaved; also Heliotropes, Calceolarias, Fuchsias, etc. An illustrated note upon Zonal Pelargoniums was published lately, but we now give fuller information dealing with several subjects. Zonal Pelargoniums can be rooted at any time until end of September; the best period is from now until the end of August, and by taking a few as occasion offers we can have a fairly good stock. When the plants are lifted from the bed cuttings of growth that are not too succulent can be rooted under cover. As a rule, however, it is best to pot up thickly, or even put several plants into a box and stand upon a rather dry bench. Within the following two weeks pick over all decaying leaves, and store in a frost-proof house where light has direct access to the plants. Early in the year every shoot of growth can be rooted with certainty, only needing a light and sandy compost, with the aid of a very slight heat. Such plants will make good subjects for bedding out the ensuing summer.

Fuchsias should be rooted at once. Take off small points of young growth and keep them moist and close beneath a cloche or bell-glass. Old plants may be lifted and treated similarly to the Zonal Pelargoniums, except that they can stand beneath the greenhouse-bench when partly ripened. In our issue for March 27 we gave full instructions upon their propagation. The Heliotrope needs rooting now, and if the older plants are lifted and grown on in a warm greenhouse many pleasing trusses can be secured during the winter months. The form of increase is similar to that of the Fuchsia. Calceolarias had better wait a while longer, and when quantities of young shoots form after the bloom is past, take off these in the same way as for Fuchsias and insert in a sandy loam, using any old frame or cool pit, sprinkling the cuttings well, and keeping them close and shaded for a couple of weeks or so. Do not coddle these, and insert them in the frame-bed 3 inches apart each way. The slips must be of soft, succulent growths or they will not root.

A few plants of Lobelias may be cut down as soon as their bloom is past. Place a little sandy loam around and among the crowns. Early in September lift these, pull them to pieces, and pinch off the small portions of young growth into shallow boxes or pans. You will find plenty of pieces with new roots already formed. Stand in a cool greenhouse or frost-proof frame, keep fairly moist, and early in February you can once more cut each into from six to twelve pieces, again pricking off into boxes or potting them up singly. Cuttings have a great advantage over seedlings in that they flower in a mass and are more compact, but seedlings continue longer in bloom.

Carnation Granadine.—Amongst the many useful flowers for filling the flower-basket in July this Carnation can claim a foremost place. It may be had in several shades of colour, but to me bright reds are most effective. Its chief recommendations are its free growth and the easy way it can be raised. I consider it everybody's Carnation. Our method is to obtain a packet of seed every year, sowing it in a box in March or April, placing in a frame to germinate. When strong enough the seedlings are pricked off and planted out in their permanent positions in July. In this way a grand mass of bloom is got the following year. When over we destroy the plants. This year we have not 5 per cent. single kinds.—J. Crook.

Seedling Carnations.—I enclose a few blooms of seedling Carnations for you to see. They are from some seed I saved myself and sowed last season. There are only about 10 per cent. of singles, and another 10 per cent. of large flowers that burst too much to be of much use. The plants are very vigorous and strong, and though our soil is not at all naturally suitable for Carnations, and the water is very bad, many of them have thrown from 100 to 200 blooms apiece, and some more than this, one affording as much cutting as ten to twenty layered plants of named sorts. Those sent are not the best blooms, these being now nearly over.—B. C. Ravenscroft, *Chichester*.

*** A very fine gathering of flowers, from apricot to pure white.

Tufted Pansy Violetta.—A fine plant for margins to beds and long borders is this variety. It belongs to what is known as the miniature section, the size of the blossoms generally being less than 1½ inches in diameter. The blossoms are pure white, with a free suffusion of yellow on the lower petal, and the flowers are also very fragrant. They are of dainty form, and freely produced on a dense and compact carpet of tufted growth. The constitution is robust.—D. B. C.

Tufted Pansy Ardwell Gem.—This old sort is now very charming. The cooler weather suits its requirements. It has a fine creeping habit of growth, the flowers of rich sulphur-yellow, standing out prettily on long foot-stalks on a carpet of rich green growth. It is still one of the best sorts for bedding.—D. B. C.

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BEGONIA SEMPERFLORENS.

As a bedding plant this is of much value, as it is very free-flowering, and is of a good habit. Like other bedding Begonias, it is half-hardy, so that it requires to be removed to a warm and dry position during the winter months.

PROPAGATING.

The quickest and easiest way to propagate is from seed. If sown towards the end of February, or even the beginning of March, a large stock may be got before planting-out time. The seed should be sown in shallow pans well drained, with a mixture of finely-sifted loam and leaf-soil (or even peat), with almost an equal proportion of sharp sand. Press the soil evenly down, but not too hard, and sow the seed evenly over the soil, but care should be taken not to let the seed drop in patches, as this induces weakly growth. When sown, a little sand should be sifted finely over to prevent the seed from being washed into one place. Use a fine rose. The pans should be placed in bottom-heat, in a temperature from 75 degs. to 80 degs., and covered with a piece of glass to keep close. When the seed has germinated, the glass should be removed and the pans placed on a shelf close to the glass in a warm-house.

POTTING.

As soon as the seedlings are large enough to handle prick them off into pans or boxes, allowing 1½ inches to 2 inches apart. The same mixture of soil should be used as at the time of sowing. Replace back in a growing temperature close to the glass. Towards the end of April the plants will be large enough for potting, but they should not be overpotted. A 60-size pot is large enough for the first potting, as there is just time for them to fill the soil with roots before bedding out. When potting, the soil should be of a fibrous condition, and with less sand. A close frame is most suitable for them now, as they should be close to the glass. Care should be taken with the watering for a few days till the plants are established, otherwise dampness and rot will appear amongst them.

HARDENING OFF.

During the second week in May the plants should be well established, when give a liberal supply of air day and night, and a week or ten days before the time of planting out the lights should be removed entirely to have the plants well hardened before bedding out.

PLANTING OUT.

Begonia semperflorens is not so widely known as most of the bedding varieties, but it is of great value, for it is useful for planting by itself, or for the sub-tropical and herbaceous beds. It is best, however, when mixed amongst other dwarf-flowering plants. It has a good constitution and will do well, even in unfavourable seasons. Before planting the beds should be prepared by digging in some well-decayed manure, or even leaf-soil if manure cannot be obtained. The soil must be broken to pieces when digging, and afterwards raked over evenly. After planting the soil must be kept moderately moist to induce the plants to root quickly, and should the weather be very dry and the plants small attend regularly to the watering. The best time of the day to water is during the evening if the weather is hot, as moisture is retained.

PRESERVING THE PLANTS IN WINTER.

In October, when the flowering is over, take up the plants, the smaller ones being placed in a box with leaf-soil or sand, and the larger ones potted up into 5-inch pots. If desired, these may be kept growing throughout the winter by keeping them in a warm-house, and they will make very fine plants by the following spring. They come in useful for the conservatory if a little special care is taken in watering, as they will quickly damp off if watered excessively. The smaller ones in boxes, when dried off, may be placed in a dry position till the spring. When they commence to make a start, pot on into 3-inch or 5-inch pots, using the same soil as before. If an increase of stock is desired, divide the roots and pot. Afterwards grow on the same as in the year previous. W. J.

Gentiana septemfida.—This is a beautiful kind, and said to bloom best in a somewhat shady situation. At the present time it is flowering freely in a sunny place on a south border. The soil is a free loam. This class of Gentian does not like to be often disturbed at the root. This grows about a foot high when doing well. G. cruciata is another of this type, but not quite so tall. When blooming on a light soil in north Hants this latter kind thrived well on a sunny border. It grew into a mass nearly 2 feet across.—J. CROOK.

Carnation La Vilette.—It is, I think, safe to predict a large measure of popularity for this Carnation. In colour and form the flowers differ from Carnations generally, and the growth is vigorous, the plants making plenty of "grass," so there is no difficulty in working up a stock. The mixture of buff and pink is very novel and pleasing. The flowers are not unlike some of the Japanese Chrysanthemums.—BYFLEET.

The deciduous Cypress (Cupressus disticha).—My brother saw a tree of this in Mexico, 154 feet around the trunk, 6 feet from the ground.—J. B. ROGERS.

HOUSE AND WINDOW GARDENING.

WHITE PINKS AS CUT FLOWERS.

THE Pink is a dainty June flower for cutting, and the accompanying illustration shows its beauty when arranged in a simple vase, without another flower for association. The illustration

Pinks in a vase.

needs no lengthy description. It tells its own tale of a pretty garden flower arranged in a pleasing way.

ORCHIDS.

Dendrobium Lowi.—A small plant of this rather delicate Dendrobe is in flower, and very pretty are the pale yellow, long-spurred blossoms. They occur on short racemes at or near the top of the pseudo-bulbs, each being from 1½ inches to 2 inches across. This species requires careful treatment and considerable heat and moisture while growing. It may be planted in small pans or baskets or firmly wired to pieces of Tree Fern stems, but in all cases it is wise to give a thin layer of compost only, otherwise many of the roots will die in the winter, this weakening the plants of course. It may be grown in the East India-house, and if seen to be inclined to rest in winter may be put in the Cattleya-house for a time, but it is not at all unusual for it to grow nearly the whole year round.

Cattleya crispa delicatissima.—This is one of the most delightful Orchids now in bloom, the white sepals and petals and rosy markings on the lip having a very delicate and refined appearance. The flowers lack the width and substance of those of many other Cattleyas, but this hardly detracts from their beauty. It is rather a tall-growing plant, bearing a long narrow leaf on each pseudo-bulb, and the spikes produce six or seven flowers each about 6 inches across. It does well under ordinary Cattleya-house treatment and should be well grown during spring and summer and kept dormant during the winter months. C. crispa is a very old species, and this and all the varieties are natives of Brazil.

GARDEN WORK.*

Conservatory.

Freesias which have been thoroughly rested should be repotted for early-flowering. Put eight or nine bulbs in a 5-inch pot, and stand outside for a time till some growth has been made, but do not plunge the pots overhead, as it draws the plants up too much, and to get an abundance of fine flowers the plants must be strong and robust, and the bulbs should not be kept too long out of the ground. I have known more than one instance where bulbs, potted late out of the same bag from which the early batch was taken, proved very inferior—a clear proof that early potting is best. The pots for late flowering can be kept outside as long as possible, and afterwards moved to cold-frames, and taken to a warm greenhouse a few at a time as required. Roman Hyacinths and other early bulbs should be seen often now, and some potted as soon as they arrive and plunged in ashes or Cocoa-fibre for six weeks. The conservatory should have abundance of ventilation now on calm, warm days. All the air possible may be given with advantage, and a considerable portion left on all night, but when windy and wet take off most of the air. Permanent plants in the border will take a good deal of water now, and a little weak stimulant may be given with advantage. If nothing better is at hand, tie up a peck or so of soot in a bag and sink it in a tub, and use a little of the soot-water in each canful. And this soot-water, when clarified with lime, is a good insecticide and mildew destroyer, and half-pint or a pint may be placed in each pot of syringing water for Azaleas and other plants liable to thrips and fly. The days are shortening, and it will soon be necessary to think of reducing the climbing growths when they are allowed to get thick in summer. Tropæolum Fireball is a bright, showy thing in winter; may either be grown in pots or planted out.

Stove.

Almost everybody now grows a few Orchids; Dendrobium nobile, Cypripedium insigne, and others, are not difficult to grow or expensive to purchase, and after growth is completed may be moved to a drier atmosphere to ripen the growth. They will do now in the vinery for a couple of months. Begonia Gloire de Lorraine is a very pretty winter-flowering kind of dwarf bushy habit, producing very freely large trusses of rosy-carmine flowers. This is one of the best winter-flowering kinds, and should be in every collection. Epiphyllums should be in a cool-house, ripening, in order to flower freely later on. Will not require so much water now, but must not be dried too much or the growth will shrivel. Eucharis Lilies for winter-flowering should now receive cooler, drier treatment to rest the plants and prepare them for the great effort later. When it is desirable to start them again, give a good soaking of liquid-manure, and once or twice a week afterwards till the flowers are opening. Gardenias will now be resting in a lower temperature, and only shaded sufficiently to preserve the dark-green colour of the foliage. Propagate Gloxinias, Begonias of the Rex section, and Saintpaulias from leaf-cuttings now. Keep close and shade. Fires need not be used in stove now till the weather changes again.

Winter Cucumbers.

Where there are several houses one may be planted now and another in October. In December the houses planted first may be cleared out and planted again to come in March. It is better to set out young plants than struggle on with old ones in a more or less exhausted condition. Use a good proportion of good loam in the compost when planted in very light stuff. They make a lot of growth in the latter, but the growth is lacking in firmness, and the fruits will not come so large. Take them on quietly for a time now without much fire-heat; none at all on bright days and warm nights.

Tomatoes for Winter.

Very strong, vigorous plants set out now will give a good return in winter. Ham Green Favourite is a good winter sort in a light house with a temperature of 65 degs. at night. This house must be well ventilated, a little air being left on at night, except when wet and cold or frosty. Do not crowd the plants. If planted in a single line along each side of a span-roofed house running north and south and trained near the glass, good results may be expected. Fertilise the blooms when the pollen is dry, and allow no check for want of moisture. Really good loam very slightly enriched is the best soil for winter work. Top-dressing may be given after the bottom bunches are set and swelling.

Orchard House.

The result here will be in proportion to the care given and the condition of the plants at the roots. Keep all young shoots pinched back now. A rich top-dressing on the surface of the pots containing Peaches and Nectarines will be better than too much liquid stimulant. To give flavour there must be abundant ventilation, and when nearly ripe reduce the water supply a little. Too much water spoils the flavour.

Vineries.

If the roots are healthy, it is next to impossible to overwater inside Vine borders whilst the Grapes are swelling rapidly, and the water contains some stimulant. Ichthemic guano, With's or Clay's Fertiliser, Patent Silicate, nitrate of soda, or anything else for a change in moderation, or say 1 ounce to the gallon of water. We generally scatter the manure over the border and water it in with the hose.

Cold Frames.

These are now in most places being rapidly filled with winter-flowering stuff—Cyclamens, Primulas, Cinerarias, Begonias, Poinsettias, and other things useful for winter.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Window Gardening.

If any plant wants a larger pot let it have a shift now, so that the pot may be partially, if not quite, filled with roots before winter. Cactuses should be placed outside to ripen, also Scarborough Lilies. Pot Roman Hyacinths and Freesias.

Outdoor Garden.

A good soaking of liquid-manure will be useful to Roses and many other things, especially Phloxes, Dahlias, Hollyhocks, and Asters. A good many complaints have reached me of Carnations doing badly—not making much "grass." Our own plants are doing better than usual, and we attribute this to more pains being taken in the preparation of the beds, as we have not been able to give them any water during the dry weather; but we shall try to keep the layers moist till roots have formed. Cuttings of Ivies will root now in a shady border if kept moist. Honeysuckles also and Clematises will strike now, but the last named should be dibbled into sandy compost under glass, and kept moist and shaded if necessary. Cuttings of any other choice evergreen will strike now under glass; the Golden Euonymuses, Escallonias, Berberis stenophylla, and any other good evergreen, will strike now in cold-frame kept close. Sow a few seeds of hardy annuals for spring bedding; these should include Silenes, Clarkias, Godetias, Candytufts, Saponaria calabrica, Limnanthes Douglasi, Forget-me-nots, etc. Iceland Poppies and Coreopsis grandiflora and lanceolata should be treated as biennials and sown annually. If the weather continues dry soak the ground first and shade till the seeds germinate. To get Canterbury Bells strong enough to flower they should be transplanted; they are usually poor things if left in the crowded seed-beds after they are large enough to handle; and this applies to all biennials and perennials. There is not much trouble to keep down weeds now if the hoe is used freely.

Fruit Garden.

Good Strawberry-runners are not too plentiful. The best runners are obtained from young plants, therefore a new bed should be made annually. The best course is to divide the Strawberry land into three parts, one part to be destroyed annually, and an equal number of plants set. Three years will thus be the utmost limit of duration, which on most soils is long enough. Where pains are taken in raising the young plants early, annual planting is a success, the plants going on to fresh land every year, and this makes a good rotation for other crops. Peaches on open walls are now ripening, and with so much bright sunshine the fruit ought to be well coloured. Dymond is a grand Peach, both inside and on walls outside. In dry soils Peaches on south walls will be small unless well watered during the season of growth, but the watering should be discontinued when the fruit begins to ripen. There has been a good deal of blister where the trees have been exposed to cold winds during the spring, but they will be growing out of it, and every encouragement should be given to the young wood, and training thinly, so that the ripening may be completed in good time. The young growth of pyramid Pears, Plums, and Apples should be thinned, but no leaders should be shortened. Thin the fruits also if the crop is heavy. Pears are doing well, but other fruits will not require much thinning—at least, in our district. Remove laterals from late Grape-Vines till the fruit is fairly on for colouring; afterwards a little more freedom may be permitted. Inside borders must have abundance of water in this bright, sunny weather; and if outside borders are not watered the roots will run down. Wash Peach-trees under glass as soon as the fruit is gathered, and moisten borders.

Vegetable Garden.

Sow Spinach, Tripoli Onions, and others. White Spanish if desired may be sown and transplanted in February. In gardens where the maggot is troublesome autumn sowing is desirable. Turnips for winter, Lettuces, and Endive: several sowings should be made to ensure plenty of plants. This is the most important sowing of the season, as the period to be covered is a long one. Plant out Cucumbers in warm-house for autumn and winter bearing. Earth up winter greens, such as Broccoli, etc. Thin Turnips to 1 foot apart. Plant out Endive and Lettuces, giving each plant 1 square foot. The dry weather has been too much for the early Cauliflowers, especially where no provision has been made to meet drought. Every man knows his own soil best, and in dry, porous soils some expedient to help plants over a dry time should be adopted. The best is to plant in trenches and mulch with manure. As Early Potatoes are cleared follow with some other useful crop. Give a little manurial dressing of some kind with each crop, but change the crop often. Pick off all surplus growth from Tomatoes, both under glass and outside. Thin the foliage a little at the bottom, but not too much.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 9th.—Sowed Giant Rocca Onions, also White Lisbon and White Spanish. Shifted early struck plants of Hydrangeas into 5-inch and 6 inch pots. Commenced propagating bedding "Geraniums." All are struck outside. Soft things, such as Heliotropes, Verbenas, etc., are struck under glass and kept close except for about an hour in the morning. We have had little or no Potato disease for several years. Seed-tubers are carefully selected at digging time.

August 10th.—With reference to last note about Potatoes, the earliest and second earliest have been lifted, and the ground is being prepared for other crops, including Strawberries, which follow early Potatoes so well where the land is well prepared in winter. Put in cuttings of Fuchsias and White and Yellow Marguerites. Pricked out seedling Pansies. These should have had attention sooner, but we have been waiting for rain.

August 11th.—Looked over outside Tomatoes to remove side-shoots and stop leaders. All the leaders of Tomatoes have been stopped in cool-houses. We want the houses for Chrysanthemums in October. Pulled up a number of old Peaches in a span-roofed house. Young trees fill a house so quickly that it is a waste of time to grow on old trees which are past their best.

August 12th.—Shifted into 5-inch pots a number of young plants of Azaleas, Grevilleas, Dracænas, etc. Moved Camellias to shady spot outside for a few weeks. Gathered seeds of various choice flowering plants, and put in cuttings of several things. A bed is always kept ready to be filled with something useful during this month and next. Sowed intermediate Stock in frames.

August 13th.—Sowed Winter Spinach, Bath Cos, Hicks' Hardy Green Cos, and All the Year Round Cabbage Lettuce. Removed old wood from Raspberries and tied up the autumn-bearing Raspberries. Sowed Early London, Walcheren, and Autumn Giant Cauliflowers. Earthed up winter greens. Gave a soaking of liquid-manure to Violets intended for framing. Took up spring-sown Onions.

August 14th.—Sowed more Turnips. Shifted Cinerarias and Primulas into flowering pots. Sowed a dwarf early kind of Kidney Bean in pot from which Melons have just been removed. Planted out more Lettuce and Endive. Finished budding standard Roses. Put in a lot of cuttings of hardy edging plants, such as Santolina incana, Euonymus radicans variegatus, etc.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them*

1259—**Growing Musa Ensete and Phormium.**—Would some reader who has had success in the raising of Musa Ensete and Phormium tenax from seed tell me if they are difficult plants to raise? I have had seed of both in strong bottom heat for about ten weeks, and should like to know if there is any chance of the seedlings appearing, as I am desirous to get some plants of both?—Lee.

1260—**A fine Gladiolus spike.**—Being a grower of Lemoine's Hybrids, I am desirous of knowing the largest spike of bloom that has been produced? I have at present a spike with twenty-four bells on it, and it is 22 inches high, and will probably reach 30 inches when fully developed. If you can oblige with an answer from your numerous readers you will oblige a supporter of Gardening. The finest spike that I have heard of bore twenty-one bells. —Alf. Brummett, *Anglesea-road, Plumstead.*

1261—**Candle-plant.**—Will you please give me a little information about the Candle-plant, as to soil, temperature, etc., required; also as to where it is a native of? I should be glad if you could describe its appearance and bloom. My plant is simply a number of trunks, like small Cucumbers, with leaves growing out of the sides of a light-green tint. I have for some years found the information given in your paper extremely useful.—W. E. M.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1262—**Carnation flowers streaked white** *(W. H. C.).*—This is caused by thrips. Many of the exhibition flowers were injured by this pest. Fumigate with Tobacco-smoke to kill them.

1263—**Fungus** *(A.).*—The fungus is Agaricus rachodes; it belongs to the edible series The best examples grow in pastures; those from woody places are considered less suitable for the table.

1264—**Soils for Rhododendron** *(E. M. B. Abbey).*—The soils are not very good for Rhododendron growing—too thin—but would be excellent if some good loam could be mixed with them. You might, however, try the Rhododendrons, as yours is a very suitable climate for them, we should think.

1265—**Repotting Carnations** *(C. D.).*—Carnations grown altogether in pots should be repotted in the spring after flowering. If taken up from the open border they should be potted in October. A compost of three parts fibry loam, one part of half-decayed horse-manure, and sufficient sharp silver-sand to keep the whole porous is all that is necessary.

1266—**Tomato-leaves curling** *(W. A. B. Jones).*—The shape of the leaves may be consistent with the variety. You do not give its name. If not, we suspect you have given the plants too much water, and possibly overdoses of stimulating food. Cease this entirely for a week or so, and give clear water in sufficient quantity to prevent the leaves flagging. Allow the plants to grow away at will without any pruning at all.

1267—**Flowers for grave** *(T.).*—On such a small place it will be impossible to have as much as you desire, and we do not think a glass structure would be nice or of much use. The best way would be to cover the grave with Mossy Rockfoils and to let a few simple flowers come through, such as Snowdrops and White Narcissi, or any others that you fancy. If there are railings around, a garland of Honeysuckle or Wild Rose might be added.

1268—**Begonia Martiana gracilis** *(B.).*—This is a distinct Begonia, habit tall and erect, usually producing only a single stem to nearly 2 feet high, and furnished at intervals with leaves of medium size. The pretty salmon-pink flowers appear on short peduncles from the leaf axils—a very distinct characteristic. In this species bulbils that may be sown after the manner of those on the stems of some Lilies are produced from the axils of the leaves.

1269—**Currant-leaves dropping** *(North and South).*—The Currants exhibit a lack of vigour both in the fruit and the wood. If it is not a poor variety the soil is deficient in nutriment. Drought would make the leaves fall. Fork up the soil a couple of inches deep about the trees, and mulch 3 inches thick with half-rotted manure, then give a thorough soaking with water. In October dig in about the roots more manure, and thus force the trees into stronger growth next year.

1270—**Hybrid Calceolarias** *(W. S.).*—A sunny greenhouse is not at all suitable at this season. If you cannot give a cold-frame, stand upon the north side of a wall, and keep the bottom of the pots cool and moist. Look out for slugs and other insects, do not allow the plants to get dry, sprinkle overhead on dewless mornings, and should red-spider appear move to a box or frame, and afford a gentle but prolonged fumigation. They must not have too much midday sun, or a dry atmosphere now.

1271—**Carnations affected with spot** *(Denison)*—I have had a good deal to do with spot on Carnations, but have always conquered it by picking off the diseased leaves. "E. B." does not give definite instructions. He says sulphate of copper should be used with discretion. It would be better to say to what extent it ought to be diluted. I always manage without using any mixtures on my Carnations. The plants should be put out in deep, rather open well-drained soil. Plant firmly, and in an open position. I could always grow the old Clove well, even in a moist district in Scotland. The plants should be layered as early as possible, and they ought not to be overcrowded. Plant them out in the open ground early in October. Overcrowding, damp, undrained soil, and a bad position in the garden have much to do with the spread of "spot."—J. D. E.

1272—**Varieties of Apricots** *(Fruit).*—There can be no doubt that the popular and highly-flavoured Moorpark is more prone to injury and decay from inclement seasons than other sorts. Hemskirk is one of the best all-round varieties in cultivation; it is very hardy, and the least liable to branch-withering of any. The fruit ripens fairly early in the season, although not so soon as the Large Early, another hardy and valuable kind, with melting flesh and most distinct flavour. Oullin's Early Peach is true to name, and is probably the most reliable sort to plant for fruit for dessert, and this may be duplicated by Breda, a medium-sized fruited variety, also ripening early, and although lacking first-class dessert quality is most useful for tarts and stewing. Breda in favourable districts succeeds in the open as a standard. Shipley or Blenheim, which belongs to the early season kinds, has been extensively planted of late, its character being that of a good all-round Apricot, which seldom gums, even where the soil is not so warm and porous as desirable.

1273—**Musa Cavendishi** *(Amateur).*—There are perhaps many and various reasons for the somewhat rare occurrence of the fruiting of Musas, some of which are doubtless the amount of space required under glass for their accommodation, and the great heat that must be accorded them if the fruiting is to be in any way successful. To these and other reasons is due the fact that fruiting examples are usually only seen in very large gardens and where ample space is at command for their accommodation. It can scarcely be said of these (as of some tropical, heat-loving subjects that they are difficult to grow, for, on the contrary, they are among the easiest, provided the two great essentials (heat and moisture) are at command. Indeed, these are their chief requirements, particularly so during their season of growth, for, as a matter of fact, much of the success which is achieved in the culture of these noble habited subjects is really due to sustaining a high temperature from the moment the sucker is planted till its gigantic inflorescence has issued from the summit of its trunk-like stem and the fruits developed to their full size.

1274—**Making borders for perennials** *(Miss Darbyshire).*—The advantage of autumn planting of perennials lies in the fact of their being able to make some little root progress before winter sets in. Unless it can be done by the early part of October we would prefer leaving it until the most favourable time in February, especially as you have the ground cropped now. Do not use Bourbon or Provence Roses for your arches. The following are a dozen grand varieties of different colours, hardy, free-flowering, and good in every way: Félicité Perpetue, Mme. Alfred Carrière, Reine Olga de Wurtemberg, Aimée Vibert, W. A. Richardson, Blairi No 2, Waltham Climber No. 3, Fulgens, Crimson Rambler, Pink Rover, Rêve d'Or, Mme. Chauvry, Kaiserin Friedrich, Emily Dupuy, and Comtesse de Bouchard. Plant these at the same time as the perennials and manure the ground well. There is nothing better than General Jacqueminot for the back of your La France; it is Perpetual and very sweet scented You do not say whether your wall is occupied or not, nor how high you wish the plants to grow. There is such a variety of subjects that we must ask you to repeat this part of your query.

1275—**Soils for potting** *(C.).*—There are but few places in the kingdom where an adequate amount of good material can be procured for potting. Where difficulties exist, and they are by no means uncommon, the present is a good time to procure the necessary supply. This should be stacked in a heap, putting one layer of turf, then another of fresh stable-manure. If this be done while the turf is still dry, the ammonia in the manure will be the more readily absorbed by the soil. We read a great deal about good turfy-loam, but this is an article seldom seen in some gardens; still, good crops of fruits are procured.

Where the soil is naturally heavy it takes a considerable time to get maiden loam from such pastures in a workable condition, and where this is used for Vine borders without previously being specially prepared, the roots do not so readily take hold of it, for when the fibrous portions are gone the remainder settles down into a hard mass, and as it is impossible to loosen such, owing to the roots, very little progress is made, and in the course of time the Vines perish. If soils are properly prepared there would be but little danger of such taking place, and in my opinion no better time could be found for getting the materials together than the present.

1276—**Verbena venosa** (*Park*).—This hardy Verbena has close heads of purplish blossoms that come in great profusion for a long season. It is a good plant for permanent beds, and an excellent subject for edgings to large beds. The plant has been in full flower for some time past.

1277—**Late Vines** (*P. R.*).—When the canes have reached the top of the trellis they should be stopped. The border must be kept in a proper condition as regards moisture. Surface dribblings do more harm than good, for if root-action is to be encouraged the whole border must receive attention.

1278—**Rhododendron Princess Frederica** (*J. R.*).—This is one of the many charming greenhouse varieties, a selection of which should be grown in all gardens where glasshouses abound. The flower-trusses of this kind are of good size and of a distinct yellowish-buff tone that is very pleasing.

1279—**Teucrium montanum** (*Hardy Flower Lover*).—This is a pretty and free-flowering rock plant, with numerous pale yellow blossoms on dwarf, dense carpets of leaves, that cling quite closely to the stones. The above has grown and flowered quite freely in a dry spot with very little notice; indeed, it is suited to dry positions and a rather poor soil.

1280—**Pot-Vines for early forcing** (*Inquirer*).—These should be exposed to the open air as much as possible, and where the lights cannot be removed the Vines should be carried out and stood in a sunny position, taking care in doing so not to injure them in any way, as the least twist would cause serious damage. The canes should be made secure, that they may not be rocked to and fro by the wind.

1281—**Erigeron mucronatus** (*T.*).—You are quite right about this plant, and your specimen is correctly named. It is a charming little plant with coloured blossoms almost Daisy-like in character, but of a pink-red hue, and afterwards nearly white. The plant is often met with under the name of Vittadenia triloba, and makes an excellent summer rock plant, of easy culture and spreading quite freely. In a large group 2 feet or more across there are always several shades of colour that make it both interesting and pretty.

1282—**Zephyr-flower** (Zephyranthes Atamasco) (*V. R. T.*).—The Zephyr-flowers are rather tender and must always have a sunny situation and light soil. Z. Atamasco, the one which you write of, is a capital plant in partially moist places, and may be made quite content in the drier parts of the bog garden or in spacious pockets in the rock garden where a fair depth of moist, fairly rich soil is at hand. The plant increases rapidly at the root, and for this reason should be divided and replanted every three or four years. There are so few plants of like character in the hardy plant garden just now that its presence is the more welcome.

1283—**Treatment of early Peaches** (*Anxious*).—In order that the foliage may be maintained fresh as long as possible, plenty of air should be afforded both day and night. With bright sunshine the borders are apt to get dry and the foliage infested with red-spider. To prevent this troublesome pest from doing much mischief, see that the trees are washed occasionally, and that the border is kept moist. Many of the evils attending early-forced trees may be traced to neglect after the fruit is gathered. When the borders are allowed to become too dry the leaves fall prematurely, which is often the cause of the buds dropping when forcing commences. With later houses from which the fruit has been gathered every precaution should be taken to keep the foliage healthy, as it is only by so doing that the buds can be properly developed.

1284—**Vallota purpurea** (*A. R. T.*).—It would be hard to name a more beautiful plant for the decoration of the greenhouse or conservatory during the autumn months than this. It is equally valuable when grown in small pots either for the sitting-room or for the decoration of the dinner-table associated with Maiden-hair or any light, graceful Ferns. A mistake is sometimes made in drying off the bulbs in winter—a practice productive of much harm and an almost certain preventive of the plant blooming the following year. Potting should take place as soon as the flowering is past, giving a compost of three parts rich loam and one part well decomposed cow-manure, leaf-mould, and coarse sand. The plants should be given a light place in a warm greenhouse and kept steadily growing, but until February very little water will be required. As the days grow longer more root moisture will be required, and from June till they throw up their flower-stems a cool pit facing south will grow them well. The flowers remain in good condition for a considerable time if shaded from strong sunshine; indeed, old exhibitors of stove and greenhouse plants—who always included a large specimen of this telling subject in their autumn collections—by retarding them in a north aspect house made the same plants do duty at several shows. If a few plants are reserved for successional work, and are kept in a north or very cool house until well into the spring, and afterwards urged on in a more genial temperature, a supply of bloom may be had for several months.

1285—**Crop in greenhouse after Cucumbers.**—I have a span-roof greenhouse 15 feet by 10 feet, erected last February. I have been growing Cucumbers and Tomatoes, but they are nearly over. Can you kindly tell me what I should now plant to come on after they are quite over? I require to get things which can be sold at the Bedford Market. Do you advise flowers to be grown, or to continue sowing Cucumbers and Tomatoes? All three sell well. I am only a beginner, but a constant reader of your excellent paper.—Charles H. Piggott.

*** *You will find less labour required in growing Cucumbers and Tomatoes than for flowers; therefore, if these succeed and sell well, why not grow another batch?*

1286—**Planting Aquilegias, Alstrœmerias, etc.**—I propose planting a border with clumps of Aquilegias, Pyrethrums, Alstrœmeria aurea, but should be glad to know if they will succeed in the situation I describe?—Hot, dry, and sheltered, faces west but gets the sun nearly all day, protected by a hedge at the back, which is, however, 4 feet away from the border, clay soil in Hertfordshire, but will be well manured. If the plants I mention are not likely to succeed, can anyone give me a few names of those more suitable for such a soil and situation?—Crosspatch.

*** *The plants you name will succeed if you trench the soil eighteen inches deep, adding to the top-spit half-decayed stable-manure, wood-ashes, road-side refuse, or decomposed vegetable refuse. In trenching keep the surface soil still on the top. Mulch the surface in the spring with any of the materials named. This will improve the soil and conserve the moisture in the border.*

1287—**Cyclamens.**—I read in Gardening some time since that old mortar-rubble was a great help to Cyclamens. Will you please tell me what size it should be for plants in 4-inch, 5-inch, and 6-inch pots?—W. L.

*** *If the soil is of a heavy retentive nature, old mortar-rubble, broken in pieces the size of Hazel-nuts, is a great help in keeping the soil porous and sweet. For light soil a small quantity of dried cow-dung added in the ordinary compost is better.*

1288—**Scented Verbena-cuttings.**—Will you kindly tell me through your valuable paper if I can strike the above in water, or, if not, how and when is the best time?—George Pittock.

*** *You will not be very successful with this in water. See our issue for March 27, where we illustrate the propagation of Fuchsias, and treat the Lemon Verbena the same.*

1289—**A curious Pea.**—Enclosed are some pods of Peas. I should like to know if you know them, as I have never seen them elsewhere? They are an old Pea, I obtained them from a man that has grown them for thirty years. They are quite an ornament as well as useful Peas. They are good croppers and admired by all who see them—the dark-coloured pods and pale green foliage are such a contrast. Please give an account in your next issue of Gardening.—E. C.

*** *The Pea is the Niger Pea. It is probably a freak of Nature. The Peas in the pod are green and good. It is not a very profitable variety, and an old form, long grown in gardens by those who like the colour.*

1290—**Pruning Honeysuckle.**—Will you kindly inform me when and how to prune Honeysuckle? Mine covers the house, and forms a mass of old and young wood. It is now in flower, and has not been touched for years.—M. F. H.

*** *You might thin out the wood now if it is too crowded or encroaches at all. Spring is the best time to prune, and then simply cut out surplus wood, leaving as much as possible of the short, spur-like growths of the previous summer. Honeysuckles need very little pruning, and often do better untouched by the knife.*

1291—**Creepers for conservatory.**—Kindly inform me names of two best creepers for conservatory, 20 feet by 18 feet, to cover roof, also two second best?—H. Warren.

*** *Tacsonia Van Volxemi (deep scarlet) and Clematis indivisa lobata (white) are both excellent and permanent subjects. If you want one that can be raised from seed as an annual try Cobœa scandens variegata.*

1292—**Diseased Tomato-leaves.**—I have a lot of Early Ruby and Polegate Tomatoes which are bearing fairly well, but the leaves are being disfigured. Would you kindly tell me the cause, and the treatment that should be given? They are grown in a house 30 feet long and 12 feet wide. North and south. I enclose leaves for inspection.—S. D.

*** *The leaves are infested with Peronospora infestans, the well-known Potato disease. Cut away all leaves that are attacked and burn them. If the stem of any of the plants are similarly affected treat them in the same way. Dust the plants with flowers of sulphur. Keep both the roots and the atmosphere drier, even to the extent of warming the hot-water pipes, if there are any. At the same time ventilate freely, but avoid direct draught.*

1293—**Peach-leaves falling off.**—What is the cause of my Peach-leaves falling off? I send sample. The trees are about 25 years old and planted under glass. The wood runs close to the glass and they have a good crop of fruit, which stoned all right. Watering at roots has not been neglected; they were syringed every day, and were mulched twice with cow-droppings. Names of trees: Royal George and White Magellan. What age should Peaches live under glass and bear fruit?—M. M.

*** *If the roots of the trees have not been allowed to become dry, the cause of the leaves dropping prematurely is owing to some necessary cultural detail being neglected. Peach-trees will flourish under glass for fifty years, providing the trees have not been too heavily cropped and well supplied with nourishment. The appearance of the leaves you send would denote that the sun strikes the house while the leaves are wet in the morning, consequent upon the lack of ventilation.*

1294—**Lifting the White Lily.**—When Lilium candidum increases very rapidly, and the bulbs are growing on top of each other, is it advisable every second or third year to take them up and divide them?—Basquaise

*** *Each third year is quite frequent enough. Replant the bulbs according to their size, but if the clumps show no signs of weakness we should not disturb them.*

1295—**Cutting down Clematises.**—What is the best time to cut down C. Jackmani, and how low may it be cut in order to have foliage as near to the ground as possible? The plant has been in its present position two years, and was not cut back last year.—Clematis.

*** *As a rule, this Clematis dies down each year, and should always be cut down to the base each autumn, when the blooms and foliage have gone. You cannot grow any of the Jackmani section as dwarf and bushy plants without training their long twining growths around something.*

1296—**Curious Cucumber growths.**—Can you explain the peculiar growth of enclosed piece of a Telegraph Cucumber-plant? It has grown about 10 feet, quite flat, although the stem at starting is of the ordinary kind.—Fred C. Smith.

*** *The peculiar fasciated growth of Cucumber is a freak common amongst plants of this class, such as Cucumbers, Melons, and Vegetable Marrows. There is no particular reason for such a growth, and certainly no advantage in retaining such. Upon its first appearance cut off the point of the shoot.*

1297—**Treatment of Gentians.**—I should be glad to know whether Gentians that have been left untouched for probably twenty years and are not flowering well, would be better if taken up, divided, and replanted in good fresh earth?—Basquaise.

*** *There are a number of Gentians ranging from 5 feet to a couple of inches in height. You give no idea of which yours are, but we imagine you mean one of the dwarf-growing, blue-flowered species. As a rule, these have a great objection to root disturbance, and it may be better if you were to add a little dressing of soot and burnt loam. The plants will feed upon this as it is washed down. If your soil is deficient in lime, a slight dressing of lime with well-decayed stable-manure, or a mixture of vegetable refuse that has been turned over with lime a few times will help them.*

1298—**Does Ivy create damp?**—Kindly inform me if Ivy, growing over a brick house, causes damp and injures it, also nails?—H. M.

*** *Ivy does not promote damp, rather the reverse, but of course, nails are injurious, as they chip the bricks.*

1299—**Unsatisfactory Vine.**—I have a Vine against the house, and the fruit is affected with something black. Please would you tell me what it is, and what is the best for me to do with it?—B. Harmer.

*** *We cannot say in the least what is the matter with your Vine from the description given. "Something black" may mean anything. If you will send specimens we will gladly assist you.*

1300—**Plants and shrubs for small garden.**—I should be pleased to have suggestions through your columns as to what plants or shrubs would be likely to give the best all-round results in a small front garden, 12 yards by 7 yards, having Grass in the centre and borders round? The house is situate at the west end, all the other sides being open.—G. C., *North-east Lancs.*

*** *The various replies given recently about hardy plants for borders will help you. As regards shrubs, Guelder Rose, Robinia hispida, a scarlet Thorn, Weigela Eva Rathke, Lilac, Pyracantha, or Mezereon would suit you, but do not crowd up the plants too much.*

Replies to queries.—Through going to press early on account of the Bank Holiday, we are compelled to leave over many replies to queries until next week.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*I. I. Whitby.*—The flower was too much faded. Send a bloom with stamped directed envelope for reply to J. Douglas, Great Bookham, Surrey. ——*Wm. Allen.*—1, Dactylis glomerata variegata; 2, Sedum album; 3, Veronica virginica; 4, Veronica speciosa rubra; 5, Celsia cretica; 6, Galtonia (Hyacinthus) candicans.——*Basil.*—Thyme (Calamintha Acinos).——*J. M. W.*—1, Allium pulchellum; 2, Allium sphærocephalum.——*E. M. B. Abbey.*—The Grass is Isolepis gracilis, the other plant Euphorbia Lathyris. The question about soil for Rhododendrons answered in short reply column.——*A. H. O.*—1, Ampelopsis Veitchi (Veitch's Virginian Creeper); 2, Streptosolen Jamesoni.——*Wallace.*—Deutzia gracilis.——*F. L. K.*—Unfortunately you have not numbered the plants, and, therefore, we cannot name them. You must number each kind and keep a duplicate, otherwise you cannot tell what they are.——*Chas. Robinson.*—We cannot name the Carnation flowers, as they are so much alike. Your best plan would be to send fresh blooms to Mr. J. Douglas, Great Gearies, Ilford, or some other well-known grower, and ask for advice. Enclose a stamped envelope for reply.——*Lyja.*—Tea Rose Perle des Jardins.——*R.*—H. Trionum.——*V.*—1, Xeranthemum annuum; 2, Campanula persicifolia; 3, Physostegia virginiana; 4, Hypericum hircinum; 5, Saponaria officinalis.——*F. B., Hornsey.*—The name of the plant is Galega officinalis alba, a hardy perennial, increased by dividing the roots in March. Deeply dug and well-manured soil in any open situation is all that is necessary to cultivate this plant with success. ——*F. A. Seabrooke.*—Unfortunately it is almost impossible to name Carnations from single flowers. If you send them quite fresh, and not more than three at a time, to Mr. Douglas, The Gardens, Great Gearies, Ilford, Essex, he will help you.——*Bob.*—The Begonia is B. Dregei; of the Salvia please send flowers. The Orchid is Cœlogyne cristata. It has evidently been kept too warm. Try a cooler temperature. It looks dried up, too.——*G. Dumbalm.*—You packed the flowers extremely well, but Pelargoniums are very troublesome to name. 1, Mme. Thibaut; 2, You must send this to someone who has a collection to compare it with; 3, Kingston Beauty; 4, A. F. Barron.——*R. Greening.*—Cotton Thistle (Onopordon Acanthium).——*J. C. W. B.*—Snails (Medicago scutellata).——*Chinley.*—Pelargonium flowers had, unfortunately, tumbled to pieces. ——*W. Oliver.*—2, A. concinnum; 3, A. gracillimum; 4, A. Pacotti. We cannot find Number 1.——*H. Tunnington.*—1, Faded; 2, Helenium pumilum; 3, Chrysanthemum maximum; 4, Campanula persicifolia fl.-pl.; 5, Erigeron speciosus.——*G. Wyatt.*—1, Cassia corymbosa; 2, Ceanothus azureus; 3, Echinops ruthenicus; 4, Potentilla fruticosa; 5, Lysimachia thyrsiflora; 6, Virginian Poke-weed (Phytolacca decandra).——*Ferns.*—1, Polypodium vulgare; 2, Lastrea Filix-mas (variety of); 3, Athyrium Filix-fœmina; 4, Adiantum pedatum; 5, Asplenium marinum.

Name of vegetable.—*T. Kruger.*—The Pea is evidently Telephone, though, of course, it is not very easy to tell from a single pod without particulars as to height, etc.

BEES.

Bees deserting their hive (*Lady Amateur*).—The probability is that the Bees seen by you so busy about the hive were not, as you supposed them to be, the occupants storing up supplies, but were robbers carrying away the honey. There would be great commotion about the entrance of the hive while the robbing was going on which might easily deceive the uninitiated into supposing that much legitimate work was being done. Your stock of Bees had most likely become weak in numbers from the loss of their queen and not strong enough to defend their hives from the attack of robbers; the Bees of other hives are sure to plunder a weak or deserted hive in times of scarcity of forage. In point of fact, a weak lot of Bees are not only indisposed to defend their hive, but will often become so demoralised as to join the attacking party in carrying off the stores. It is astonishing how quickly at such a time a hive will be cleared out, all the Bees in the neighbourhood appearing to join in the work of plunder, Wasps also oftentimes taking a large share in the business. The nibbled-up combs you found near the entrance proved what thorough work the robbers had made. It is not often a swarm refuses to stay in the hive in which it is placed; but Bees have their vagaries, and are somewhat erratic at times, and the swarm you obtained evidently objected to living in a hive that had been so overrun by robbers; very possibly a great number of the Bees composing the swarm had assisted at the robbery, and they would naturally feel themselves ill at ease on finding themselves again in the very house they helped to sack! The portion of the swarm that was secured and replaced in the hive did not include the queen, in all probability, hence the lack of energy in the hive. It is a bad case, and we fear you cannot mend matters unless you could at once introduce a young, prolific queen, and encourage the rearing of brood by continuous gentle feeding. As, however, it is now late in the season, the best thing to do with the small cluster of Bees would be to join them to a strong colony. It is a good policy to examine hives in spring for the presence of a queen, as there is no possibility of a queenless hive doing any good; it is bound to dwindle and die out or become the prey of robbers.—S. S. G.

POULTRY AND RABBITS.

Fowls in small run (*T. R.*).—Three or four medium-sized birds are as many as the run can accommodate, and I should prefer the smaller number. The run is really too small to think of keeping Fowls profitably; for the ground must become fouled with the droppings in a short time, and the smell would be serious in warm weather. Poultry-keepers too often make a mistake in this respect. Fowls are cramped up in a small place, and either become diseased or feather-eating is resorted to, which comes to the same thing. Last week I noticed a few hens penned alongside a wall in a cottage garden. The run was a mere puddle, tolerably dry that day because there had been no rain; but still it must have been uncomfortable to the birds. One of them must have been a feather-eater, for one of its fellows was nearly half-plucked, its thighs and body being quite bare and very red in colour. In another case I noticed a couple of hens kept in a barrel turned over on its side and one was actually laying. I look upon such poultry management as little short of cruelty, although the owners do not intend to illtreat their fowls. Coming back to the query, I should add there is no need for a cock, for hens kept under such circumstances do better without one. As to the breed, any ordinary Fowls would do, provided they had not too much Hamburgh, Houdan, or Leghorn blood in them. Dark-coloured birds would be the most suitable, for they would not show the dirt.—Doulting.

Fattening Geese (*J.*).—Geese killed at Michaelmas are known as "green" Geese, probably because they are taken off the Grass and killed without any preparation in the way of fattening. On good land, where there is plenty of Grass, they should be very fleshy at the end of September, for, in addition to the Grass, they get a good sprinkling of seeds, and from this time onwards they may be seen feeding on the seed-stalks. Under such circumstances as these all the assistance needed would be a good feed of corn daily. You may use Wheat, Barley, or Indian Corn. On poorer land, where the Grass is scanty, extra feeding must be resorted to if good weights are to be obtained. Do not fasten the birds in a close pen. They are too young to settle down quietly, and I doubt whether the flavour of the meat would not be injured by confinement at this season.—Doulting.

LAW.

A tenant's fruit-bushes (*G.*).—There is nothing in the query to show that you have any right to compensation for the fruit-bushes you have planted in your field, nor have you power to remove them. At common law a tenant cannot remove fruit-trees or bushes which he has planted unless he is a market gardener or a nurseryman. Neither has he any right to any compensation for ungathered fruit or fruit not ripe at the time of quitting. If your field be an allotment within the definition of an allotment in the Allotments and Cottage Gardens Compensation for Crops Act (a parcel of land not exceeding 2 acres in extent and cultivated as a garden or a farm or as both), you would on quitting be entitled to compensation from your landlord for any fruit growing upon the bushes, but as your tenancy expires at Michaelmas there will then be no fruit growing—all will have been gathered. Under the same Act you would be entitled to compensation for fruit-trees and for fruit-bushes planted by you, but only in the case that before planting you had obtained your landlord's written consent to the proceeding. If you are not within the scope of that Act, you are within the Holdings Act of 1883; but under the Holdings Act the planting of fruit-bushes or of orchards is an improvement comprised in the first part of the first schedule of the Act, and compensation can only be claimed in respect of such improvements when the landlord's consent in writing was obtained previously to the making of the improvement. In some places the custom of the country requires compensation to be made to an agricultural tenant for fruit-trees planted within two years (and in some cases for a further period) before the determination of the tenancy, and similarly with regard to fruit-bushes. You have no power to remove the bushes unless the clauses of the Holdings Acts relating to fixtures include fruit-trees and bushes, and this is a very doubtful matter, and the attempt to do so would probably result in an expensive lawsuit.—K. C. T.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Preserving vegetables.—Would you kindly inform me of an easy method to preserve vegetables, such as Peas, Beans, and Asparagus-heads, for winter use?—C. Glamis and A. E. Banks.

*** Peas, Asparagus-points, Kidney Beans, and Scarlet Runners can be bottled for winter use, but all must be young and of the same size and freshness. Put the Peas as you shell them into large-mouthed bottles, shake them well down, and put a teaspoonful of the following mixture in the mouth of each bottle: One oz. of salt, 2 oz. of loaf sugar, and a piece of common soda as large as a Walnut. Pound these all together, pass them through a wire sieve, and mix them thoroughly. Wrap each bottle up to the neck in wet newspaper, tying it with string, and put a paper stopper in each bottle. Put in a saucepan that will hold enough water to come quite up to the neck of the bottles. Put four folds of newspaper at the bottom of the saucepan. Stand the bottles on the paper and fill with cold water, stand on the stove, and bring to the boil. Let them boil gently for half-an-hour. By this time the vegetable will have shrunk well down from the neck of the bottles and the mixture dissolved. If not, keep it on a little longer, then carefully lift the saucepan on to the table, leaving the bottles just as they are in the water until quite cold. As soon as taken from the fire fill up each bottle with boiling water. The next day, or when quite cold, cover with wet bladder, wrap each bottle in newspaper to keep them from the light, and store in a very cool place. Beans need only to be of one size, crisp, and young. Cut off each end only, packing them endways in the bottles. Asparagus is cut off in thick lengths, only so far as it is crisp. Peas and Beans can be kept by well packing them in common salt, corking and sealing the bottles; these latter require, when cooking, quite twenty-four hours' soaking, the water being changed three and four times.—B.

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ROSES.

NEW GARDEN ROSES.

FURTHER NOTES.

As the subject of new Roses is being treated upon in GARDENING, I append below a list of new Roses that I have proved to be good, especially for decoration. Although I revel in a Rose-show as much as anyone, I do not believe that exhibiting Roses should be our one and only aim in cultivating the Queen of Flowers. That some of the recent Roses are decidedly decorative will, I think, prove that raisers can read the signs of the times, and will mainly turn their attention to producing Roses for the garden rather than a few exhibitions. The great majority grow Roses of the type of Marie Van Houtte, Viscountess Folkestone, Mme. Hoste, Grace Darling, Enchantress, etc., massed in large or small quantities, according to the extent of their means, that yield abundance of flowers for decoration from early June to October.

That improvements have been made in this direction cannot be denied, and I have only to mention such fine decorative novelties as Mme. Abel Chatenay, Belle Siebrecht, Clara Watson, Enchantress, Clio, Mme. Eugène Resal, Sylph, Mrs. Sharman Crawford, Francis Dubriel, etc., in support of my statement.

The following is my list, placed alphabetically:

ALISTER STELLA GRAY.—A beautiful Polyantha-like Rose, producing large panicles of tiny orange-yellow flowers. This Rose is a good autumn-flowering variety, a fact which enhances its value. Its habit is climbing, and it makes a fine pillar Rose under glass.

ANTOINE RIVOIRE (H. T.).—A noble flower of a pleasing flesh-pink colour, flushed with peach and yellow. The flower is rather flat, but large, and produced on fine stiff stems.

BARONNE G. CHANDON (Tea).—A fine show flower something after the form of Jean Ducher. Its colour is creamy-yellow, shaded with orange and peach; habit good and vigorous.

BELLE SIEBRECHT (syn. Mrs. W. J. Grant).—A grand acquisition. Its colour is imperial pink. Perhaps its one defect is want of fullness, and it is an uncertain exhibition variety owing to its thinness, but in all other respects it is superb.

CLIO (H.P.).—Almost a shrub Rose for its vigour and freedom; it is good, too, for covering pillars. The colour is flesh-pink, edged with silvery-white. This Rose should be disbudded freely.

COMTESSE DUSY (Tea).—A pretty garden variety, with fine long buds. The white, expanded, very loose flowers are showy, but it is valueless for exhibition.

DUKE OF YORK (China).—Who does not love that old Rose Homère? Duke of York resembles it in some respects, and most of the flowers are of perfect form. The buds are a lovely rich carmine hue, marbled and shaded with white; most striking in effect. Some of the older flowers change to almost mulberry colour.

EMPRESS ALEXANDRA OF RUSSIA.—This is a pure Tea of beautiful colour that will stamp it as one of the best introductions of recent years. It has something of the shade of Ophirie about it, but the scarlet-orange hue is more intense. It is a fine globular flower of great substance and size, and must soon be in every garden, for it is a good grower, unlike most Roses of its colour.

ENCHANTRESS (Tea).—This is said to be a cross between a Tea and a China Rose. In its immense panicles of blossoms it certainly resembles the Chinas, but in the refined flower it approaches the Teas. The colour is clear, soft buff, with a tinge of apricot. It is a splendid vigorous variety, and excellent for winter flowering.

FRANCIS DUBRIEUL (Tea).—A better formed flower than Souv. d'Thérèse Levet, with a richer crimson colour, merging to velvety maroon. A first-rate kind.

HELEN KELLER (H.P.).—A splendid Rose of a pleasing rosy-cerise shade and perfect form; fine for exhibition or for the garden.

LORNA DOONE (Bourbon).—A great advance. The flowers are large and showy. The colour is vivid magenta, shaded scarlet, and the growth not weak but sturdy, making it a good bedding Rose for an autumnal display.

I will describe some more kinds next week.

W. E.

HYBRID SWEET BRIERS.

OWING to the grand way in which these have been shown among the so-called garden and single Roses we have had several queries of late, chiefly relating to their pruning and asking for information upon their flowering qualities. I have never seen them better than during the present season, and the plants are now sending up shoots from the base. As a rule, these seldom appear until the flowering stage has passed.

Pruning should never be practised in the same way we generally understand by that term. There is no need to prune with the object of increasing or bettering the supply of flowers. All one need do is to cut back here and there a shoot which will persist in encroaching where not wanted. Further than this, I would keep the knife from them entirely. Some correspondents wish to know if they are autumnal bloomers. I must confess that, taken as a class, this is their only disappointing feature; but they are deliciously sweet throughout the entire season, and simply clothed with deep scarlet berries in late autumn and summer. Some few of the newer set are autumnal bloomers, the best being Catherine Leyton, a soft, rosy-pink; Green Mantle, a rich pink with white centre; Julie Mannering, a clear porcelain pink; and Lucy Bertram, a very deep crimson.

As for freedom in blooming, the plants are simply a mass of blossom from middle of May until early July, and we can say no more of many of our best garden and summer-flowering Roses, while the Briers are always sweet from March until after frosts set in.

I would recommend that some be grown upon tall standard stems, also as specimens upon the lawn, and as rough edges; especially are they useful to part off the kitchen and flower garden or lawn, so often found close together in small gardens. No plant will make a pleasing summer bower of Roses in less time. The appearance in the case of groups or hedge is much heightened when the colours are not mixed. In the latter case Flora McIvor and other light-coloured varieties do not appear to so much advantage against the deeper and more intense shade of Meg Merrilies, Anne of Gierstein, Lucy Bertram, and Jeannie Deans. Much more of interest could easily be written about these splendid Briers, but the above is penned as a reply to several querists, who have evidently doubts respecting their pruning and general usefulness.

P. U.

Rose blooms not opening.—Will you kindly tell me what is the matter with these Roses? The tree is apparently quite healthy and covered with buds, which all die off in this manner. They are in a bed cut out, but not overhung, in a Fir-wood. The soil is sandy, and they have plenty of sun. There is one W. Allen Richardson with quantities of flowers on it each year. The Roses above mentioned have gone off in the same way. Would it be better to move them into a very sunny border?—S. M., *Surrey*.

*** We believe your plant to be Jean Ducher, a beautiful Rose when it opens freely, but one which needs more light than would be found beneath Fir-trees. Remove it, and if you want the same colour beneath the trees plant Francisca Krüger, a Rose that grows even better and freer than Jean Ducher and always opens well.

Budding Briers (*M. Barlow*).—Send us one of your shoots and the bud that failed. Do not disturb them, but pack the small portion as cut from the tree; we will then give you a definite reply. The bast or tying material should not be left on more than a month after budding; but if ordinary raffia be used this will rot about that time. In our notes in the issue for June 19 we warn against constriction through the tie lasting a long time.

Unsatisfactory Roses (*H. K.*).—Your Roses are affected by red rust. There is no cure for this, and it generally appears upon plants growing on the Manetti-stock in a much worse form than when upon Briers. The true Teas and Noisettes are free, but Hybrids are badly affected in many districts.

Six Standard Roses (*G. Russell*).—All six of the following are sweet-scented and well suited for your purpose: Bouquet d'Or and Emilie Dupuy, buffs; Boule de Neige and Helen Paul, white; and Prince C. de Rohan and General Jacqueminot, dark crimson.

Rose queries not answered above are replied to in the query columns.

Gloxinia Her Majesty.—During the past thirty years a marvellous improvement has been made in respect to these beautiful flowers. Everyone who has a frame may grow Gloxinias if they place the bulbs on a bed of heating material to start them in spring. When they have started into growth they can be grown in any garden frame through the summer, and brought into the rooms when coming into bloom.—J. CROOK.

POLYANTHUSES.

There was a little note by "D.," in Gardening, on May 29th, on Polyanthuses, and in that note the advice was given to sow the seeds then in the open ground, and to sow thinly, so that the plants could remain on the seed-bed and become strong for transplanting to the beds and borders in September.

In the case of those who have a collection of really fine Polyanthuses, and some amongst them from which they wish to save seed, as soon as it is ripe they can plant it in the open ground, of course. But I do not think that anywhere in the midland or northern counties the seed of Polyanthuses is ripe by the end of May, unless in some very exceptionally warm positions; and those people who wish to use Polyanthuses for bedding-out plants for the following spring will get up a more satisfactory stock by raising the seeds of the previous year in shallow boxes or pans in February under glass. Unless they have really fine Polyanthuses of their own, I should strongly recommend the seeds of the Giant Yellow, Giant White, and Giant mixed Polyanthuses to be bought from some good firm. A packet of each will secure a large stock if planted as I advise. And that they are well worth securing few people who have seen a good collection of the Polyanthuses of the present day will deny.

If the seed be sown in a good-sized shallow box, in which a mixture of sharp sand, leaf-mould, and soil, in equal parts, has been placed, and they are put in a frame or greenhouse and gently watered, and kept from ever becoming dry, nearly all the seeds will germinate, though some will do so much more slowly than others. As soon as the plants are large enough to handle carefully remove them one by one with a small pointed stick, and prick out in another box in similar soil, at a distance of about an inch and a-half apart. In doing this be careful not to injure or disturb smaller plants which will only just be appearing above the soil, as some of these may turn out to be the best. When large enough prick out those smaller plants in the same way.

These must be kept fairly near the light, and in May the boxes may be put outside in a sheltered place if kept well watered (in the morning if out-of-doors). In June make up some seed-beds 4 feet wide, and enrich them with manure, and if possible some leaf-mould, to secure quick rooting and growth. In these 4-feet beds plant the Polyanthus seedlings, which by then ought to be nice, sturdy little plants, and in planting them be careful to do so firmly, letting the soil reach to just beneath the crown of the plant. Put seven rows across the bed, and in the rows let the plants be 6 inches apart. Keep them watered during dry weather, and by early October, when they are required for planting in their permanent beds for a display the following spring, you will find a very different stock from that which could be procured by sowing thinly on a seed-bed in June, and leaving the seedlings to fight their own way upon it as best they could. Such a plan would only result in a survival, not of the fittest, but of the strongest (which, in this instance, is by no means the same thing), and even those strongest plants would compete badly against those treated to a little more care.

Where no glass is available sow the seed on a seed-bed out-of-doors late in May, by all means. You will not get so advanced a stock of plants thus, but they will flower the following year; only take my advice and prick them off in a young state into a prepared bed, and do not leave them on the seed-bed, however thinly they may have been sown upon it. The best situation for the seed-beds of Polyanthuses is under a north or east wall, or where the sun is rather shaded from them by some trees or bushes. In this case it is best that the trees do not go directly overhead, but are in a position to the south or west side; but so long as the plants have one side quite open to daylight they will thrive if quite overshadowed on the other and covered overhead. In fact, they prefer this treatment to being in a very hot, dry, exposed spot. In moving the plants finally, prepare the beds in which they are to be planted by good digging and plenty of manure. Then move the Polyanthus plants with good clumps of soil at their roots, and plant firmly just up to their crowns, but not above them. Let the outside edges of the leaves of the plants just touch each other. Give a thorough soaking of water after planting. If the plants are then left to themselves there will be a good result the following spring, whether the beds are in the sunshine or not. But the display will be longer if the bed is shaded by some building or shrub-beds during the middle and latter end of each day, and if a very dry spring follows of course the plants will feel it much less, and prove more satisfactory if out of the sun during a part of each day. In many moderately light soils the plants, if taken up when their flowering season is over to make room for summer plants, will thrive well if removed to some reserve or back border, and they will flower there for many years undisturbed; but they must be planted with soil attached to their roots, and taken directly from one bed to the other. They must not be permitted to flag for want of water during the first fortnight after removal. Unless done in very wet weather a thorough soaking after planting is a necessity.

I need hardly say that if they are left in the bed they flowered in, and if that bed is in a sheltered spot, they will often flower year after year; but they will not do so in all soils, and they will not do so in any soil at all if the crowns are allowed to work upwards out of it and the roots beneath them are at all exposed. A top-dressing of soil must be given in this case, and is necessary in some soils. Like many other plants, they are inclined to work upwards if the soil they are planted in is light.

It is curious that Polyanthuses, although unable to endure dry weather and a dry position, are almost annuals in a very moist soil. They are supposed to like a clay soil, but I have had many years' experience in growing them, and my experiences go to prove that if soil is not perfectly drained they do not; that is to say, if they are to be looked upon as a perennial, which, in a soil that suits them, they certainly prove themselves to be. Primroses and Polyanthuses are grown and treated in the same way. I have found that, on the whole, the Giant Yellow and Giant White Polyanthuses are better than the mixed ones, but that the mixed Primroses, if a really good strain is bought, give wonderfully fine flowers of varied and beautiful hues.

Mrs. Robert Jocelyn.

HOUSE AND WINDOW GARDENING.

FERNS IN WINDOWS.

It is a pity that Ferns are not in higher favour with window gardeners. Unlike the Pelargoniums, Fuchsias, etc., that are so much grown for window decoration during the summer months, they are as ornamental in the depth of winter as when the days are at their longest and brightest. The difficulty those window gardeners experience in keeping their plants in a fresh, healthy condition is probably one reason why Ferns are not more in favour. It must be admitted that really good specimens are comparatively rare, and when a Fern comes into bad health it certainly is by no means an attractive object. There are, however, no insurmountable obstacles to the successful culture of Ferns in rooms, and those who are fond of this graceful-habited family may be assured that by the observance of a few simple rules they will be able to maintain their plants in health the year through. It is most important that suitable varieties be selected, for there are kinds which are peculiarly fitted for window culture, whilst others require a considerable amount of skill to keep them in good health. The Maiden-hair, for instance, although in such high favour for decoration generally, is not one that I should advise window gardeners to begin with. It is not a robust habited kind, and soon suffers unless the atmospheric conditions are to its liking. One of the best of room Ferns is Asplenium bulbiferum; it is of a hardy, enduring nature, and can be kept in good health without a change of soil for several years. I do not know of any Fern that will better bear without suffering the vitiated atmosphere of a constantly heated apartment than this. It has pale green, much-divided foliage, and when in good condition has a nice appearance. Cyrtomium falcatum (the Japan Holly Fern) has broad, rich green foliage, as lustrous and deep in tint as that of the common Holly. It is a distinct and ornamental Fern, that will bear with impunity an amount of rough-and-ready treatment that would prove fatal to most members of the family. It will bear cold draughts better than any Fern I know. If frequently repotted and grown along freely it comes to rather large dimensions; but it can be kept in good condition for several years without repotting if well attended with water. Polystichum setosum, Phlebodium aureum, and Pteris tremula are also good for this purpose, and of easy culture. The hardy kinds are unaccountably neglected by window gardeners. They are easily grown, and if it is desired to fill the window with flowering plants in summer they can be placed in the open air. The Hart's-tongue and its varieties are by reason of their dwarf habit very suitable, and the fronds being of great substance do not suffer much from a dry atmosphere or cold currents of air. Polypodium cambricum, a form of the common Polypody, makes one of the finest window Ferns. It is one of the most graceful habited Ferns in cultivation, excelling in this respect many exotic kinds which demand constant warmth and much care. It must never be forgotten that Ferns love moisture at the roots and protection from hot sun. Those who have windows fronting north will find a difficulty with them, but where the sun can shine fully on them during a good portion of the day they must in some way be screened from it. This is absolutely necessary, for under the influence of hot sunshine the fronds take on a yellow tinge, and it is the constant verdure that renders this family of decorative plants so delightful. Never-failing attention in watering is, however, the keystone to success. Every morning look to each plant and give it the water it requires for the day. Remember that a plant that is root-bound requires much more moisture than one that has been repotted. During the summer months the soil should never become dry, and every week the plants should be taken out and be well sprinkled to cleanse the foliage. Byfleet.

SEASONABLE TABLE DECORATIONS.

The Beckenham Horticultural Show is noted for its display of table decorations, and as a rule there are some exceedingly good arrangements. A chaste table at their show on the 28th ult. was composed of Gladiolus The Bride and yellow blossoms of the Sweet Sultan. This made a pretty and delicate contrast, the spiral racemes of the Gladiolus being arranged in a very light and graceful way. Grass was used freely, perhaps too much so, but taken as a whole these two flowers made a pretty change to what we are accustomed to see at this season. This table deservedly won the premier prize in the lady amateur classes. The second prize also was a charming arrangement of colour-blending. A pleasing association of Sweet Peas of Apple-blossom colour, together with beautifully fresh and handsomely coloured blossoms of Lilium roseum, made a delightful combination. The centre piece was a boat-shaped basket of a pale green colour, somewhat heavily filled with the flowers just mentioned. Four vases, not over large, were placed on either corner, and these were filled with Sweet Peas; each finger-glass had a flower or two with foliage placed in it, thus further enhancing the picture. This table was somewhat spoilt by the dwarf character of its centre piece, which appeared to need a taller receptacle to give it a better finish. Its colouring, though, was charming. In another table in the open division a handsome display was made, the free use of Montbretia crocosmiæflora, with its bright orange-red racemes of blossoms, lending most effective aid to a light and artistic arrangement. D. B. C.

Planting a good hedge (*J. Harrison*).—It is too early to commence planting yet. Wait until the end of September or early part of October. Privet is a hungry plant, and should not be planted. You would find the undermentioned quite as suitable as the Privet for your purpose. The common Thorn or Quick would answer splendidly. So would the American Arbor-vitæ and Lobbs' Thuja. Laurels of sorts not only make a quick but very cheap and handsome hedge. Laurustinus is also another fine hedge plant, and is an object of much beauty when in flower. It is rather tender, however.

SUB-TROPICAL PLANTS IN THE GARDEN.

Beauty of form is as valuable in the garden as is beauty of colour, and nothing is more restful to the eye than the noble sweep of large, curving leaves, the graceful shafts of Bamboo or Arundo swaying in the breeze, and the cool grey-green of the Plantain Lilies in artistic association. There are many plants quite hardy, and more almost so, that may be used in sub-tropical gardening, without having recourse to Musas, Tree-Ferns, and such-like. Of Bamboos there are now a large number of varieties in commerce, and extensive plantations of these subjects have been made in various parts of England and Ireland. The hardy Palm Chamærops Fortunei grows well in the south-west, and many specimens have reached a height of 12 feet to 15 feet. Then there are the New Zealand Flaxes (Phormium), Yuccas in variety, Dracænas, Acanthus, with its wide, deeply-cut, arching leaves and tall flower-spikes; Aralias, Arundo conspicua and A. donax, Pampas Grasses, Eulalias, and Erythrina Crista-galli, which in South Devon remains out all the winter,

Sub tropical plants on a bank at St. Catherine's House, Guildford. From a photograph by Mr. C. M. Molyneux.

and grows 5 feet high and more. For the water-side we have the Giant-leaved Gunneras (G. scabra and G. manicata), while in sheltered situations the Blue Gum (Eucalyptus globulus) and Aralia spinosa are most effective. The accompanying illustration represents sub-tropical plants growing on a sloping bank, and here Palm and Bamboo, Arundo and Musa, form a happy combination. S. W. F.

HYACINTHS AND OTHER SPRING-FLOWERING BULBS IN POTS.

Hyacinths are not used for pots the second year, but after flowering they may be again placed in the open and duly watered until the leaves die down. By planting the bulbs in the ground and allowing them to remain we may, however, reap a rich harvest of nice useful spikes of bloom for a considerable number of years. I will name a few of the best varieties: La Grandesse is a very fine white sort, with extra large bells. Mont Blanc bears a splendid spike. Alba maxima is a third good white. In reds there are few better than Lord Macaulay and Von Schiller. Roi des Belges is a fine red, but generally produces more than one spike. Vuurbaak is an extra fine rich red. Fabiola is a good variety of a rosy-red shade. Koh-i-noor (semi-double) is also extra fine. Another red of a salmon shade is Moreno, one of the handsomest of all Hyacinths. Gigantea is a rosy-white with small bells, and Princess Amelia produces a grand spike of a bluish-pink shade. Czar Peter and Lord Derby are both fine kinds of a light blue shade. King of the Blues is about the best of a dark hue. Another good blue is Grand Maître. Ida is the best yellow. Distinction, Magnificent, and King of the Blacks are all handsome dark-coloured Hyacinths, but generally the spikes of bloom are small.

Early Tulips, like Hyacinths, delight in a cool, steady growth. Any attempt to force them, except a few of the smaller kinds like the different coloured Duc Van Thols, means failure. Tulips like plenty of room for the roots; they should therefore have larger pots than are required for most bulbs. I would use nothing smaller than 6-inch ones. These may contain four bulbs. Use a compost similar to that named for Hyacinths, but with less of manure and grit. When potting, it is well to choose bulbs about equal in size; that is to say, all the larger ones should be potted together, and those smaller be placed similarly, then an even lot of blooms may be obtained. The rule of making a hole for each bulb, previously noted, is also applicable to Tulips, and they should be covered for the purpose of forcing root-growth before leaves. The great number of tiny roots that Tulip bulbs send out points to the fact that water must not be given sparingly, and when coming into bloom abundant daily supplies become necessary. I favour a cool stimulant for Tulips. Liquid cow-manure is capital, but a watering or two with sulphate of ammonia when the blossoms are opening will aid in giving colour and substance. Light, air, a cool temperature, and abundance of moisture at the roots are the chief elements in the culture of Tulips in pots. A few extra good varieties are as follows: Vermilion Brilliant, scarlet; Joost Van Vondel, dark crimson, sometimes flamed white. A white sort (presumably a sport) of the same name is the finest white to be had. The next best white is Pottebakker, Ophir d'Or, yellow; Keizerkroon, red and yellow; Proserpine, rosy-crimson; Duchesse de Parme, orange-red and yellow; Van der Neer, purple; Tournesol, red and yellow; La Candeur, white; Rex Rubrorum, scarlet, are good double sorts, but personally I much prefer the single kinds.

Narcissi are placed next in order. They are nowadays more popular, perhaps, than any spring-flowering bulbs, not, however, as pot-plants, but grown in the open border. I have tried a fair number of the so called distinct Narcissi—it would hardly be possible to try all—and the sorts named below are excellent for pot culture. By this means we may not only obtain nice subjects in themselves for the greenhouse decoration, but by the aid of glass we are able to anticipate the outdoor ones and thus lengthen the flowering season. Narcissi are perfectly hardy and generally will not stand a forcing heat. I would pot the bulbs in pure loam and grit, and they should be potted firmly. They are better not plunged in the dark, but may be stood under some kind of structure to ward off excessive rain. A shelf near the glass of a greenhouse where frost is just kept out is an excellent position for Narcissi during winter, and here they may remain until the blooms are well advanced. A frame in the open border, if protected in severe weather, is an equally good place for their gradual growth, and the needful supply of soft water must not be neglected. Nor should they remain in a close atmosphere whenever the weather is favourable to the glass being open. Bulbocodium (Hoop Petticoat) is a pretty sort for pots. It should be planted thickly—that is, six or seven bulbs in a 6-inch pot. Golden Spur, about four bulbs in a pot similar in size, makes a first-rate specimen. This will force well. Emperor, large yellow trumpet; Empress, yellow and white; Sir Watkin, yellow; Horsfieldi, yellow and white—these are among the noblest of Daffodils and do well in pots. Princeps, yellow, and Grandee, bicolor, are not unlike the above-named and are cheaper. Barri conspicuus is a very rich-coloured variety. All except the last may have a 6-inch pot for three bulbs. Among doubles Sulphur Phœnix and Orange Phœnix are grand; five bulbs in a pot is a good number for these. Van Sion is a fine yellow double sort. Then there are the Polyanthus Narcissi, which bear bunches of small sweetly-scented blossoms; they make handsome pot plants. Grand Monarque, white-lemon cup, somewhat late, is extra good; Gloriosa, orange and white; Newton, Jaune Suprème, Queen of the Netherlands, Her Majesty, are capital sorts. These mostly have large bulbs; three in a pot will therefore be sufficient; they produce several spikes each and are very showy. There is this about Narcissi: When one has once purchased a stock they may be readily increased by planting them in the open border. Then there are Lilies and Tuberoses, which I will not deal with in this short paper; but

Freesias are charming, early-flowering bulbs which may be grown by anyone with a bit of glass. The bulbs are tiny, not expensive, and of easy growth. Well-grown specimens are exceedingly pretty and the blossoms are nicely scented. This bulb will grow in almost any soil, but a compost rich in leaf-mould and sand is one to be recommended. Pot the bulbs in autumn, about seven in a 5-inch pot and ten in the 6-inch size; slightly bury the bulbs, then stand the pots in a frame. They require no covering—I mean the pots should not be plunged—but need protection during severe weather. The best position for them, perhaps, after growth has started is the greenhouse shelf; here they may remain up to the time of flowering. All that is necessary is to give plenty of water, air in abundance, and a mild stimulant when the bloom is opening; the branches may be tied with neat sticks. Unlike Hyacinths, for instance, these Freesias do not lose in value after flowering; they increase rapidly, so that when once a stock is procured there is no need to buy a second supply. After the blooms are past allow the growth to wither gradually, and the bulbs may then be taken from the earth, stored, and again potted the following autumn.

Gladiolus Colvillei alba The Bride is a favourite flower of mine, but one can scarcely term it spring-flowering. There is, however, no difficulty in getting the blooms open by Whitsuntide—that is, if an early start be made. Plant about nine bulbs in a 6-inch pot and treat in the manner advised for Freesias; by this

means we may obtain a wealth of lovely white blossoms. The bulbs of this plant increase easily, and they may either be potted annually or planted in the open garden in a very dry, warm situation, in which case protection is necessary during winter.

The foregoing practical paper (continued from last week) is by Mr. Shoesmith, and read before the Woking Gardeners' Association.

THE KITCHEN GARDEN.

MUSHROOM-GROWING IN SUMMER.

Those who have a cool underground cellar can have summer Mushrooms, as a uniform temperature is maintained, moisture can be retained, and heat defied. The basket of Mushrooms illustrated was grown in such a place. Growers have various modes of culture for getting winter and summer crops. In summer beds can be made in the open, and do well if protected from heat and drought. The best Mushrooms I ever grew came from a disused ice-house, and here one had superior crops to those obtained in the open. I am aware it is useless to ask my readers to erect special houses for Mushrooms in the summer, as I know amateurs cannot expect to go to this trouble and expense; but many a cellar would give a summer crop at a small cost.

A basket of summer Mushrooms.

Space does not permit me to go into the culture at great length, and my note more concerns what may be termed profitable culture, as I find a large number of amateurs fail. They do well up to a certain point; they procure good materials, and then fail. I admit they have many drawbacks. It is not always easy to obtain manures, and, again, spawn sometimes fails; but this latter is not common, as it can soon be seen if the spawn is good. Excess of heat is hurtful, also too little to start the spawn. Too much moisture is also a mistake. Once the amateur has got over the initial stages Mushroom growing is a simple matter. I have often seen questions asked as to how to make the spawn. Let me advise my amateur friends to purchase it from a good firm. My advice to those who have failed is try again, but at a season when the spawn runs freely, say from October to April. Anyone who cares to may have Mushrooms. They may be grown in boxes or beds, but beware of too much heat. On the other hand, dry the fresh manure, so that the rank heat is lost before making the bed. This is best done by exposure, turning daily for, say, a fortnight, and then placing it in bulk. Many fail because beds are not made firm at the start. They want well ramming, and when heat goes below 100 degs. it is well to spawn. Cover the surface with two inches of heavy soil made quite smooth like mortar, and keep the house at 50 degs. to 60 degs. temperature. I prefer the lower, and beds should not be watered, but the house kept moist. It may happen there will be a rise of temperature in the beds after spawning. If so, defer soiling until the heat declines; if, on the other hand, the beds go down quickly to encourage warmth, give the soil after spawning a covering of warm litter, or keep the house a little warmer for a few days. Many amateurs object to grow Mushrooms in places near the dwelling-house on account of rank smell from the manures. This is prevented if the manure is prepared as advised by drying previously. Mushrooms in buildings in the summer are so much infested with grub that they are not worth culture in a building unless underground or in cellars kept cool. As previously stated, to grow in the open more material is needed, as there must be warmth in the bed at start. On the other hand, amateurs can have summer Mushrooms by placing spawn in frames or even in the open ground in good leaf-land. W.

CELERY.

The latest-sown batch will now be ready for planting, and where room can be found it will be well to put out a goodly number of plants, as these will be hardier than those of the main crop, and will be very useful during the spring months. If the trenches are not already prepared, a portion of the old Cabbage-bed may well be cleared and used for them, as they can be better formed on firm ground, the sides of which will not fall in. The growth on these late plants will not reach the length attained by that of earlier plantings, so the trenches need not be dug so deep; 4 inches below the original level will be ample to supply soil enough for earthing. In other ways prepare as before advised, being careful that all manure used is in a perfect state of decomposition, and that the plants are not allowed to suffer from want of water. Where sufficient room cannot be found for all the requisite plants under the trench system, a portion may be planted out on the level as recommended for Celeriac, putting the plants about 15 inches apart. Those planted in this way will, if well looked after and fed, supply very good sticks for cooking and flavouring, and may be blanched by tying the leaves together when fully grown and packing between the plants with leaves free from slugs or worms, Bracken, or long litter. Of course, more plants may be grown in this way on a given area than can be grown in trenches, and the system should not be overlooked by those whose operations are at all cramped from want of room, and though the produce may not be so uniformly good as may be desired, it will all come in handy for one or other of the many uses to which Celery is applied. The Celery-fly is inclined to be troublesome this year, but may be kept at bay by dusting the plants with soot while the morning dew is on them, and all maggots already developed in the leaves must be looked for and crushed before they travel far, as they will then do but little damage. It is only where this is neglected that plants become spoiled. Attend closely to the watering of all Celery even if it shows no signs of suffering, as pipy stems will be the inevitable result of any deficiency in the supply of water now or at any time during the period of rapid growth. I do not advocate frequent doses of liquid-manure; well-grown Celery can be grown without its aid if the trenches have been well prepared and plenty of clear water is given. T.

COLEWORTS AND SAVOYS.

These should not be left in the seed-bed long enough to get starved or leggy, and it is good practice with such things to begin drawing from the bed and planting as soon as the forwardest plants become fit, continuing to do this at intervals until all are planted, as by this method we can command successional cuttings from one sowing, instead of having all turn in fit for use within a few days of each other. It is all very well to plant big breadths at one time when planting for sale, as then there is no necessity to let any of the crop spoil, but in growing for private use small lots are the most likely to give satisfaction to grower and consumer, as the produce can then be cut at its best instead of being allowed to burst or turn white at the heart before it can be used. With a view to making the most of the ground at disposal I advise fairly close planting—say about 15 inches apart—at present for the Coleworts and smaller Savoys, such as the Dwarf Green Curled and Tom Thumb, reducing this distance still further as the season advances, for late plantings do not give large hearts, however much room may be given the plants.

Puddle the roots before planting, as this prevents attacks from grubs, besides being beneficial to the plants in other ways, for it helps to keep them fresh and excites new root-action. Where slugs are troublesome they should be trapped by putting down here and there handfuls of bran and examining these at night. Dressing the plants with freshly slaked lime also is usual, but too much dependence should not be placed on this, as the lime soon loses its anti-slug virtues and will require frequent renewal to be effective. T.

Colour in Beet.—Although it is common practice to exhibit tapering-rooted Beets in July and August, it is noticeable how few, let them be ever so well grown, bear the test of cutting. The inference is that deep, perfect colour is found in these roots only after they have had time thoroughly to mature; that is a good reason against the showing of them so early in the season, a practice for which compilers of schedules are to blame. Good round-rooted Beet almost always cut better, and certainly they are well in season through July and August. But Beets need very careful and constant selection. Roots only should be planted to give seed-stock that will stand the test of colour in the flesh. External beauty is all very well, but colour and quality of flesh are also most important features. Beets at the Chiswick trials are by cutting thus tested.—A. D.

Dwarf Beans.—Do any of your readers know anything of a Dwarf Bean sent out under the name of Everlasting? The seed is short, but not round, and white in colour. The plants are of moderate height, and produce medium-sized green Beans in exceeding abundance. The plants carry long racemes of flowers, thrown well out above the foliage, and the variety is probably of Continental introduction. If it be so, then I can understand that it may be in commerce in this country under many other appellations. It is because of the confusion which arises from this abundant and varied naming that it is so difficult to determine the real identity of anything in Beans and in so many other things. It is to some extent the practice of the Royal Horticultural Society to correct this free nomenclature at Chiswick; but not the least effect is produced on raisers. I saw the Bean referred to in a garden at Bookham, Surrey, and was told from whence it came; but I cannot hold any more that the appellation

given to me was the correct one, and in spite of every effort it is very difficult to carry in one's mind all that is seen at Chiswick. One good result in getting these French products is that it enables the fruit committee to ascertain something as to the original appellation, as France seems to be the place of origin of so many of the Dwarf Bean section. The Runner Beans we have at home have been pretty prolific, though not nearly so as of Peas, Potatoes, Tomatoes, Cucumbers, and some other things of which we now have legions.—A. D.

Herbs at exhibitions.—Very rarely do we see prizes offered for collections of useful herbs at other than cottagers' garden produce exhibitions. I do not know whether it is beneath the dignity of a private gardener to exhibit these humble things, but at least it is not above him to grow them, and in many gardens very large representative collections are found. Cottagers are usually asked to show four or six diverse herbs in bunches. Just recently one exhibitor set up plants grown in pots, but it is hardly advisable to encourage that form of culture, as herbs make at the best very indifferent pot plants. Good herbs, if shown in neat bunches set up in jars containing water, look very well, and are, when so displayed, dependent on appearance—that is, freshness, evidence of good culture, neatness of setting up, and correct naming for the position they occupy in the prize list. Naturally, the judges give the preference to flavouring herbs, and six very useful ones comprise Parsley, Green Mint, Thyme, Sage, Savory, and Marjoram. To these may be added Fennel, Chervil, Sweet Basil, Tarragon, and Borage as of secondary value. As to medicinal herbs, the best, perhaps, are Peppermint, Penny Royal, Chamomile, Tansey, Rue, and Wormwood. These, however, are not largely used now, except in still-rooms. Peppermint is the chief kind grown for distillation, just as Lavender is also, although that is a nice garden shrub. A very pleasing one is the dwarf purplish variety Lavendula spicata nana. When bunches of herbs are thrown all in a basin or dish, or out of water altogether, I always request the local executives to require they be shown in the future in jars, each bunch separately.—D.

Stenotaphrum americanum variegatum.—This is far better known in gardens as Stenotaphrum glabrum variegatum. It is a creeping Grass, which produces a tuft of leaves at every node. When running along the ground, roots are produced from the lower parts of every tuft, so that it will soon cover a considerable space. It is not, however, in this way that the Stenotaphrum in question is particularly valuable, but it forms a first-rate basket plant, which with but little trouble is effective all the year round. In the reptile-house at the Zoological Gardens the green-leaved form is particularly noticeable, for a large hanging-basket is completely filled with it, and the thong-like stolons, with their tufts of leaves disposed at regular intervals, hang down for 4 feet or 5 feet. This Stenotaphrum will grow in a greenhouse, though it thrives better with a little more heat, and it gives very little trouble at any time provided it is regularly supplied with water.—H.

Flower arrangements.—A very pretty and somewhat unusual vase combination was produced the other day by a young lady at Hooke in employing medium-sized flowers of the Coreopsis grandiflora, with pieces of Eryngium planum and Gypsophila paniculata sparingly used. There were no Grasses, happily, and although these are pleasing enough their too common employment militates against their popularity. The Eryngium should have upon the flowers bracts of just a pleasing shade of blue so that no crude contrasts are furnished. It was in this case one of the pleasing combinations, and won an award immediately. How strange it is that, in nine cases out of ten, ladies, when invited to judge table decorations at shows, make selections diverse from what a trained gardener prefers. This is all the more surprising because ladies are assumed to bring to their judgment refined taste and a cultivated intellect. Gardeners necessarily have had to pick up their ideas concerning colour combinations as best they can. Ladies rather seem to favour somewhat strong admixture and striking colours in preference to soft hues and combinations. Only a few days since at a show ladies had favoured an arrangement in which three colours of Carnations were seen, scarlet dominating, and had placed third a charming one, in which soft pink Sweet Peas was the dominating hue. To this latter six male judges gave the award of honour at once when asked to express their opinion. It may have been very uncourteous thus to disagree with the ladies' conclusions, but the fact they did so remains, and such disagreements are common. Why it should be so I cannot understand, but men seem almost always to prefer soft colours and pleasing combinations.—A. D.

STARWORTS IN THE MIXED BORDER.

No flowers of autumn are more precious than the Starworts, which are commencing even now to bloom. When boldly massed on the border, as shown in the illustration, without being bunched up, as if so many sheafs of corn, they are as handsome as anything one can well have, the flowers rich, yet cool in their various shades of colour. We see their true beauty, however, when grouped amongst evergreen shrubs; the tall, willowy flower-stems rising above and spreading over shrubs have distinct charm. It is not in many gardens that one thus sees the Starworts planted, but rich pictures of colour are thus obtained. A. acris is one of the earliest in bloom. It is quite dwarf; the flowers, soft purple-lilac, almost hide the small leaves, and another handsome kind is A. Amellus, particularly the larger form bessarabicus, of which the flowers are deep purple-blue, set off by an orange centre. All charming in their way are A. diffusus horizontalis, red and white flowers; A. ericoides, white; A. longifolius roseus, rose; the profuse-blooming and white-flowered A. polyphyllus; A. turbinellus, lavender; and the white puniceus. A. Novi-Belgi gives many beautiful varieties, not the least attractive being Purity, the tall grower shown in the illustration. The flowers are of purest white, and, as shown, abundantly produced. A splendid form is Arcturus, the flowers of deepest blue, against dark green leaves. Archer Hind, soft blue; Harpur-Crewe, white, yellow in the centre, and Robert Parker are also varieties of much beauty. The last-mentioned is very tall, its flowers large, and of a very beautiful lavender shade. A. Novæ-Angliæ has a smaller list. Roseus, rose-coloured, is the most distinct, and William Bowman, violet-purple, should certainly be chosen. The Christmas Aster (A. grandiflorus) unfortunately gets damaged by frost owing to its lateness, but the plants if lifted and potted are welcome for conservatory or greenhouse.

Starworts (Perennial Asters) in mixed border. From a photograph by Miss Sybil Knox-Gore, Belleek Manor, Ballina, Co. Mayo.

Flowering shrubs and plants for water-side (*Allegin*).—You will find any of the following admirable subjects for planting on the margin of a lake. They can also be relied upon to furnish a good supply of flowers at their respective flowering seasons. The genus Rubus affords several useful and very free-flowering examples. Perhaps R. fruticosus fl.-pl., the double-flowered pink variety, is the best of a good set. Lilacs, Forsythias, Buddlea globosa, Philadelphus (Mock Orange), and Berberis Darwini thrive famously in such positions. The same remark also applies to Cytisus and Laburnums, the Sea Buckthorn (Hippopæ rhamnoides), Genista præcox, Lycium europæum, and Sweet Brier. Of dwarf growing shrubs, Hypericum calycinum (St. John's Wort) is well worth a place. A few good herbaceous plants would be Ranunculus of sorts, Monardia didyma, Trollius of sorts, Cardamine pratense fl.-pl., Tradescantia virginica, Calthas, Houstonia cœrulea, and Liatris pycnostachya. Amongst Grasses Eulalias and Gyneriums are very graceful, and are seen to excellent advantage when planted on the banks of streams.

The Old Crimson Clove.—That this fine old Carnation sports there can be no doubt, as besides the white variety that is so good as a border plant there is a very pretty pink one—one that is, I think, the best of all. It is not at all common, but I saw it in fair quantity and in good form in the gardens of The Grange, Carshalton, recently. Such a capital variety should be very widely grown. Occasionally rather inferior crimson-flowered varieties are met with that may be seedlings from the original form, if it is ever induced to seed. However, the best forms, if well grown, make plenty of Grass, and can be, by layering, rapidly propagated. It is a pity that so many otherwise very nice Carnations have not the stout, erect stems and sturdy habit of the Old Clove Carnation.—A. D.

YUCCA GLORIOSA IN FLOWER.

Here we have an illustration of the fine effect produced by this Yucca when in bloom. Old plants that throw up several spires of blossoms are quite features in the landscape, though it is seldom that so profusely-flowered a specimen is seen as the subject of the accompanying cut. Yuccas are especially well adapted for forming bold, informal groups on lawns or at the verge of shrubberies, their ivory-white blossoms showing to the best advantage against a background of evergreens, and arrangements such as these possess the additional value of permanence, increasing in size and beauty year by year, and even in the winter affording, with the fine foliage, partly erect, partly drooping, a picture pleasing in outline and in soft colour gradations as the light falls on the wide sword leaves at different angles. Some of the smaller varieties, such as Y. filamentosa, are suitable for the rock-garden. A very beautiful colour effect is obtainable by planting the scarlet Gladiolus brenchleyensis in clumps amongst a colony of the last-named Yucca, the contrast of the brilliant vermilion with the white spires of pendent bells being most decorative.

Y. gloriosa is the largest of the family, the bloom-spikes sometimes reaching to a height of 8 feet or 10 feet.

Y. recurva, with sweeping leaves, has a very graceful appearance, the flowers being rather less thickly set than is the case with Y. gloriosa. Y. flaccida, Y. angustifolia, and Y. aloifolia are other members of the family that may be planted where a general collection is desired, though they are inferior in ornamental qualities to Y. gloriosa and Y. recurva, as they are to Y. filamentosa, which latter is the best Yucca for use in small gardens. S. W. F.

Yucca gloriosa in a Bristol garden. From a photograph by Mrs. Mary Woodward, The Rectory, Flax Bourton.

Summer Stocks.—An effort to grow Asters by sowing the seed in small patches in the open ground has failed because the plants got checked with cold winds in the spring, then became blighted, and since have hardly moved. This was all the more unfortunate as I had hoped to test the relative merits in this way of home-saved seed and German seed in flower-production. But summer Stocks sown a week or ten days later have done remarkably well. Every seed grew, and had the clumps been early thinned I am sure the flowers produced would not have been one whit behind those produced by transplanted plants. I was, however, more concerned to test growth in this rough treatment, and also to see how far each clump kept true to colour. The test was rather a severe one, as the place of growth is very open and exposed. Blight does not seem to have affected them at all, whilst the result shows how much better it is to raise Asters under glass, and thus get them up strong before planting out. It is equally well shown that Stocks hardly need so much trouble being taken over them, and they will bloom finely and sufficiently early thus sown. One of the difficulties presented to a lover of these sweet-scented garden flowers is found in the too abundant lists seedsmen publish. It is practically impossible for anyone not familiar with all to tell which is best, for all are equally praised. The branching Ten-weeks are best for cutting, and the pyramidal varieties for clumping or bedding. The variety in colour is great, but the best are white, carmine, mauve, rose, scarlet, crimson, and purple. Still, a good selection of a dozen diverse colours satisfies all requirements.—A. D.

Gypsophila paniculata. — This is one of the best plants that can be grown by those who go in for floral decorations of any kind, as its light, airy panicles of tiny flowers give a graceful look to any arrangement of flowers in which they are introduced. It is surprising what a quantity of sprays may be cut off a small bed, and above all it is a capital dry weather plant, for it roots very freely. Although many other flowers are dried up with the drought the Gypsophila looks as fresh as ever, which in our light, dry soil, with everything needing water, is a great gain. I find it so useful that I treat it both as an annual and a biennial, sowing the first batch in March in open-air beds, which come into flower in August and September. When the early batch is nearly finished I sow the second lot in July, so as to get the plants strong enough to withstand the winter. It makes very strong, fleshy roots that strike deep down, and for this reason it is best sown thinly where it is to flower. Anyone not having yet grown it should lose no time in getting a packet and sow at once.—J. G., *Gosport.*

NOTES FROM AN ARMAGH GARDEN.

The last days of July have come and gone, and the Rose no longer holds undisputed supremacy among the garden favourites.

The Border Carnation gives a delightful succession of choicest bloom both for garden adornment and house decoration. In colour and form many of these flowers are exquisitely beautiful; in some of them fragrance is the one quality still to be desired. The summer bloom of Roses here was far above the average, both as regards quantity and quality. I have seldom, if ever, noticed the foliage so free from the ravages of insect pests. On the very last day of July I observed the first open flower on

Potentilla Hopwoodiana. It is a novel and very pleasing plant, supposed to be a garden hybrid.

Rock Forget-me-not (Omphalodes Luciliæ) has been in bloom for months, and I think looks more flourishing than ever. Several plants have become strong, established clumps, and about half-a-dozen self-sown seedlings have grown up here and there and are looking strong and healthy; most of them—in fact, nearly all—have the pretty glaucous foliage of the type. This Omphalodes, with its large Forget-me-not-like flowers of delicate porcelain-blue straggling and trailing about, is a very charming plant for a select rock-garden. It ripens seed every season, which, if sown when matured, soon germinates. The

Campanulas now in cultivation are so numerous, varied, and generally such handsome plants that it would be almost worth while to devote a special section of the garden to these alone. C. Zoysi, a tiny and curious little species with pale blue flowers, long-shaped and contracted at the top, came into bloom the third week in July. It is very distinct from any other Bellflower with which I am acquainted. Snails seem to regard it as a choice morsel. An evening inspection resulted in the capture of two of these marauders deliberately at work, the flowers which had only just attained their dainty proportions being ruthlessly demolished. I do not think it would be safe to leave this little Campanula to take its chance of holding its own among its more robust relatives. I have allotted to it a choice position in rock-garden, where it is not likely to be overrun by strong-growing subjects. Campanula Waldsteiniana is another elegant little species now in bloom. My original plant has formed a great round mass, and small pieces taken off after flowering a year or two ago have formed fine strong tufts. Under the name of Campanula Tymonsi I obtained a very handsome Bellflower some years ago; it has formed a very attractive plant, a little more than a foot high, presenting a compact sheet of bloom; the individual flowers are large, a pretty, soft lilac-blue shade. The habit of the plant is spreading, and it is well adapted for either rock-garden or border.

Aster Thomsoni is now in bloom. It is a very refined and elegant star-flower of dwarf habit, flowers large, a pretty shade of pale blue. Gentiana linearis is also in bloom. It is a very neat plant with a lovely blue flower.

J. McWalters.

RENOVATION OF ROCK GARDENS.

It often happens that amateurs enter into possession of gardens in which, as the results of years of neglect, rockeries have become filled with the roots of trees, strong growing shrubs, and Ivy. Some of these amateurs are naturally fond of flowering plants, but are burdened with no appreciable knowledge of their requirements. It may be that they have but lately seen some excellent example of a rock-garden, on which years of thought and care have been lavished, and which, in consequence, is bright with a varied assortment of alpine and other rare plants. It occurs to them that it would be nice to have such a display in their own rockery, which is therefore cleared of its tangle of matted vegetation, and appears bereft of any vestige of greenery. Many may now think that all they will have to do is to clear out with a trowel some of the matted roots between the stones, fill the hole with garden mould, and plant alpines. Such a course, however, is bound to result in failure. Where strong-growing subjects have for a period of ten or twenty years held undisputed sway the impoverished soil is permeated with their roots, which are ready to seize upon any nutriment within their reach and apply it to their own sustenance. If success is to be obtained in such a case, the only method of procedure likely to give favourable results will be found in the total demolition of the old rockery and the absolute clearance of all root-stocks and worn-out soil for some feet back, new soil, the upper portion of which should consist of open, sandy peat, being substituted for the old, and the rocks carefully replaced. This is naturally an expensive undertaking, but no half-measures are adequate to ensure permanent satisfaction, for under such circumstances some of the stronger-growing rock plants may doubtless exist for a time, but will not flourish, while their weaker brethren will quickly succumb. Even in the best ordered rock-gardens years of patient study are often required before the special requirements of some of the floral gems are mastered, soil and exposure being altered again and again ere success is arrived at. Unless the proprietor of the overgrown rockery is prepared to resort to the drastic measures here indicated, it will be preferable to allow the more ornamental of the established plants to remain, and to give, by rooting out and cutting away the less decorative, the former possession of their ancient stronghold. S. W. F.

TREES AND SHRUBS.

GRACEFUL AND HARDY CONIFERS.

Planted with discretion conifers add much beauty to the garden. There is a charm about them possessed by few other trees. They are interesting in all stages of development, and with a proper selection pleasing effects may be produced. In the spring there is a freshness and lightness about the foliage as it takes on the many shades of greens and greys, browns and whites, etc. They are admirably adapted for growing as isolated specimens in the park, on the lawn, and for associating with other border trees. For winter bedding they have no equals. We sometimes hear that conifers are played out. Why? Simply because proper care has not been used in the selection of suitable trees. Years ago they were in many cases employed with reckless freedom, the soils and positions being totally unsuited to their proper development. It is, therefore, necessary that the soil and position they are to occupy should be known to the planter, because conifers, like other trees, have their likes and dislikes. Vigorous growers should never be planted in small gardens where their pendent branches with graceful curves cannot be seen to advantage. As the planting season will soon be here a few remarks on some of the most graceful and hardy conifers may be useful to those readers who contemplate planting. Cupressus Nutkaënsis, frequently met with as Thujopsis borealis, ranks as one of the most handsome of the tribe. Dry soil or damp and heavy loam seems to have little effect in checking the graceful development of this tree, which grows to a height of something like 40 feet. There is a dwarf variety of more compact and bushy habit named C. Nutkaënsis nana, a really fine thing for a small garden. Its foliage is of a lighter hue than that of the preceding. One of the very finest golden-coloured conifers is the little known C. Nutkaënsis lutea, of which the accompanying illustration gives a good idea. Its light and feathery foliage, combined with its constant character and vigorous constitution, stamp it as a useful plant for enlivening the hardy shrub border. Intending planters would do well to bear this in mind. Among silver-leaved kinds C. Lawsoniana Silver Queen is very distinct; it is of free growth and exceedingly handsome. Like the last-named, this variety is not known half so much as it ought to be. C. macrocarpa is also well worth a place; it is of rapid growth, very graceful, and makes a first-rate seaside tree. As an isolated specimen on the lawn what is more beautiful than a good-sized, healthy tree of

The Umbrella Pine (Sciadopitys verticillata)? True, it is not always happy, but how often are soil and position, and not the plant, responsible for this? The soil best suited for it is good loam, with plenty of leaf-mould and perfect drainage and just out of reach of the very hottest sun. A position protected from the cold spring winds is also advisable. This lovely conifer is well worth all the trouble bestowed upon it, as it possesses distinct grace.

Cupressus Nutkaënsis.

Thuja occidentalis Ellwangeriana is of upright habit, very hardy and elegant; it thrives everywhere.

Thujopsis dolobrata is quite as hardy, very bushy, with deep green above, silvery-white beneath; excellent for poor soils. The Deodar (Cedrus Deodara) merits particular attention where plenty of room is available. It is one of the most beautiful of ornamental timber trees. It is advisable to get plants on their own roots, and not, as is often the case, worked on the common Larch. Although in a young state it grows much freer on the last-named stock, it has been proved that the trees are not so long-lived as those on their own roots. Taxus baccata aurea is very distinct. It enjoys full sun heat, thrives splendidly, and colours remarkably well on dry, hungry soils. It is also excellent for planting on the banks of lakes.

Another handsome Yew is Taxus baccata elegantissima. The foliage of this free-growing variety is white and green. It makes a capital companion to the last-named.

The Retinospora family comprises many plants of great ornamental value. Being very hardy, graceful, and free-growing, they are admirably adapted for a variety of purposes. R. filifera is the most graceful of the genus. It forms a small tree of dense growth, with long, whip-like branchlets hanging in graceful profusion all round the plant. For planting as single specimens on the lawn this variety certainly deserves a place. R. filifera aurea is another highly meritorious variety. Its terminal growths are suffused with pale yellow. R. obtusa compacta is a magnificent form of dwarf habit. For winter bedding R. ericoides is most attractive. It is of dwarf habit, erect, densely branched, the foliage of a pleasing shade of green, changing to reddish-brown in the winter. Abies canadensis (Hemlock Spruce) is just the thing for damp soils and shady positions. It is one of the most graceful conifers for planting on the edges of streams and lakes. Sequoia sempervirens albo-spica is another accommodating tree, thriving well in poor soils. The pendulous form of Larix europæa is very beautiful. Biota elegantissima, the elegant Chinese Arbor-vitæ, is a free-growing, upright shrub of good colour. Juniperus virginiana Schotti and Abies brachyphylla are excellent ornamental trees too. T. H.

Copper Beeches unsatisfactory *(Somerset)*.—Your soil is much too dry and poor for the Copper Beech to be seen in its true character. By all means move the plants to a moist (but not overdamp) soil, and you will be well repaid by healthy trees and foliage of the most telling colour. It is a great mistake to plant such noble, ornamental trees in positions quite unsuited to their requirements. Any of the following trees will afford the shelter required: Acer colchicum rubrum is a really first-class tree with handsome foliage. The common Laburnum is a grand subject for dry soils. Pyrus Aucuparia (Mountain Ash) is one of the very finest of berry-bearing trees; it takes kindly to poor soils. Cupressus Nutkaënsis, C. Lawsoniana, and Thuja Menzesi can also be recommended.

Clipping Yew hedges *(C. Jackson, Berkshire, and W.)*.—To secure a good thick hedge it is necessary to trim yearly. It is not too late to clip it now. The amount of the clipping required will depend entirely on the condition of the hedge. If it has been neglected and allowed too much freedom it will be advisable to cut back into the old wood in order to get a good foundation. When this has been obtained it will be an easy matter to keep it within bounds by means of the usual summer trimming.

Propagation of Azalea arborescens by cuttings *(T. Silvester)*.—If cuttings of very nicely ripened growths are taken off now and dibbled firmly in peaty soil and covered with bell-glasses and placed in a cold-frame roots will soon appear. With a sharp knife remove the lower leaves and make a clean cut just below a joint. If a bit of the old wood is attached roots will be emitted much more freely. Water must be given sparingly, and, of course, protection from the sun is necessary until roots have been formed. The bell-glasses should be wiped out every morning, as the moisture which clings to the sides, if allowed to remain, is a fruitful cause of so many cuttings damping-off.

Planting Rhododendrons *(J. Harrison)*.—As your object is to obstruct the view from the road, any vigorous, free-growing sorts with

large flower-trusses of varied colours are all that you require. The undermentioned are free growers, with handsome deep green foliage. All the sorts are cheap, and can be procured in any quantity. R. Cunningham's White is very free-flowering; R. maximum is one of the hardiest of the race, producing good-sized trusses of richly-coloured flowers; R. ponticum, common as it is, is just the thing for your purpose; it produces a grand effect when seen in masses; thrives everywhere; R. Catawbiense seedlings are of vigorous constitution, and vary both in size and colour of the flowers, varieties worthy of special mention being R. Catawbiense Everestianum, fine, bold flowers, colour pale lilac, beautifully spotted and fringed; R. Catawbiense purpureum elegans has large purple flowers of much substance. Planting may be done any time between the end of September and April.

Coluteas and Staphyleas (*Nut*).—These shrubs are quite distinct, and belong to the orders Leguminosæ and Staphyleaceæ respectively. The last-named have opposite pinnate leaves, consisting of from three to seven serrated leaflets, somewhat like those of the Ash, and white, pendulous flowers borne in axillary racemes or panicles. Plants vary in height from 6 feet to 15 feet. The seeds are brown and hard. Bladder-Nut is the common name by which they are known. Coluteas are of more slender and quicker growth than Staphyleas. The leaflets vary in number of from seven to fifteen; they are small, mostly elliptic or obovate, and pale green. The Pea-shaped flowers are mostly yellow or orange-coloured, and are succeeded by lemon-yellow or reddish-brown bladder-like pods, which, when ripe, if pressed between the finger and thumb, explode with a loud noise. The popular name of Colutea is Bladder Senna.

Yew-hedge (*H. S. Trower*).—August is the best month for trimming a Yew-hedge. It is not necessary to prune twice a year, but when it is done June and the latter part of August are generally selected for the purpose.

Chrysanthemums—buds to select (*Amateur Grower*).—You had better retain terminal buds of Source d'Or, Mons. W. Holmes, Mrs. G. Rundle, Mlle. Lacroix, Mme. Martha, Julie Lagravere, Lady Churchill, and James Salter. Each of those just mentioned are seen to best advantage when grown in a free manner and allowed to develop blossoms from terminal buds. For use as cut flowers for vases or for the embellishment of the conservatory the terminal kinds are to be preferred. Elmer D. Smith, James May, Nelson, Judge Benedict, Felicity, Mrs. Richard Jones, W. W. Coles, Mme. Carnot, and John Shrimpton are best from crown buds, and for this reason retain the next buds which appear on the shoots. The buds of Viviand Morel, Mme. de Sevin, Elaine, Mme. Darrier, Gloire du Rocher, and Col. W. B. Smith should also be late crown buds, and the best period for retaining them is during the latter part of the present month. Mme. Sheive we do not know. When the bud shows signs of swelling then detach the growths surrounding it.

Mallows.—A beautiful family of both annuals and perennials, comprising Lavateras, Malopes, and Malvas. The most beautiful of all, however, is Lavatera rosea splendens, a very fine form, the flowers large, beautifully formed, and of a lovely rosy-pink colour. This variety has a tendency to sport to the white form, but when the two colours are growing conjointly the effect is charming. Reaching to a height of 30 inches, the seed should be sown very thinly in clumps well back in the border. The plants being of stout growth need no support. A very curious feature of the two colours is that when gathered and placed in water the rose forms fully expand and the white one closes up. No doubt the best white is Malva moschata alba, a hardy perennial, and the deepest colour is found in a good form of Malope grandiflora.—A. D.

A curious Heath.—I enclose some flowers of a variety of Erica tetralix, which I have never noticed before. It is more curious than beautiful, but I should like to know if it has been noted as a variety?—C. W. Kitson.

*** We never remember seeing this freak before. It is certainly curious.

Dahlia Salisbury White.—This is not a true Cactus-shaped variety, but it is nevertheless a most valuable sort for cutting. The flowers are pure white, neatly formed, and freely produced, the stems long.

PROPAGATING.

SHRUBS FROM CUTTINGS.

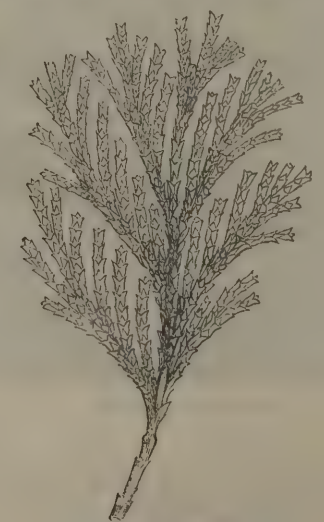
Early in September is a good time for this operation. We have such a vast number of beautiful conifers now, and the varieties of several species are also numerous. The Cupressus Lawsoniana and Retinospora alone make up a large and varied class.

To succeed with conifers one needs care and patience. We are not in favour of the usual

Osmanthus cutting.

practice of grafting upon others of the same species, preferring seedlings or cuttings as a method of increase.

One important item is to have the cuttings quite small. A little more than half ripened, taken from a healthy stock plant, cut off at the base with a very sharp and clean knife, the lower leaves or twigs neatly clipped off with a pair of scissors, and the cutting inserted as quickly as possible, are important matters. We illustrate a cutting of Cryptomeria japonica, and Retinosporas, Cupressuses, Biotas or Thujas may all be rooted in a similar way. Compost and drainage need much attention. Always fill with a third of drainage, then add another third of rough compost, and finish off with the finer



Cryptomeria japonica cutting.

portion of the following mixture: Turfy loam, coarse sand, and a very little leaf-soil and peat. Make the whole firm, give a slight watering, and after the pots have stood for an hour or so add a layer of dry sand, and insert the cuttings firmly with a small dibber or dibble. Put them in thickly, especially towards the edges of the pots. All conifer cuttings need to be kept close, and should not be watered after the first. Stand in a close and cool-pit or frame, and if the soil shows signs of becoming dry at any time either lift the pots out and immerse in water or throw a little between them. Of course you will pay due attention in avoiding damping-off of the cuttings, but if a partially shaded and cool pit be selected there will be little trouble in this direction.

Early in February remove the pots to a very gentle bottom-heat; 40 degs. should never be exceeded. Still keep them close, and do not allow too strong a light until roots are formed. During autumn the cuttings do little more than form callus, and the gentle bottom-heat induces roots to push out from this, whereas in many cases the cuttings would fail otherwise. When roots are formed remove to the cool-frame once more, and pot on very carefully the following autumn. In the ensuing spring plant out into prepared beds until large enough to take their place in the open borders. The Osmanthus may be treated in the same way.

GARDEN PESTS.

Strawberries eaten (*P., Guildford*).—From your letter I expect that your Strawberries were attacked by the spotted snake-millipede (Blanjulus guttatus). The only thing that makes me at all doubtful is that you say the worms were "green." Now, these millipedes—at any rate, when full grown—are of a pale yellow colour, with a row of red spots down each side. This pest often attacks Strawberries in large numbers. They are most difficult pests to destroy, as most insecticides have no effect on them; but a strong solution of nitrate of soda or salt will kill them if it can be made to reach them. If you could fallow the ground I should do so. Give it a good dressing of gas-lime, and keep it free from weeds.—G. S. S.

Warty marks on Pear-leaves (*J. R.*).—The leaves of your Pear-tree are attacked by the gall-mite (Phytoptus pyri). These mites are very minute, and are not visible to the naked eye. The best means of destroying them is to pick off the infested leaves and burn them. In the autumn, as soon as the leaves fall, rake them together and burn them, and dress the branches and young shoots with the following mixture: 1¼ lb of sulphuret of lime, 10 oz. of soft-soap to 5 gallons of water; or spray the trees with kerosine emulsion, made as follows: 2 quarts of soft-soap, 2 gallons of kerosine, and 1 gallon of boiling water. Mix these ingredients very thoroughly together by stirring or churning them for at least a quarter of an hour, then add twelve times the amount of water.—G. S. S.

Diseased Apples (*C. J. Foot*).—Your Apples have been attacked by the caterpillars of the codlin-moth (Carpocapsa pomona). The moth lays an egg in the eye of the fruit, and the caterpillar eats its way into the fruit, feeding on the pips and other parts of the Apple. When full fed, if the Apple does not fall, as is often the case, it makes its way out of the fruit and lets itself down to the ground. The Apple soon begins to decay after this treatment, which is not surprising. As soon as any Apples begin to fall pieces of old sacks or anything else of that kind should be cut into strips about 9 inches wide, folded in half, and then not quite in half again; a strip should be tied or wired round the stem of each tree about a foot from the ground, with the folded edge uppermost. This will afford a convenient shelter for the caterpillar to become a chrysalis in. These bands should be examined every week or so, and any caterpillars or chrysalides found in the folds should be destroyed. If all the windfalls could be picked up at once and destroyed a large number of caterpillars would be killed, but if they are allowed to lie for a day or two the enemy will have made his escape.—G. S. S.

Caterpillars (*Morris*).—The caterpillars feeding on the leaves of your Apple-trees are those of the Eyed Hawk-moth (Smerinthus ocellatus). It is by no means an uncommon insect, though it is not often present in sufficient numbers to do much injury. Besides picking the caterpillars off the trees, the only remedy that I can suggest is turning up the soil under the trees early in the winter so as to expose the chrysalides which are formed in the ground to the action of the weather and the birds.—G. S. S.

Flies in house (*Moab*).—The only means of getting rid of the flies you mention that I can think of is by giving the house a good fumigation with Tobacco-smoke. Probably the flies are not doing any harm.—G. S. S.

Insect eating leaves (*Amateur*).—We cannot guess at names of insects, but if you will forward some we will reply fully to you.

FRUIT.

THE BEST DESSERT PLUMS.

Most amateurs who have either north-west or east walls can grow Plums, and the variety illustrated (Angelina Burdett) is a wall Plum of special excellence. On the other hand, it is not necessary to have walls for many varieties, but the one named is best when grown thus. The variety in question is a rich Gage, purple fruit, in season early in September, and noted for its fine flavour, a variety which thrives well in a good loamy soil. It crops heavily if the young wood is laid in freely each year. By this is meant young wood of the present year's growth, as the variety in question does not bear its fruit so freely on spurs as on new wood. On the other hand, anyone who requires fruit of first-class quality should give the Gage varieties wall cultivation, and there are some half-dozen kinds well worth noting. The Jefferson is not strictly a Gage in the way we usually define this section. It is often called the American Gage owing to its doing well in the States. In our own country it is one of our most profitable wall varieties, and in certain soils succeeds as a standard, is of rich flavour, yellow fruit, and of good size and quality. Another very fine Plum worth room in all gardens is the McLaughlin's Gage, a large, delicious fruit, good as a pyramid, and bearing freely where the Gages fail, doing well as standards or in bush form. The Victoria is the most fruitful of all, and is too well known to need describing. Its red or deep pink oval fruits are soon recognised, and it rarely fails to crop. Pond's Seedling fruits freely. It is one of the largest kinds grown, and of fair quality. There are many others worth noting; for instance, Kirke's is a splendid dessert Plum, a blue fruit, but not prolific. Coe's Golden Drop, the latest Plum grown, is good, and fruits freely. It hangs until November. The Pershore Egg is a grand amateur fruit for tarts and preserves—a very heavy cropper—and Gisborne's is not unlike it in crop and quality, but not so rich in flavour. Probably one of the most valued Plums is Rivers' Early Prolific, on account of its earliness. This is in season early in July, and does well as a bush or standard if worked on the right stock. Some of the French Myrobella Plums are good where others fail near the sea-coast, and are useful for cooking. W.

A dish of Angelina Burdett Plum.

FIG GROWING.

(In Reply to an "Old Subscriber.")

The season for forced Figs is now past, so that this part of our reply will be brief, but much depends upon the management of the trees from now until next October or November. You name the four seasons of the year, but so in most seasons. This variety will thrive where other Gages fail, and is noted for its rich quality. Lawson's Golden Gage is also a fine dessert variety, tender on cold, wet soils, and well worth a wall west or east in cold districts. The fruit is richly flavoured, and in season early in September. Oullin's Golden Plum, also known as a Gage, is well worth a trial if wall space can be afforded. It is a large, oval fruit, rich yellow, dotted with spots and purple on the side exposed to the sun; flesh tender and juicy. The Purple Gage, also known as Reine Claude, is a fruit of medium size, round, and a deep purple colour; the quality is equal to the old Green Gage, perhaps the richest Plum in cultivation. This variety grows well as a cordon, and in favoured localities succeeds as a pyramid; but it is not advisable to plant any of the Gage varieties in soil where these fruits do not succeed. The Transparent Gage is also another fine Plum, and a good amateur's variety on account of its free-bearing qualities. It will thrive in cold localities if given wall protection. It is a large fruit, round, pale yellow, marbled with red, and very richly flavoured; in season early in September. A later fruit is Reine Claude de Bavay, a Green Gage larger than the old Gage, of splendid flavour and a fair cropper, a variety often seen staged at exhibitions on account of its size and quality. It is in season at the end of September. Doubtless the best Plums for amateurs are the Victoria and Pond's Seedling. Of course, these are not of unusual quality, but may be grown much depends upon your resources as to trees and house to grow them in. Only a very few persons can attempt winter culture, so we need not dwell upon this portion. By winter we think you mean the treatment of the trees when at rest. On the other hand, you do not help us much. You do not say if your trees are in pots or otherwise, and that is important.

To get good fruits in spring it is essential to well mature the growth made now. You say your trees produce hard, dry fruits. We think such trees must be planted out, but the pot-trees are at times affected thus, if not kept in check—*i.e.*, keeping gross wood growth well stopped. The trees make so much wood that unless vigorously pinched at from four to six leaves above the fruits the latter die, cease to swell, and the vigour which should support the fruit is lost in the wood, and growth ceases. But there are other evils, one being excess of roots. The roots, unless curbed, cause fruit to dry as you describe. There is excess of top-growth, and this is the case with planted-out trees. Again, certain varieties, notably Negro Largo, even with the best of culture fail when planted out. The trees may be overfed before a full crop is obtained, as this causes dropping of the fruit.

Trees in pots should not receive much water at the start, and they do much best if plunged, also when bottom-heat, if not too violent, can be afforded them. We have seen splendid crops result with fresh leaves as the heating material. To get fruit in April or May start the trees in January or February, give a gentle heat—say 55 degs. to 60 degs. in the day, 10 degs. lower at night—damp overhead daily in bright weather, and give air daily, if possible, if only for a short time. As growth is made stop the shoots from 4 inches to 6 inches from the stem or base, unless you wish the trees to form leaders; if so, more freedom can be allowed, but such shoots will not produce fruit of good quality. Any what is termed useless growth can be cut away, such as weak spray, and give 10 degs. more temperature when fruits are formed, taking care not to give excess at night. Moisture should be supplied freely as growth increases. The above treatment is for first crops.

Now, with good culture a second crop will be forming whilst the first is maturing. The fruit is produced on the point of the new wood, and is always produced in abundance so that thinning is necessary. The same routine must be carried out. When the fruits are ripening more air must be given, and do not syringe the trees overhead. If in pots take care in watering, but beware of dryness, as this is fatal to the young fruits swelling if carried to excess. Trees forming a second crop must be stopped as advised, unless leaders are needed, as the wood now made will be for next season's fruiting for first crop.

Much the same routine must be carried out with planted-out trees. These make more wood, but they carry more fruits, and unless well stopped the fruits do not finish, but dry up and fall off. Another point with planted-out trees is that if too vigorous the first fruits drop or shrivel. This is caused by excess of moisture, insufficient air, syringing overhead, or too high temperatures at night, and is more troublesome with first crops. Summer-fruiting plants—that is, those not forced and which bear only one crop—are less affected; but the fruits shrivel if the growths are not well stopped, or the root-run is too liberal and food given too freely. We need not go into autumn culture, as the main point is to mature the wood made. Cut out crowded shoots, and ripen those needed for next season's crop. Pot-trees when the wood is ripe do well in the open, and should get full exposure and ventilation, with plenty of water at roots to prevent shrivelling. Pruning, of which there will be little in winter, is best done as soon as the leaf falls. This, if stopping during the summer, removal of useless wood, and training on a few main shoots if required were well attended to, will consist of what may be termed thinning, or taking out old wood to give new growth ample space.

Apple Lady Sudeley.—Amongst early dessert Apples this is certainly one of the best, for it is not only handsome in appearance, but the flesh is sweet and juicy. It is at its best in August, and forms a very striking dish on the table. It will this season be more than usually valuable to those who have a good stock of it, owing to the almost total failure of all hardy fruits, except Apples.—J. G., *Gosport.*

Pear Brockworth Park or Bonne d'Ezee is an excellent October Pear. Grown either as a bush-tree in the open or as a cordon against a wall it is equally good and prolific, the fruits attaining a large size if well looked after. In appearance they are quite distinct, the colour being a pale green, turning to yellow when ripe, the surface very evenly dotted with light brown specks. On the side facing the sun the fruits become flushed with crimson, which renders them very handsome. The flesh is white, tender, juicy, and the flavour first-rate.

Plum Jefferson.—This Plum stands unrivalled for all-round purposes, its flavour being so good that the most fastidious can hardly find fault with it. For bottling whole it is equal to Golden Drop, and a fine sweetmeat the fruits become when properly preserved in this way. It is a most prolific variety, bearing equally as well as a standard, bush, or a trained tree on walls. The fruits on the bush-trees are extra well coloured this season, the sunny side being mottled and flushed with dull crimson, and the flavour is exquisite.

Cactus Dahlia Earl of Pembroke is an extra fine variety; colour plum, with quite a velvety appearance. Its flowers, which are not over large, and have the twisted Cactus form so much admired, are thrown well out of the foliage, a point that should always be insisted upon. The growth of the plant is also excellent.

OUTDOOR PLANTS.

Stock Princess May.—Few things are more beautiful than good Stocks—the more so when a large percentage of them are double. I am a lover of Stocks, so grow a good number of kinds, and this year I obtained a packet of seed of the new variety Princess May. The colour of the flower is creamy, and every plant is a counterpart of the other, as to height, etc. It is very dwarf, just suited to small beds, and would make a good Stock to mix with other things. It belongs to the Wallflower-leaved section. With me 80 per cent. are double. The blooms are large and open, with a strong scent, and the plant proves to be of a good branching character. Seed was sown early in April in a box placed in a frame, and the seedlings pricked out on a hard bottom, when strong enough, under a garden light, till big enough to plant out.—J. Crook.

Tufted Pansies—prolonging their period of flowering.—The dews we are now getting have been very beneficial to these flowers. The plants are flowering profusely. Under such conditions they must, of course, exhaust the more soluble properties of the garden soil, and on this account it is necessary, if the Tufted Pansies are to continue in full beauty, that something stimulating be given at the time of watering. There are many patent manures which will answer the purpose admirably, and taking them generally it would be unsafe to dissolve more than half an ounce to a gallon of clear water. This should first be soaked for a few hours, and afterwards thoroughly dissolved before watering with this stimulant or food. A change will soon be noticed in the appearance of the plants, and if this be repeated once or twice a week, according to the condition the plants may be in, they should be in a healthy state for a long time to come. Another important fact to be seen to is to remove all spent blossoms regularly, and on no account allow seed-pods to remain, as these quickly impoverish the plant and cause it to cease flowering. It is a good plan to pick the flowers as often as convenient.—D. B. Crane.

Coreopsis grandiflora.—It is doubtful whether any plant could flower more freely than this. The myriads of flowers and buds make a brave show. In those gardens where a large daily supply of cut flowers is needed this should be largely grown for cutting. Its clear canary-yellow flowers are very pleasing in a cut state, and the plant may be raised quite freely from seeds.

ORCHIDS.

Culture of Dendrobium nobile (*M. A.*).—Your Dendrobium nobile may be grown either in a pot or Teak-wood basket, which should be filled to about three-fourths of its depth with clean drainage; the plant will root freely in a thin layer of peat and Sphagnum Moss in about equal parts. Keep the plant well up to the light in the stove or Cucumber-house whilst growing and afford copious waterings each time the compost becomes dry. After growth is completed, which may be determined as soon as the terminal leaf is fully made, place the plant in a cool vinery and gradually expose it to full sunshine so as to fully ripen the newly-made pseudo-bulbs. After the plant has been removed to its resting quarters do not withhold water too quickly, but decrease the supply gradually. When the bulbs have become hard and solid then afford just sufficient water at the root to prevent the new bulbs or leaves from shrivelling. As soon as the flower-buds appear, again gradually increase the amount of water and place the plant in an intermediate temperature, keeping it near to the light so that the colour of the flowers may come clear and bright. —W., *B.*

D. Fytchianum (*Inquirer*).—This should be kept in the warm stove all the year round and be plentifully supplied with water at all times. It grows best in small shallow pans that may be suspended close to the roof glass. The plant delights to be in a position where the rays of the sun cannot touch it, it being susceptible to permanent injury if unduly exposed to strong sunshine.—W., *B.*

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GARDEN WORK.*

Conservatory.

Camellias are now setting their buds, and must not be permitted to get dry at the root, or the buds may drop. Weak soot-water may with advantage be given to both Camellias and Azaleas for two or three weeks now. Shake out and cut back Pelargoniums and repot in clean pots of same size. To do Pelargoniums well they must have good loam, and this be enriched according to its quality with old cow-manure, and made reasonably porous with sharp sand. It is a good plan when potting to put a pinch of soot just over the drainage to keep out worms. Zonal Pelargoniums intended for winter-blooming should now be in their flowering pots, which should not be too large in proportion to size of plants. When overpotted they never do so well. We grow most of ours in 5-inch pots. A few of the largest go into 6-inch, but not many. When the pots are well filled with roots, a little weak stimulant can be given. Sow more Mignonette. Sow thinly in 5-inch and 6-inch pots, and when the young plants come up, thin to five at equal distances apart. Here, again, good loam is essential to do Mignonette well. Good soil is necessary, and it should be made from about two-thirds best loam to one third very old cow-manure, one-eighth sand, and a sprinkling of soot and old plaster. Of course, Mignonette may be and is grown without much pains being taken with it, but it will not compare with well-managed plants. It will soon be time to reduce the growth of the most luxuriant creepers. The days are shortening fast, and plants growing under a heavy shade will not ripen their wood. This refers to things planted permanently in the borders: Acacias, Luculia gratissima, Daphnes, and other flowering subjects which must have light. It is necessary to be careful in the watering now. Things are dying fast in these hot days, and if the rootlets get pinched with drought now the growth will lose colour, even if the plant should survive.

Stove.

For the most part winter-flowering plants are undergoing special treatment to fit them for the work they have to do. Stove subjects should be cooled down. This is usually done by moving to a cooler, drier house. Eucharis Lilies, Euphorbias, Poinsettias, Begonias, Justicias, Eranthemums, Epiphyllums, Shrubby Hibiscuses, and many other things which can be made to flower in winter, are now undergoing their ripening process. Franciscas, especially F. calycina, are charming things in winter, and they flower freely when well-ripened. In hot summers I have seen them turned out altogether for a month, and when taken back to the stove they have been literally covered with purplish-mauve blossoms. The flowers work up very well when wired. I remember the time when the Scarborough Lily (Vallota purpurea) was grown in the stove, but it is better without much artificial heat and should now be outside ripening. This is one of the brightest plants we have for autumn for the conservatory or the rooms. That fine old plant Rondeletia speciosa is nearly always in bloom.

Ferns.

Seedlings raised in February will now be coming on fast and should be in separate pots. There is a demand now for Ferns in small pots. Little Maidenhairs or Pterises of various kinds are among the most useful for small pot work, and they have some amount of decorative value, even when in thumbs. Thousands of Ferns in thumb-pots are sold during summer and autumn, and other plants besides Ferns, including the common Asparagus, are used for small decoration. The common Asparagus is a pretty plant in a young state. Ferns intended for cutting should not be overshaded now. Soft fronds of Maidenhairs wilt and fade directly. Fern-fronds should be placed in water for a time before using them for bouquet work. Any Fern which requires more pot-room should have it now. Fern growers have no regular time for potting, as young plants are shifted on whenever they require it, and when heat is given freely this work goes on all winter. I always think it is wasting time to try to resuscitate Maidenhairs; better throw them out and rush on young plants from spores.

Winter Tomatoes.

Strong plants of suitable varieties set out now in boxes or good-sized pots, or planted out in a sweet, open border, will bear freely all winter and spring. We have been successful with Ham Green Favourite, and Prelude, though small, is a very useful winter variety. No fire will be required at present, but there should be the means of keeping up a temperature of 60 degs. later on. Another way of getting a supply of Tomatoes in winter, where the old plants are healthy, is to train in the young shoots which usually break out up the stem when the fruits are gathered. When Tomatoes are well done, a second crop, almost equal to the first, may be obtained if there is heat enough to ripen the fruits. The ventilation of Tomato-houses must be sufficient or the mildew will soon attack the foliage, and then the second crop will suffer.

Mushrooms.

It is too hot now for Mushrooms in buildings, unless the buildings are below the ground level. But beds may be made in the shade of buildings outside, and as manure is usually cheap now, make the beds a little deeper. Ridge-shaped beds are best, about 3 feet wide at base and 2½ feet high to the top, with sloping sides, the whole to be made firm, and spawn inserted when temperature is steady between 80 degs. and 90 degs.

Window Plants.

Begonia Weltoniensis is a pretty summer-flowering variety, easy to manage. It is always in evidence at cottagers' shows. Tuberoses are flowering freely now under cool treatment, and may easily be grown in a cottage. It is rather too tall for the window, but three bulbs in a 5-inch pot makes a sweet subject for the room. Place Scarborough Lilies outside to ripen. Pot Freesias.

Outdoor Garden.

Give liquid-manure to Dahlias, Roses, Hollyhocks, Asters, Zinnias, Marigolds, and other florists' flowers from which exhibition blooms have to be cut. Remove every seed-pod and sucker from Roses. In some places the red-fungus has appeared on Roses, especially where the ground has got into bad condition from much treading in wet weather in gathering the blossoms. Roses are grown chiefly for cutting, and are wanted as much in wet weather as dry. There is no known cure for red-fungus, but it comes for a season or two, maybe, and then disappears for a time, without any particular causes, so far as can be seen. The best remedy is to plant in a deep, thoroughly-worked soil, fairly manured. Many at this season obtain buds from a distance to bud their Briers and Manettis, but the shorter the distance and the sooner they are put in after they arrive the better, and the bark should never be permitted to shrink. Sow hardy annuals for filling the beds next autumn or spring. Sow in rather poor sandy soil, and transplant when large enough.

Fruit Garden.

Those who are troubled with mildew on late Grapes might give the XL All mildew-wash a trial. Make sure that all the affected berries are dressed with it, and see that the roots are healthy and moist, and the atmosphere sweet and buoyant. This means that the ventilation must be carefully managed, and no stuffiness permitted, especially in the morning. The time to do a little extra forcing is in the afternoon, from half-past three or four o'clock till sunset, or a little later. Then give the smallest chink of air along the ridge, to let out any stagnant impurities which may accumulate during the night. Late Peaches on walls should have a good soaking of water in which a little stimulant is mixed. Light summer rains are seldom of much use for moistening the roots of trees growing against a hot south wall. Strawberries in pots must stand thinly on a bed of ashes or on boards, so that worms cannot enter, and all runners be cut off. Sometimes plants may develop more than one crown; the weakest should be removed. For forcing one good crown is better than more. Bud young fruit-stocks, such as Plums, Peaches, Cherries, Apricots, and Pears. Bud in with sufficient firmness, and close the bark firmly over.

Vegetable Garden.

All Potatoes which are ripe enough should be lifted. When there comes rain super-tubering will set in and the quality be injured. As regards late sorts, we must risk it, but early sorts should be taken up; and if the land is in good condition another crop may be planted: Spinach, Onions, Celery for spring—the latter to be pushed along with liquid-manure. A dusting of soot occasionally will keep off the Celery-fly. Bind hay-bands round the bottoms of Cardoons to start the blanching; the same course may be taken with Celery. I have seen Celery blanched with hay very effectually in summer. Sow Radishes in rich soil now in drills, and mulch between the drills with Moss-litter-manure. French, Breakfast, and Turnip varieties only should be sown now. Tomatoes outside are ripening, and a few of the bottom leaves may be removed or shortened back to let in the air and sunshine. Stop all plants now, as fruit set after this date will not ripen. Earth up winter greens of all kinds; the ridge of earth helps to support the stems. Thin Turnips to 15 inches apart, so that the leaves may be dwarf and sturdy, and afford more shelter in winter. Gather all Peas and Beans as soon as fit, and cut Cucumbers and Marrows before they get old, unless seeds are required. E. Hobday.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 16th.—Earthed-up Celery, and drew a little earth up round earliest-planted Leeks. Put in cuttings of various bedding plants. Finished budding dwarf Briers and commenced Manetti-stocks. Shifted Primulas and Cinerarias into 5-inch pots. They are now in cold-frames, with a little whitewash dusted over the glass to break the sun's rays. Tied Dahlias, thinning the buds; earwigs are troublesome.

August 17th.—Potted off seedling Aralias. Shifted on young Ferns of various kinds. Repotted Kentias and other Palms. Picked flower-buds from Zonal Pelargoniums intended for winter flowering; all are now in flowering pots on coal ash-beds in the open air. Filled a frame with Carnation-cuttings; layers are best, but there are always some growths which are not easy to layer; these are made into cuttings.

August 18th.—Removed old wood from Raspberries and thinned young canes. Tied up autumn-bearing Raspberries to keep fruit off the ground. Planted a house with Tomatoes for winter bearing, Ham Green Favourite being the variety; the plants are all sturdy and robust, and just showing the first truss. Planted in loam in troughs running along the sides of a span-roofed house, can be fed when necessary. Put in cuttings of Asparagus plumosus nanus in warm case.

August 19th.—Looked over Tomatoes outside; shortened back some of the lower leaves and removed all side shoots and top growths. Filled a frame with cuttings of choice evergreen shrubs, including conifers, Euonymus, Escallonias, etc. Sowed a collection of hardy annuals for spring blooming. Some of the most useful of these are Limnanthes Douglasi, Silene compacta, Saponaria calabrica. Pretty well all the Clarkias and Godetias are hardy enough to stand the winter.

August 20th.—Sowed Early London, Walcheren, and Veitch's Autumn Giant Cauliflowers. Tied Chrysanthemums, rubbed off side-shoots. Many of the Japanese buds have now been selected; incurved will wait longer. If taken before September they come too early. Top dressed with turfy loam and a little artificial manure. Trapped earwigs Put in Pansy-cuttings of various kinds in frames placed in shady situations. Shook out and repotted cut-down Pelargoniums.

August 21st.—Grubbed up an old Strawberry plantation and planted ground with late Broccoli. Thinned Passion-flowers and other fast-growing climbers in conservatory. Moved a lot of Lilium lancifolium album and rubrum which had been plunged out in conservatory. Cut herbs for drying. Planted a lot of Parsley-roots on border where a frame can be placed over them when frost comes. Some of the largest leaves were cut off when transplanting. Routine work in flower garden—picking, pegging, tying, etc.—takes up much time now.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1301—**Most fragrant Roses and Carnations.**—Will you kindly oblige me by naming in Gardening twelve of the most fragrant Roses (not the Tea-scented but the otto of Rose scent), and also Carnations and Pinks?—O. T. Raymond.

1302—**Plants under Fir-trees.**—What are good things for carpeting the bare ground under a row of Fir-trees, and when should they be sown? When is the best time to move common Ferns, Bracken, etc., and to plant Broom, Musk, and Solomon's Seal?—G. O. L.

1303—**Best flavoured Gooseberries.**—I am a weekly reader of your instructive and interesting magazine, and will feel obliged by your giving me the names of the best-flavoured Gooseberries—four red, four white, four yellow, four green? Please put names in order of merit.—Edgbaston.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1304—**Charcoal** *(Inquiring Mind).*—In the spring, when the surface-soil is removed and replaced with new.

1305—**Narcissus Stella** *(New Subscriber)*—Narcissus Stella is the correct N. incomparabilis Stella. There is no white Stella.

1306—**Tobacco-plants in winter** *(M. E. S.).*—Tobacco-plants are not hardy, but withstand some winters. If severe they would succumb.

1307—**Diseased Hollyhocks** *(M. Lucas).*—The plants are undoubtedly diseased. See reply in Gardening to "T. E. H.," July 31st last, page 315.

1308—**Seedling Hollyhock** *(F. Midlane)*—A very delicate rose and pretty flower. It is double, but not coarse. A seedling well worth keeping.

1309—**St. Brigid Anemones** *(New Subscriber)*—Look in the advertisement columns of Gardening. But why not buy a packet of seed and raise your own tubers?

1310—**Seedling Carnation** *(Carna).*—A pretty flower, but no advance upon the many kinds in cultivation. A packet of good seed would give flowers as distinct.

1311—**Double Poet's Daffodil-flowers failing** *(New Subscriber).*—One of the causes of the buds of Narcissus poeticus plenus going blind is dryness at the root, induced by too shallow planting.

1312—**Strawberry-runners** *(W. E. T.).*—If the runners are strong as many as half-a-dozen can be taken from one. The fourth or more is equal to the first if strong and well supplied with roots.

1313—**Tomatoes sickly** *(D. U.).*—The plants are diseased. Keep the house drier, and sprinkle the surface-soil with sulphate of ammonia, 1 oz. to square yard. Pick off badly-infested leaves and burn them.

1314—**Two year-old Carnations** *(H. Gope).*—Two-year-old plants out-of-doors will give a quantity of bloom, but not so good in point of quality as one-year-old plants, obtained by layering early in August.

1315—**Treatment of hard tap-water** *(F. Quick).*—Your water will be quite fit to use after a few hours' exposure to the sun and air. It will, however, lose its hard nature sooner if atmospheric air be introduced.

1316—**Protecting Strawberries** *(New Subscriber).*—The Bracken is not intended to protect the plants by covering the leaves, but by placing it on the soil between the rows it protects the roots from severe frost.

1317—**Gooseberries not fruiting** *(Mrs. Pratt).*—Your Gooseberries are more likely to be a failure from non-setting of the flowers in early spring than from pruning, or they would have been the same in previous years.

1318—**Lily flowers, seedling Lettuces, etc.** *(S. Cottill).*—Certainly, if you keep seedling Lettuces until dwarf and attenuated they will be of bitter growth and run to seed quickly. Far better sow a small batch where the plants can grow to maturity without transplanting, especially during hot weather. Let your Lilies dry off gradually, then stand the pots beneath a bench in cold greenhouse until new growth starts again.

1319—**Carnations "going off"** *(J. H. W.).*—There is no disease, but the plant sent has died through the effects of a bad season early in the year; and the hot weather has caused a collapse. It is a bad class of layer also.

1320—**Gunnera** *(Mrs. Pratt).*—Give the plant more water. It enjoys a damp but sunny situation. We would not lessen the number of leaves; if well grown they will come large enough, and the constant bleeding from cuts will probably cause an even more stunted growth.

1321—**Plumbago-leaves withering** *(Captain K.).*—We should look for another cause than drought, seeing that the plant flourished in the same position last year; probably dry, or overwatered with a strong liquid-manure. Has the stem become injured in any way near the base?

1322—**Weedy garden** *(J. Fraser).*—We do not recognise the weed sent, excepting that we have frequently met with it in damp and cold soils. You cannot do better than to worry it incessantly, both at top and root. Why not forego a crop and keep the ground well worked?

1323—**Carnation failure** *(Westwood).*—We can only suggest the excessively hot and dry weather as the cause of your failure. If you can supply a thorough watering at night for a few times, and then mulch with short stable-manure from peat-Moss-litter, it will probably result in an increase of "grass."

1324—**Gourds not growing** *(M E S).*—The varieties of Gourds are so numerous that you may have one of the dwarf, stocky kinds. Poorness of soil would account for its slow growth. Mulch the surface-soil 2 feet from the stem with stable-manure, and give liquid-manure freely, thus hastening growth.

1325—**Growing Primula cashmeriana** *(No Name)*—Damp is their greatest enemy in winter, and must be kept off by a sheet of glass raised upon pots or pieces of brick. In the summer you can scarcely give it too bright and sunny a position, and at this season abundance of water must be supplied.

1326—**Tomatoes unsatisfactory** *(A. B C.)*—The defective plant is in ill-health; the roots are not in a flourishing state. Dissolve 2 oz. of sulphate of iron in 3 gallons of water, applying it to the roots at once. If a change does not quickly take place in the colour of the leaves pull the plant up and burn it.

1327—**Repotting Ferns** *(H. R. Matthew)*—Maidenhair Ferns growing in pots, say 3 inches in diameter, should be shifted into pots 2 inches larger. Peat and loam in equal quantities, with a free admixture of sharp silver-sand, is a suitable compost. Pot firmly, thoroughly soaking the roots a hour previously to potting.

1328—**Plants for porch** *(Cyclops).*—We do not see why you could not succeed with Ferns in cork, provided you attend to the water supply with due care. But will it not make your porch too narrow? The self-clinging Ampelopsis Veitchi would soon make a good show, and will cling very closely to any plaster—even smooth glass.

1329—**Mildewed Roses** *(Briar Pipe).*—As we have frequently pointed out, it is almost impossible to battle against mildew when plants are in the open air and subject to great atmospheric changes. Flowers of sulphur 2 oz., and soft-soap 1 oz. to the gallon makes a capital wash, and is more effectual than when sulphur is dusted over only.

1330—**Ferns for stage beneath conservatory** *(E. B. L.).*—The black Maidenhair, Scolopendriums, and Pteris serrulata may thrive with you, but it is not a favourable place if liable to much drip. Try the greenhouse Mosses; these will not object to shade or drip, and if placed among pieces of clinker or sandstone will soon make a pretty carpet.

1331—**Twelve show Pansies** *(Greenhorn).*—William Fulton, J. McClennan, Bushy Beauty, Mrs. King, Winnie Irvine, Miss Fulton, Mary Campbell, Dr. Strachan, James Dalziel, Bessie Smellie, Colonel Stirling, and Leviathan. The above sorts should provide you with a good representative selection of the different selfs and ground colours.

1332—**About Figs** *(Fig-tree).*—Transfer the Fig-tree to an 8-inch pot at once, using a compost of three parts loam to one of horse-manure and old lime-rubble. Do not disturb the roots; remove the drainage and carefully place the plant in the fresh pot. We suspect your other plant suffered for the want of water, hence the leaves dropping; or perhaps it had too much.

1333—**Weed on lawn** *(C. H.).*—Give the lawn a thorough scratching with a sharp-toothed iron rake in February, pulling out as much as possible of the objectionable weeds—a form of Achillea. Cover the lawn with soil and rotted manure a quarter of an inch thick. The first week in April sow lawn Grass-seed at the rate of 20 lb. to the acre; rake and roll well.

1334—**Advice about Marechal Niel Rose** *(Basquaise).*—We would prefer to cut the tree hard back and feed soil in the box. Whatever you put near the Laurels will be monopolised by them. It might be well to start with a fresh plant, and take that opportunity of supplying fresh compost. You must keep the plant free from insects, or it cannot thrive.

1335—**China Asters dying** *(Robert Neish).*—In some soils, especially that which is light, Asters are much addicted to premature dying, owing to a fungoid attack at the base of the stem connecting on to the roots. The only remedy is prevention, by the free use of soot and lime sprinkled on the surface after planting, as well as by mixing with the soil at planting-time.

1336—**Lilium auratum** *(J. W. Smith).*—This Lilium is unquestionably auratum. The cause of premature decay is owing to two things: First, the bulbs may have been weakly in constitution; secondly, the soil may have been unsuitable—viz., heavy and retentive of moisture in the early spring. Deep, sandy loam or peat is the best compost for this Lily, especially the latter.

1337—**Treatment of alpine Strawberries** *(Fancy).*—Plant 1 foot apart in beds 4 feet wide in deeply dug and well-manured soil at the end of the month. Stable-manure, half-decayed, is best for this Strawberry. In November mulch the surface with half-rotted leaves or vegetable refuse for winter protection. Remove all runners if extra stock of plants is not required.

1338—**Annuals for autumn sowing** *(M. E. S.).*—The following annuals might be of service to you: Antirrhinums, Aquilegias, Cacalia coccinea, Cornflower Collinsia bicolor, Dianthus chinensis, Erysimum Arkansanum, Gillia tricolor, Kaulfussia amelioides, Linum grandiflorum, Nemophila insignis, Nigella damascena, Platystemon californicus, and Sanvitalia procumbens.

1339—**Marrow-leaves turning yellow** *(Abe).*—In what sort of soil are the Marrows growing? This may account for the leaves dying so quickly. Instead of giving a small quantity of water daily give the plants a thorough soaking at the roots, then give no more for a week. If the plants are growing on a dry hillock mulch the surface with half-decayed stable-manure previous to watering the plants.

1340—**Raspberries unsatisfactory** *(Babington).*—The last two seasons being dry have not been in favour of large fruit upon Raspberries. Mulch the surface with manure directly light is let into the base of the plants and soil by the cutting out of the old canes. Very often the surface roots are injured by sudden exposure of the soil to the sun and rendered too dry. Perhaps your canes are worn out? If so, make a fresh plantation.

1341—**Flowers in greenhouse in winter** *(Durham).*—Double and single Primulas, Cinerarias, Mignonette, and a few Zonal "Geraniums" would give bloom without much trouble; an Arum Lily or two would add variety. Roman Hyacinths, Paper-white Narcissus, Sweet Jonquils, and Lilium Harrisi would give you flowers in the early days of the year. Lachenalia pendula is an interesting and free-flowering subject, and so is Gladiolus Colvillei The Bride.

1342—**Preparing ground for Strawberries** *(T. B.).*—Runners ought to be always procured from free-fruiting plants, or what is known to be a free-bearing variety, like Royal Sovereign or Sir J. Paxton, for instance. Trench the soil 18 inches deep, keeping the present surface still on the top; add plenty of manure, and to the clay also add wood-ashes and decayed vegetable refuse to lighten it. The end of August is a good time to plant; runners laid now will be ready by that time.

1343—**Vine foliage** *(Novice).*—Where the Vine-rods are not more than 2½ feet apart, two leaves beyond the bunch are enough to leave. When Vines are wider planted, three or even four leaves beyond the bunch may be left to advantage. The point is this: allow as many leaves as there is space for them to develop thoroughly. One perfect leaf is of more value to a Vine than half-a-dozen immature leaves. It is usual, too, to leave lateral growths above the bunch, pinching at one leaf.

1344—**Seaweed for Strawberries and planting Cabbages between them** *(A Constant Reader).*—Nothing should be grown between rows of Strawberries; Cabbage especially would rob the Strawberries. Seaweed is a good manure for this fruit now and again, and for general use in a garden, especially if the soil is sandy; but to continue this yearly without a change would not be wise. Mulch the Strawberries with farmyard-manure to protect them from frost.

1345—**Tecoma Smithi** *(A Lover of Flowers).*—Tecoma Smithi is one of the best autumn and early winter-flowering plants for the greenhouse. The leaves are beautifully pinnate, and surmounted by large heads of orange-coloured blossoms. It is as easily managed as a Chrysanthemum, and the seed can be sown at any time. It would be better to sow in April for winter flowering, but if sown now and grown on freely they should flower early in spring. The flowers are long and tubular and about an inch in diameter.

1346—**Disqualifying flower-show exhibit** *(J. Bell).*—If the classes in which you competed were for a specified number of kinds or varieties, say twelve, and you staged this number and Gypsophila along with each bunch, and in addition to the requisite number, you should be disqualified. If, however, the classes were for a box, or boxes, of garden flowers, irrespective of number, then you ought not to be disqualified. The secretary had no right to order the judges to disqualify—they were responsible, not the secretary.

1347—**Anemone thalictroides** *(New Subscriber).*—This should be Thalictrum anemonoides. It has very beautiful white flowers, delicate and fragile looking, much like the Wood Sorrel (Oxalis) that grows in our hedges. A. Hackeli is probably Halleri, one of the Pulsatilla section, with purple flowers. A. trifolia is a Mediterranean species with white flowers. Anemone sulphurea and alpina are merely variations of the same plant. They should have deep, rich soil; clay is not suitable in our moist climate.

1348—**Mildewed Grapes** *(H. Griesbach).*—The mildew on Grapes is the result of neglecting the vinery, and by the Grapes being exposed to too much draught, and by too low a temperature. Remove all badly-affected bunches, dusting the remainder that are slightly affected with flowers of sulphur. Mix some sulphur also with water to the consistency of paint, and with it coat the Vine stems. Keep the atmosphere rather dry, and give a night temperature of 60 degs, with a rise by day of 20 degs., with air admitted through the roof ventilators.

1349—**Names of Roses** *(Lincolnshire).*—The question as to which new or old Roses should be used as standards depends upon the habit of growth. All of those named in our notes in the issue for July 31st were well-suited for dwarfs. Mrs. Rumsey is one of those exceedingly useful Roses that cannot well be put to the wrong purpose. There is such a variety of growth, even among the short list named, that we cannot say the whole would be useful for any one purpose. If you say which variety you most wish for more information about we will endeavour to give it.

1350—**Annuals in the winter** *(A Lover of Flowers)*—You would not do much with annuals for winter show in the greenhouse, but if your Zonal Pelargoniums, or "Geraniums," are stopped by picking off flower-trusses until October, they will make very bright and showy plants for your greenhouse through the coming winter and early spring. Few subjects could be better for the temperature you mention (45 degs. to 50 degs.). Yes, cut back the Sparmannia now, and root the tips if you want an increase, treating them the same as we advised for Fuchsias, but making a much larger cutting. Feed and repot the plants directly new breaks of growth appear.

1351—**Pruning cordons** (*Be*).—Summer pruning of all fruit-trees consists in shortening to within 3 inches of the base all superfluous shoots of the current season's production. The object of summer pruning is to enable the branches and fruit spurs to thoroughly mature their growth, and thus produce a full crop of fruit. By pruning in this way in July, the sun, air, and wind can play among the leaves so much better and thus hasten maturation, without which no fruit can be produced. All the leading shoots, or any required to fill in gaps to perfect the shape of the tree, should be left intact. Winter pruning consists in cutting back to within one eye of the base the shoots summer-pruned. We hope you will now grasp the meaning of the two methods of pruning.

1352—**Japanese flower-seeds** (*Bridge End*).—The Japanese Cockscomb is probably a stove annual, as is Trichosanthes colubrina. These had better be sown at once, instead of waiting another season, and kept in the stove. It would have been better, however, if "Bridge End" had been able to sow in the spring. Pardanthus chinensis is a half-hardy perennial. This may be sown in pans, wintered in a cold-frame, and planted out in a sheltered position in spring. Patrinia scabiosæfolia is a hardy biennial and may be sown in the open ground at once. Of the Morning Glory it is impossible to advise. The name is too vague, comprising as it does the whole Ipomœa family of 100 or more, some of which are hardy and some stove plants, some annuals, and others perennials. It would be as well to try this under various treatments. The Dianthus may be D. superbus. Sow now in pans and plant out in spring. Some of the above are preferably sown in the spring, but in this case, where the seeds have been probably gathered a year, a wait of another six months would make their germination more doubtful.

1353—**Raspberry-plants.**—What is the best aspect and soil for making a new bed of these?—Pat.

*** *A western aspect is best for Raspberries; deep sandy loam the most suitable soil, especially if moist.*

1354—**Poplar-tree-roots on lawn.**—The roots of some Poplar-trees in my garden are sending up shoots in the middle of the lawn and even beyond it. How can I best stop this without killing or injuring the trees?—R. T. B.

*** *The removal of the Poplar-tree suckers by digging them up will not interfere with the trees themselves. Continual removal of the shoots close to the ground will weaken them so much that they will cease to grow. This will not interfere with the lawn, as that would not be desirable at this season of the year.*

1355—**"Geranium"-cuttings**—Is it too soon to take cuttings of "Geraniums," etc.? I have a lot of lanky ones, and want to get rid of them, and it seems a pity to throw them away, as they are healthy.—Photo.

*** *Now is a good time to take "Geranium"-cuttings; they strike readily out-of-doors in sandy soil, and are easily lifted and put into small pots at the end of September for wintering. Of course, they will strike equally well in pots, but there is more trouble in supplying them with water.*

1356—**Drying bulbs.**—How, and to what extent, should bulbs and roots (Narcissi, Chionodoxa, Freesias, and Ranunculi) be dried? Should Ranunculus roots be put in the sun?—C. L.

*** *All the bulbs you name may be exposed to the sun to dry them thoroughly, say a couple of days. After that place them in a dry, cool room in paper-bags until planting-time comes round again in September and October.*

1357—**Fowl-manure for Strawberry-bed.**—Will you please tell me through Gardening if fowl-manure is best for a Strawberry-bed?—George Pittock.

*** *Fowl-dung is a powerful manure, and should be used sparingly. For sandy soil cow-manure is best; horse-droppings are good for sandy soil.*

1358—**Vegetable Marrow-flowers dropping.**—What is the cause of my Vegetable Marrows turning yellow and dropping off when about 2 inches long? I water them at the roots with liquid-manure about three times a week.—Beginner.

*** *It is solely because the female or fruit-bearing blossoms were not fertilised. In all probability there will be plenty of false blossoms later, and the bees will attend to this work. Do not overfeed Marrows in their younger stages; it does not tend towards fruitfulness. See note in issue for July 24.*

1359—**Carnations for border.**—I have a border, 20 feet by 4 feet, which I wish to plant with Carnations. The names of twelve good sorts would oblige; also when to plant? And how far apart ought the plants to be?—Carnation.

*** *You will find a good variety of colour in Duke of Orleans, Mephisto, The Pasha, Duchess of Fife, Ketton Rose, Lorna Doone, Alice Ayres, Germania, Empress, Horace, Mrs. Reynolds Hole, and Raby Castle. Procure sound layers and plant in September, or else delay until late in March or early April, according to season. Be sure to have the soil free from insects. Two feet apart each way for strong growers, and 18 inches for those of medium habit, is very suitable. Read our notes in the issue for July 24th.*

1360—**Vegetable Marrows not fruiting.**—My plants, the growth of which is thoroughly healthy and luxuriant, are, with an exception here and there, producing male flowers only. Is this the fault of the sort planted, or of the method of cultivation; or is it pure chance?—J. B.

*** *If the variety is a good one fruit should be freely produced. Give the plants a thorough soaking with liquid-manure to hasten growth and determine whether the plants are deserving of retention.*

1361—**Virginian Creeper in tub.**—I want to put a Virginian Creeper in a tub. What is the best time for transplanting? May I paint the tub? Is green bad for the plant? Somebody told me so. Then what colour is the best? May I use any kind of paint?—A Constant French Reader.

*** *Any time will do if the plants are from pots; otherwise choose early spring. It is immaterial what paint is used. Other questions shall be answered as quickly as possible.*

1362—**Clubbing.**—Will you kindly give the cause of clubbing? I have a large bed of sprouting Broccoli, and although the plants are large I find them all with roots like Turnips. Is it too late to put this useful vegetable in now? Some years ago I heard that gardeners dipped the plants into some stuff before planting.—A. Nash.

*** *Clubbing of the Brassica tribe, of which sprouting Broccoli is a member, is prevalent in gardens where lime is deficient. Abundance of lime added to the soil when digging is a means of prevention. Make lime, soot, and clay into a thick puddle, and dip the roots into this before planting.*

1363—**Failure of Melons.**—I should be much obliged if you could suggest the reason why my Melons have failed? They are planted in a frame attached to a greenhouse heated by pipes, but the heat is not kept up in the summer. The aspect is south. The plants are very healthy, but the fruit, when it gets the size of the top of one's thumb, turns yellow and drops off. They are watered once a day, and the frame is shut up about four o'clock Thanking you in anticipation.—E. Carmichael

*** *Too much atmospheric moisture when the plants were in bloom, coupled with a want of proper fertilisation of the blossoms, is the cause of the fruit turning yellow and dropping off.*

1364—**Paint for greenhouse.**—Will you kindly give me information as to how to proceed in the following case? I have several forcing-houses, greenhouses, and vinery that my gardener usually paints annually. The paint we buy ready mixed hardly stands the year; it appears to be very inferior. Could you inform me how to mix it? Providing that I bought the white lead what other ingredients are necessary to make the paint?—Old Subscriber.

*** *Three coats of paint given once in three years is of more service to greenhouses than one coat annually. To 7 lb. best white lead add 1 quart linseed-oil, ½ pint turpentine, and 3 lb. patent driers.*

1365—**"Geraniums" not flowering.**—I purchased a box containing forty-eight "Geraniums," apparently seedlings or cuttings with good roots, in April last. At end of May I planted them out in the open, and they have grown into vigorous plants, plenty of leaf and stems as thick as your little finger, but not one of them has flowered or shown any signs of flowering. What is the reason?—H. R. Matthew.

*** *We suspect the "Geraniums" are seedlings; if so, they will not flower until next year in quantity. Seedling "Geraniums" generally grow the first year with one stem; seldom do they branch out the first year. If the plants were obtained from cuttings from a known free-blossoming variety they would have flowered ere this.*

1366—**Brier Rose insect-infested.**—I have a Sweet Brier hedge, which is completely covered with insects, of which I enclose a sample. Would you kindly inform me through your paper what I should do to kill them?—J. T.

*** *Vigorously syringe the hedge with the following mixture in the evening; next morning well wash it with clear water. Dissolve 1 lb. of soft-soap in 25 gallons warm water, thoroughly soak 1 lb. Tobacco-paper in hot water. Strain it through a fine-meshed sieve before using, or the syringe will be choked.*

1367—**Morello Cherry fruits dropping.**—"Mrs. Longfield" will be much obliged if the Editor of Gardening can tell her what is wrong with her Morello Cherry-trees? They flower well, and the fruit forms, but then turns yellow and drops off. The trees are about four or five years old, very healthy-looking. On a north wall.

*** *It is difficult to account for the dropping of the fruit of Morello Cherries. Generally this happens when the trees are heavily cropped. Sometimes it is due to late spring frost, or lack of moisture at the time when the fruit ought to be swelling, and sometimes to the presence of insect pests, especially black-fly, which arrests the progress of growth. See that the trees are clean and not lacking moisture.*

1368—**Stable-manure-water.**—Is the use of such water for Celery calculated to render that vegetable injurious as food? If not, should it be given diluted with water, and in what proportion?—East Harling, *Norfolk.*

*** *Liquid-manure from the stable, the colour of brown brandy, is an excellent stimulant for almost any plant, vegetable, or fruit-tree in the garden. It is difficult to say how it should be diluted, hence our reason for saying it should be the colour of brown brandy. Celery especially is much improved by soakings with it during dry weather until earthing up is done.*

1369—**Globe Artichokes too tall.**—I shall be obliged if you can tell me the reason my Globe Artichokes have run up so much? The stalks are nearly 11 feet high and the leaves measure over 3 feet. The ground was well-trenched with manure when they were planted three years ago, but none given since. The soil is good and deep, and they are in a sheltered corner, facing south. An article in your paper some months ago said they required rich soil and plentiful feeding with manure-water, but, owing to their extraordinary growth, we have been afraid to use anything but plain water. A river runs at the bottom of my garden, but quite 20 yards from where the Artichokes are growing.—M. S. Ripon.

*** *The variety is a bad one; most likely obtained from seed in the first place. Obtain some offsets from a free-fruiting variety, and treat them as you have done your present plants.*

1370—**Closing vinery.**—I should be much obliged if you will tell me in your paper, at what time I ought to close my vinery of Black Hamburgh Grapes to have them ripe the middle of April? Will you also kindly let me know what temperature it will be necessary to keep up?—M. D. Longhurst.

*** *In early or middle of November, the vinery should be closed to enable you to get the Grapes ripe in April. Start with a temperature of 50 degs. by night, increasing to 65 degs. by day, when the shoots are ½-inch long. Gradually raise the temperature as the Vines progress to the blooming stage, until it stands at 70 degs. by night, with a rise of 10 degs. during the day. After the berries are set reduce the heat gradually to 75 degs. by day and 65 degs. by night.*

1371—**Moving Seakale.**—Will you kindly advise me in reference to moving Seakale? Some of the crowns have spread so that I cannot cover them all with butter tubs (I used these last season). There were plenty of sticks, but very small, owing to so many crowns coming from the same root. Will you please state how and when to this out?—Young Beginner.

*** *You cannot do anything to the Seakale roots until next April to reduce the number of crowns. Take them up and divide them into pieces with, say three crowns each, making a new plantation.*

1372—**Manure for Tomatoes.**—I have nine Tomato-plants in the open, lower trusses set. I give them alternately, an artificial fertiliser—nitrate of soda, sulphate of ammonia, nitrate of potash, three times a week—*e.g.*, I give plant food Monday, nitrate of soda Thursday, plant food or sulphate ammonia Saturday. Is 2½ gallon can full of each of above liquid sufficient for the nine plants or each day? If not, how much to each plant?—C. L.

*** *You will most likely ruin your Tomato-plants by giving them such excessive supplies of stimulative food; as long as the weather remains dry and hot not so much harm will be done. Mulch the surface about the plants 2 feet wide with half-decayed stable-manure to conserve the moisture in the soil and keep the roots cool. Give the plants a thorough soaking once a week with liquid-manure or plant food, but no nitrate of soda or sulphate of ammonia.*

1373—**Apricot fruit rotting.**—I shall be pleased if you would, through your valuable paper, give me your opinion and advice upon the following: I have two trees Moorpark Apricots, the fruit upon them all goes rotten before it ripens. By this post I have forwarded you a fruit, also an Apple which is affected in the same way. If you notice, you will see a small hole in the centre of the rotten part. My opinion is that the ants (of which we have a quantity) bore the hole into the fruit, then the moisture from night dews enter the fruit, and so rot it. But against that I have two trees, early Apricots, by the side of the others, and all the fruit is good on them.—W. J. S.

*** *The defective fruits of the Apricot may be owing to the presence of grubs, not ants, or perhaps the trees are not supplied with water sufficiently. Apricots are moisture-loving trees, and quickly feel the effect of drought. The Apples, no doubt, are affected by the codlin-moth. Burn all such fruit.*

1374—**Privet—is it unhealthy?**—Would you kindly let me know through your valuable paper if Privet is unhealthy about the house, and if so, what disease has it been known to cause?—Elisha Hulme.

*** *We do not suppose Privet is actually injurious, but such a heavy odour about a house is scarcely healthy. Privet is a hungry, dull-looking shrub.*

1375—**Creeper to go with Clematises.**—What is the prettiest plant to grow on arches with Clematises in a shady place?—N. L.

*** *You might try the Scotch Flame-flower, also Eccremocarpus scaber and Cobæa scandens. All of these will go well with the Clematises or the Honeysuckle.*

1376—**Plague of snails.**—I have lately come to this place; the garden is a spendid one as regards aspect, soil, etc., but it is covered with snails, big and little. Is there any wash I could put on the walls? The holes have hundreds in them. I can put in nothing for winter use. I have the snails gathered every evening; it does not seem to make any difference.—Mary.

*** *Continue to gather the snails, and also use Slugicide, a dry powder sold by florists, and very deadly to snails. When fairly clear of these pests, have the walls fresh pointed. Do away with any Box-edgings, and generally lessen their places of concealment.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A Lover of Flowers.*—We cannot recognise your plant from the piece sent; it was too shrivelled and decayed. Probably one of the Eupatoriums. In any case, let it flower, as it seems so persistent in producing short and flower-crowned growth.——*A. G. C. Bracknell.*—Rose Boule de Neige.——*J. R.*—1, Spiræa Filipendula fl.-pl.; 2, Polemonium cœruleum; 3, Cephalaria tatarica; 4, Purple Loosestrife (Lythrum Salicaria roseum); 5, Lilium testaceum; 6, Centranthus ruber; 7, Mimulus variety.——*G. C.*—1, Polystichum angulare proliferum; 2, Pteris cretica; 3, P. serrulata cristata; 4, Selaginella sp.; 5, Adiantum pedatum; 6, Lastrea, please send fertile fronds; 7, Spiræa Bumalda.——*V. R.*—Thanks for your note; we are pleased Gardening has been of such value to you. 1, Matricaria inodora fl.-pl.; 2, Spiræa Filipendula fl.-pl.; 3, Achillea Ptarmica fl.-pl.; 4, Polemonium cœruleum.——*Miss Darbyshire.*—1, Variety of Sweet Pea, but there are so many of this shade that we could not tell which kind it was unless one had a complete collection at hand; 2, Sweet Pea, probably Princess Beatrice; 3, Rose La France; 4, Probably Duke of Connaught; 5, Rose Sultan of Zanzibar; 6, Please send in flower; 7, Polemonium cœruleum.——*B. B.*—Lilium testaceum.——*G. F. Pimm.*—1, Kindly send a flower; 2, Cerastium tomentosum; 3, Arabis albida; 4, Sedum acre (Stonecrop).——*Gal.*—White Goat's Rue (Galega officinalis alba).——*M. F.*—Thalictrum aquilegifolium.——*R. L.*—Cotoneaster vulgaris.——*M. C. W.*—Double Peach-leaved Bellflower (Campanula persicifolia fl.-pl.).——*E. Arnott.*—Spiræa Filipendula fl.-pl.——*James Kelly, Dublin.*—1, Olearia Haasti; 2, Eurybia Gunniana, also known as Olearia Gunniana.——*H. J. Guest.*—Lycaste cruenta.——*A. Herbert.*—We fail to identify the Dendrobium. It would be advisable to send flowers of it to the Royal Gardens, Kew.——*W.*—The name of the Masdevallia is M. porcelliceps. To get the plant to bloom more freely it should be kept a trifle on the dry side after the new leaves are formed, but not so dry as to cause the slightest shrivelling of the foliage. The cool-house is the best place for it. ——*Abbey.*—Clematis Florida plena.——*Mungo.*—We should have been pleased to name the Carnation if it were possible to do so, but, unfortunately, many varieties are so much alike that unless one has a complete collection for comparison the task is hopeless. 1, is a laced Pink—

one of the old kinds once more popular in gardens than now. We shall be always pleased to assist you in your gardening work.——*H. N. Bagnall and S. Taylor.*—Evidently seedlings, and therefore impossible to name. So many beautiful kinds are raised now from seed that unless one had a complete collection of named varieties to compare flowers sent us with, it would be impossible to assist our readers in determining the names of Carnations ——*B. Fielder.*—Sedum Rhodiola.——*Mrs. White.*—Buckwheat (Polygonum Fagopyrum); 2, Meadow Thistle (Carduus pratensis); 3, Oak-leaved Goosefoot (Chenopodium glaucum); 4, White Goosefoot (Chenopodium album); 5, Red Goosefoot (C. rubrum); 6, C. hybridum; 7, Chervil (Chærophyllum temulentum); 8, Geranium dissectum; 9, Erysimum cheiranthoides; 10, Brassica sinapastrum. ——*Magl.*—Nothing to do with the Caper-plant; yours is the Caper Spurge (Euphorbia Lathyris), and is, we think, like so many of its family, very dangerous.——*W. Hargrave.*—1, Adiantum cuneatum; 5, Pteris argyræa; 10, P. tremula; 11, Soft Prickly Shield Fern (Polystichum angulare); 13, Cyrtomium falcatum. Please send fertile fronds of others.——*S. M. C.*—The garden flower is Helianthus decapetalus, one of the Perennial Sunflowers; the other is the Mountain Cudweed (Antennaria dioica).——*Lavender.*—1, Hypericum oblongifolium; 2, Deutzia crenata fl.-pl.; 3, Common Bryony (Bryonia dioica); 4, Spiræa flagelliformis; 5, Lycesteria formosa.

Names of fruit.—*Chas. Jacques.*—Through sending the fruit in a slight cardboard-box it was smashed to pulp on receipt, so we could not name. If you will kindly send another specimen in a small tin box we will gladly help you.——*Heaton Taylor.*—Dutch Codlin.

Name of vegetable.—*H. Ellis.*—The Bean is the Butter or Stringless Bean, which is much esteemed by some. It is cooked whole, and gathered when quite young. It is well worth liberal culture. One great point is not to crowd up the growth.

Catalogues received.—*Bulbs.*—F. G. E. Bennett, Heathfield, Sussex.——*Bulbs for 1897.*—Messrs. Sutton and Sons, the Royal Nurseries, Reading.——*Bulbs and Plants.*—Messrs. Roozen Bros, Overveen, near Haarlem, Holland. ——*Bulbs.*—Wm Cutbush and Sons, Highgate, London.

LATE GARDEN PEST REPLIES.

Blight on Strawberry - leaves (*M. G. G.*).—Your Strawberry-leaves are attacked by a fungus, the Strawberry-leaf blight (Sphærella fragariæ). The plants should be sprayed with Bordeaux-mixture as soon as the crop is over, when the leaves are just opening, and again just before the blossoms open. Young plants which have not yet begun to bear should be sprayed two or three times during the summer. Bordeaux-mixture may be made by dissolving 1½ lb. of sulphate of copper in warm water, and slaking 1 lb. of freshly-burnt lime, and making it of a creamy consistency with water; then strain it through coarse canvas into the copper sulphate, and mix well with 11 gallons of water. Any leaves which are infested should be picked off and burnt. —G. S. S.

Diseased Apples (*J. H. Hill*).—Your Apples are attacked by the caterpillars of the Codlin-moth (Carpocapsa pomonana) which eat their way right through the fruit, feeding particularly on the pips. The eggs are laid in the eye of the Apple, and the caterpillars at once make their way to the core and work down it and into the fleshy part of the fruit as well. When full grown they leave the Apple. Often before this time comes the Apple has fallen, and the caterpillar, when ready, leaves the Apple and makes its way to the stem of the tree, which it crawls up a little way, and then in some crack in the bark changes into a chrysalis. Sometimes they become chrysalides among the Grass or weeds under the trees. As soon as any Apples begin to fall in the summer, old sacks, or anything else of that kind, should be torn into strips about 9 inches wide, should be folded in half lengthwise, and then not quite in half again. A strip should then be tied or wired round the stem, about a foot from the ground, with the folded edge uppermost. These bands form nice shelters for the caterpillars and should be examined every week. All windfalls should be collected and destroyed as soon as they fall, and the Grass under the trees should be kept as short as possible.—G. S. S.

Fragrant night flowers.—I was very much interested by "J. W. M.'s" note on night-scented flowers; but to my mind he omits one of, if not the best, of that class—viz., the old-fashioned Evening Primrose (Œnothera biennis). At the time of writing I have individual plants forming bushes 4 feet high, and almost as much through They are biennial in habit, and for shrubberies have few rivals. The flowers are on well-grown plants, about 1¾ inches to 1¾ inches across, of a rich primrose colour, delightfully scented, and, to my mind, an additional attraction—they commence opening in the very early evening, and develop so rapidly that one may watch a bud become a perfect bloom in a space of about two minutes Of course, "J. W. M." might add Nicotiana affinis, though that, I presume, is known to every lover of sweet-scented flowers.—Percy Hellen.

BEES.

UNITING COLONIES OF BEES.

It is useless to attempt to keep over a small weak colony for work next season unless it be strengthened in number by the addition of other Bees, either from skeps that are "driven" at the end of the season or from strong stocks possessing a very fertile queen. Colonies strengthened at the end of the honey season by having the Bees of driven hives united to them are better able to stand the severities of winter and swarm sooner in the spring than those that receive no addition to their population, for success in wintering does not only depend upon a sufficiency of stores in the hive, but also upon having strength of population, so that at least five or six combs are well covered with Bees. Very little surplus honey is stored after the middle of July, the flowers of the Lime affording the last great honey flow of the season. In the Heather districts, however, much super honey may be obtained throughout August, and it answers very well to transport hives of Bees to the moors at the beginning of August if the distance is not very great. Much care is, of course, necessary when removing established stocks in so packing them as to avoid the breaking away and falling of the combs, such a calamity proving almost certain destruction to the Bees. Only such stocks as are naturally strong, or have been united, should be sent to the moors, and as a hive full of Bees requires abundance of ventilation in travelling, perforated zinc should be nailed over the tops of the frames in place of the quilt, and so arranged as to allow the Bees to pass between it and the frames. The hives to be united should be brought together gradually—a few feet daily—and as success in the operation depends in great measure upon the Bees of both hives having the same scent, they should be sprinkled with thin syrup scented with peppermint or Nutmeg. If the Bees in two straw skeps are to be united, the weaker lot must first be driven into an empty skep, and sprinkled with scented syrup. The hive to receive them must then be inverted, and the same scented syrup shaken over the ends of the combs. In a few minutes after the driven Bees should be shaken out of the skep over the ends of the combs of the inverted stock hive, which should then be replaced upon its stand. In the case of Bees in frame-hives, uniting can be performed with very little disturbance. The hives having been opened and the Bees either smoked or scented, the combs with adhering Bees can be removed and placed in one hive, and should there be more combs than one hive can receive, those containing brood should be placed in the centre, and the hive filled up with those containing sealed honey. At this season of the year driven Bees may often be obtained at a cheap rate, and it answers very well to unite two or three lots of these driven Bees, putting them into one hive and feeding them liberally till combs are built out and sufficient syrup is stored for winter consumption. Still, combs made from sugar syrup are brittle and more easily broken than those that are built naturally, and the driven Bees are saved much extra labour in comb building if they are united to established stocks. A colony that appears listless and inactive, and indisposed to defend the hive from the attacks of wasps and robber Bees at this season is in all probability queenless, and should at once be united to another colony. All uniting operations should be performed during warm weather and in the evening. S. S. G., *Uxbridge.*

Removing sections, unripe honey, etc. (*Busy*).—Crates of sections should be removed immediately upon the cessation of the honey flow, otherwise much of the honey will be removed by the Bees and stored in the body of the hive. The honey harvest ends at various times according to locality and state of the weather, but except in Heather districts little is gathered after the Limes cease flowering in July. Unsealed honey not having had the watery portion evaporated by the heat of the hive is liable to ferment if kept any length of time. It should, therefore, be used up at once. Give your unsealed sections to weedy stocks later on; they will quickly clear them out, and the empty combs will come in useful next season. Do not commence rapid feeding till towards the end of September, but till then continue gentle stimulative feeding, as the right autumn management of hives is to prolong the breeding season in order to obtain as large a population of young Bees as possible for work in the spring. Early stimulative feeding should begin as soon as the Bees fly freely in the spring, the feeder being regulated in such a way that only a small amount of food can be taken at a time. When honey is plentiful in the hive, rapid development may be encouraged by uncapping some of the honey-cells every few days. Should stores run short before mild weather sets in, frames filled with candy should be inserted in the hive at the sides of the cluster, or soft candy may be placed upon the tops of the frames, below the quilts. Put on crates of sections when honey gathering is in full swing and the hive is crowded with Bees. No, it does not injure honey to come in contact with zinc or tin, as in the honey ripener, still, you would not leave the honey in the can after it was fit for bottling. When a quantity of honey has been extracted hang a flannel bag on the valve of the extractor, and drain off into a honey can or ripener. Keep in a temperature of above 80 degs., and in a few days it will be in a fit state for bottling, the thin, liquid, unripe portion having been skimmed off—or all the ripe honey may be drawn off by means of the valve at the bottom of the ripener, leaving the liquid portion to be used in feeding the Bees. If you let the sections become well capped before removal, and take care to keep them in a dry store-room at an even temperature, you will not be troubled with watery sections or acid honey.

Removing hives of Bees (*Pat*).—You do not say what kind of hives yours are. In packing hives for travelling great care is necessary to avoid the breaking away and falling of the combs, such a calamity being almost certain destruction to the inmates. Newly-made combs are very brittle and tender, and require careful handling; it would, therefore, be well to delay the removal to as late in the season as possible. The internal heat of the hive is always greatly increased by the excitement and commotion of the Bees on being removed; the secret of success is, therefore, the admission of abundance of fresh air. If yours are frame-hives, you must confine the Bees by means of strips of perforated zinc tacked over the entrances, while sheets of the same must take the place of the quilts, and be so fixed as to allow space for the Bees to pass over the tops of the frames; they thus obtain more air than they would if the zinc were fixed close upon the bar-frames, besides relieving the combs of overcrowding. Before the perforated zinc is fitted on the hive the frames should be fixed quite firmly by means of notched strips of wood nailed to the floor-board. These will keep the frames from swinging, if they are also furnished with distance-guides, or are broad-shouldered. In preparing straw skeps of Bees for travelling, the skep should be inverted, and a piece of coarse canvas or cheese-cloth tied over to confine the Bees. A good way to keep the combs from jarring is to push small wedges of crumpled newspaper or drapers' tissue between them. As a security against combs breaking down in travelling, two or three wooden skewers should be pushed into the side of the skep, through the combs at right angles to them, and into the other side a day or two before removal. The Bees will make the combs fast to the sticks, and so prevent their giving way. Should the skeps be oval-topped they will travel better if placed (in an inverted position) in cheese-boxes, having a good layer of coarse hay at the bottom. Straw skeps of old tough comb, having sticks passed through them, may be safely moved in cool weather without being inverted if the crown hole and entrance be covered with perforated zinc, and the floor-board kept from moving by means of nails and cord. If your hives travel by road, use a spring van or light cart; if by rail, do not leave them in the hands of porters more than you can help.

Judging honey and wax (*C.*).—Sections of comb honey should be quite filled and worked closely up to the wood all round without running over, and the comb so joined to the section that it can be cut out without damaging any of the honey cells. The comb should present a level surface, and betray no signs of an

ill-fitting separator, room being left between the comb and the edges of the super for a piece of glass or a glazed case to be used without touching the comb. All honeycomb should in each exhibit be uniform in style of work, quality, and colour. Thinness of capping is another of the chief points of perfection in super honey; the sealing of the cells should be thin, even, and transparent. But although thinness of capping is a point in honey judging on account of its superior appearance, there are objections to it; thinly sealed honey does not keep well, and will, after being stored awhile, ooze through the cappings, presenting a by no means inviting appearance—"weeping sections," as they are called—being quite unfit for market. The honey within the comb should present when held to the light a bright and transparent appearance, and be of an amber colour. There is, however, a great variety in the colour of honey, according to the particular flower from which it is obtained. That gathered from White Clover is of a light straw colour; that from Apple, Pear, and other fruit blossoms of a beautiful orange; from Beans, brown; from Heather, of a dark reddish hue; from Plum blossoms, a clear amber; and from Sainfoin, yellow. Honeydew, the product of various species of aphis, and in times of scarcity of honey gathered by Bees and stored in quantity, is of a very dark colour, and should not be mistaken for Heather honey, as it is most objectionable stuff, of a strong odour, and very disagreeable to the palate. Extracted honey should be put up in clear glass jars, containing one pound each—the appearance of the honey is spoiled if the glass of these jars is not perfectly clear. Glass stoppers should be used, or the jars tied over with vegetable parchment. It should be remembered that pure run honey will usually granulate if kept in a low temperature. Pure English wax varies in colour, and may be either pale yellow, deep orange, brown with a greenish tint, or dark brown. The aroma of wax should resemble that of honey.

BIRDS.

MANAGEMENT OF CAGE-BIRDS.

THE TITLARK OR TREE PIPIT (ANTHUS ARBOREUS).

THIS is a migratory bird, arriving in our island at the end of April and departing in September. On the arrival of the males, who precede the females by a week or ten days, they repair to their respective situations, and commence their songs of invitation. The songster rises in the air uttering a simple twitter, and after having attained the due elevation he commences a trilling warble while he slowly descends on expanded wings. Sometimes, however, the Titlark will sing while perched on the topmost branch of a tree, being distinguished from the rest of the genus by having its hind claw short and curved, although on the ground it runs along with ease and celerity when searching for insects. This species builds twice in the season, the nest being formed of vegetable fibre, Grasses, Moss, and hair, and is generally concealed under a bush or tuft of Grass. The eggs are greyish-white, mottled with brown, and usually four or five in number. The general colour of the plumage of this bird is olive-brown above, the centre of each feather having darker marks; throat white, passing into pale sienna-yellow on the sides of the breast, on the upper portion of which there are oblong brown spots. The flanks are white, with brown streaks, and the tail brown, the outer feathers of which have the external web and tips white, and a small white spot appears on each side of the tail near the tip. In confinement this bird should be fed upon meal-worms, ants'-eggs, hard-boiled yolk of egg, and bread-crumbs, with crushed Hempseed. The following paste forms a good staple food for Titlarks, and will keep fresh and good for a long time: Pea-meal 1 quart, fresh lard 2 ounces, golden-syrup 8 ounces. The lard and syrup should be melted and poured over the meal, well mixed, placed in an oven, and well warmed through. When nearly cold a ¼ pint each of small Hemp-seed, Maw-seed, and cut-groats should be added, and well mixed in the meal. This paste should be kept in an earthen jar, and supplied to the bird with equal parts of stale bread-crumbs. S. S. G.

LAW.

Notice to quit.—In January, 1896, I took a garden and greenhouse for one year for the sum of £5, which I was to pay by four instalments of 25s. each on March 21, June 21, September 21, and December 21. I was to have the option of occupying the holding for a second year if I thought proper, and I exercised that option and am still in possession. On July 19, 1897, I received from my landlady notice to quit on January 21, 1898, or on such other day as the current year of my tenancy should expire next after the end of one half year from the service of the notice. I enclose you copies of the agreement and of the notice to quit. Please tell me: 1, If any notice is necessary? 2, Should I clear out on December 21 or 31? 3, If a notice was necessary, should it have been served on June 21, or July 19? 4, Can I leave at the end of December, 1897, or of December, 1898, as I think proper?—OLD SUBSCRIBER.

*** The agreement of tenancy is wretchedly drawn, as there appears from the copy sent to be no date mentioned, neither when the agreement was made or signed, nor when the tenancy was to begin. The month of January is certainly mentioned, but no day of January is referred to, and the whole agreement is as badly drafted as possible. The notice to quit is properly drawn, although it is not necessary. In reply to your questions: 1, The tenancy set up by the agreement was for one year, but the option of a second year's occupation on the same terms was given you. You exercised that option, and so are still tenant, but at the close of the current year of tenancy your tenancy expires without any notice whatever. 2, You should give up possession on the same day as your tenancy first commenced. When that was I do not know—but you will know—and on that day you must quit, and earlier than that you cannot be compelled to quit. 3, If a notice had been necessary it should have been given so as to expire with a year of tenancy; but as I do not know when the year of tenancy ends I can say nothing as to the time when the notice should expire, and if I do not know when it should expire it is impossible to say when it should be given. It is all quite immaterial, because no notice is necessary. 4, You must leave at the end of 1897 or the beginning of 1898 on the same day as your tenancy commenced in the beginning of 1896 or the end of 1895.—K. C. T.

The Market Gardeners' Compensation Act.—In 1860 I took some market garden ground on a lease, and paid a valuation on entry. In March last I received notice to quit on October 11 next. Am I within the Market Gardeners' Compensation Act? My stock includes roots, shrubs, fruit-trees, sheds, and glass.—EAST KENT.

*** You say you took the land on a lease in 1860, from which I infer that you took it upon a lease for a definite term, and that upon the expiration of the term you became a yearly tenant. If this be so, and you have a written contract or agreement to the effect that your tenancy may be terminated by such a notice as that you have received, the notice is good; but if you have no such written contract, the notice is bad, as in that case a year's notice to quit is necessary, and the notice must expire with a year of tenancy. To make certain what your position really is, it is necessary to know if you are a yearly tenant or what, and also to know if there is any written contract as to notice. As the yearly tenant of land occupied as a market garden previous to 1896, and with the knowledge of the owner that it was so occupied, your case is within the Act in question, and you could claim compensation for fruit-trees, sheds, and glass, but not for shrubs. In so far as the roots referred to are vegetable crops, you may claim compensation for them under the Act, but not for other roots, although you may be entitled to compensation for them under your agreement of tenancy, if you have one, or under custom. Not later than two calendar months before the determination of the tenancy written notice of your claim under the Act must be given to the landlord, and the notice must state, so far as is reasonably possible, the amount and the particulars of the intended claim. This means in your case that notice of the claim must be given on or before August 11th, and I am afraid this answer will be too late to be of service to you. But in all previous notes and replies on questions relating to the Market Gardeners' Compensation Act, I have been careful to emphasise the necessity for giving this notice in due time. If it is too late to give notice of claim under the Act, you may still claim under your agreement of tenancy, if you have one; and if you have none you may claim a valuation of those matters for which you paid on entry, or under local custom. And you may take down and remove the sheds and glass you have put up for the purposes of cultivating the land as a market garden.—K. C. T.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Pickling Walnuts (*R. T.*).—The best time to pickle Walnuts is in the early part of July. After this the shell in the inside begins to harden, and spoils the pickle. Some persons make the pickle without previously pricking the Walnuts, for the reason that it saves the hands from getting stained. Rub the Walnuts separately with a coarse cloth, prick them well with a needle or fork, make a strong brine of salt and water (say, 1 lb. of salt to every quart of water); boil and skim well, and when quite cold, put in the Walnuts. Cover up, and let them remain in the pickle for a week, stirring them up twice a day. At the end of this time drain them from the brine, boil it up again, and when quite cold, pour it over the Walnuts, and let them stand for another week. Pour away the brine, and spread the Walnuts separately on sieves or cloths, and expose them to the air in the sun, occasionally turning them until they go black, which generally takes place in about five days. Next put them in jars, and cover with the best vinegar, cold; let them remain in this about a month, then drain off the vinegar (this is usually put on one side for the making of Walnut-ketchup), and return the Walnuts to the jars. Take some long pepper, a few Cayenne-pods, a few Peppercorns, a few pieces of crushed root Ginger, and about four Cloves (to each quart), a blade or two of Mace, also some Mustard-seed. Put a layer of spices in the jar, then Walnuts, then spice, and so on, until all are used. Boil up enough good vinegar to cover the Walnuts, adding a teaspoonful of grated Horse-radish and ditto of chopped Shallots to every quart of liquid used; pour this hot over the Walnuts, cover up closely to exclude all air, and keep in a dry, cool, dark place. The pickles may be used in a month or two, but ought to be kept two years before they are used. A more simple way is to rub, prick, pickle, and drain the Walnuts as before, and lay them on flat dishes in the sun, turning them now and then till they go black, then put them in jars, and cover with vinegar, cold. Let them remain in this about a month, then drain off the vinegar, and put back the Walnuts into the jars. Into each jar put a few Cayenne-pods, a little long pepper, a few Peppercorns, a few pieces of bruised Ginger, and one or two Cloves; finally cover all with cold vinegar of the best quality, and cover up as directed above.

Marrow-jam (*M. E. S.*).—Cut fresh, ripe Marrows into pieces an inch square. To 1¼ lb. Marrow add 9 lb. lump-sugar, 4 Lemons, 2 oz whole Ginger, ¼ oz. Chillies, ¼ lb. Lemon-peel. Bruise the Ginger, placing it in a muslin bag with the Chillies. Allow the Marrow to lie twenty-four hours with the sugar and Lemons cut fine, the pips taken out. Boil two hours. Just before it is done add the Lemon-peel.—M.

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WATERPROOF TARPAULING.—We have been successful in securing a surplus lot of above from the Government. The wear is everlasting. Our price, any size, 9d. per square yard. Quality not excelled at four times the cost.—THE UNIVERSAL SUPPLY ASSOCIATION, East Street Works, Reading. (Name paper.)

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GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

SEASONABLE HINTS TO AMATEURS.

To those whose aim is to obtain large blooms of the famous autumn flower, the month of August is an important one. During this month the buds which develop blooms of huge dimensions should be secured—that is, all the tiny growths that cluster around the buds are taken away and the flower-bud left on the plant to develop. To those not well used to Chrysanthemums, it may not be known that there is a flower-bud in the centre of these growths, the points of the shoots which have been limited to three or four should be carefully examined, and when they have a bushy appearance one may be sure the flower-bud, if hidden, is there. This is a crown bud. The difference between this bud and one that comes at the termination of the plant's growth, usually some time in September, is that in the latter case there is a cluster of buds, instead of one bud and a cluster of little leaf growths. The reason why the early or crown buds should be selected is that we allow a considerable time for the development of the bloom. This is needed if we desire large ones. From the middle of August to the same time in September is the period in which exhibitors select their buds. They will not, of course, all appear at one time; some sorts early in the month, others later. But, with few exceptions, the crown bud should be looked for. Viviand Morel, Charles Davies, and Madame Carnot are three kinds that give fine flowers from the terminal growth; but for deep, well-developed specimens we must retain the crown bud.

For a quantity of flowers on each plant it is advisable to let the buds come in a natural manner, just thinning the clusters if too thickly placed. When retaining the buds at this early time one must be careful in the operation. The small growths readily snap off without damaging the flower-bud if done in early morning or evening; then the stems are brittle. The side shoots all the way down the stems may be thus removed before they grow so long as to take from the main shoots. Three of the latter is the number retained, each to bear one bloom. The above remarks as to early buds refer to the Japanese type of Chrysanthemum. The buds of incurved sorts may not be selected before the end of August. Anemone kinds, Pompons, and singles should be left to the terminal buds. The two last-named classes are not satisfactory if growth is too much concentrated.

Feeding.—This is an item of culture requiring great care, as the amateur is so liable to overdo the plants with strong stimulants. It is hardly possible to obtain the best results without some aid at the roots besides clear water; but the idea that one has only to pour into the pots plenty of liquid-manure or some noted fertiliser and success will follow is entirely wrong. The pots in which the plants are growing must be full of roots before stimulants are applied, then they may be given in such quantity as to keep the growth moving in a healthy state. If the pots become full of roots and the plants be not fed the growth becomes small and contracted. There is not enough go in the plants to properly nourish the swelling bloom-buds. The fact of a plant often requiring water will indicate plenty of root action, and the growth of the leaves will point to their requirements in regard to stimulants. If there be abundant growth and the leaves generally have a yellow-green tinge, it is certain that they are starved and need watering; but if the leaves are gross and soft I would not apply manures. In the latter case I would give the plants more room instead. When the Chrysanthemums are in good growth, and the weather bright, they will also require more feeding with manure than during dull periods. It would in the former case be safe to give weak doses at almost every watering. It is better to do this than to give a strong, perhaps an over-dose, at stated times. One cannot go wrong when the manures are weak. For instance, if liquid from the farmyard is used, put just enough in the water to colour it. If guano is preferred just colour the water with this also. Should some approved fertiliser be fancied, and 1 oz. to the gallon recommended, use half the quantity only. I am certain such precautions are necessary, as from observation so many failures are noted through the manures being too strong. All liquids that leave a thick sediment behind should be avoided. These clog the surface of the soil and prevent air from passing through it.

Deformed growth, such as the points of the shoots going "blind" and buds of bad shape, is caused usually by insects. Such irregularities are also brought about through allowing the plants to get very dry at the roots, thereby giving a severe check. When the pots are full of roots, and the weather hot, attendance as to moisture must be constant. It is important that the leaves shall not flag. Earwigs are a source of mischief, and if not sharply trapped, will damage the point of a shoot or a tiny bud in a very short time. A look among the leaves at night-time will not be made without finding the enemy. The stems of the Broad Bean, or even bits of paper roughly screwed up and placed among the leaves, will catch a number. These traps should be examined each morning, and the pest destroyed. A tiny black aphis is troublesome in most seasons. Like the better known green-fly, it spreads with great rapidity. Dusting with Tobacco-powder is the easiest remedy I have found for either. But as in the case of all diseases of plants, prompt action is advised.

Chrysanthemum-plants should have plenty of room, therefore stand the pots well apart. At this time of the year growth is rapid, and crowded shoots cannot become well-ripened. Without firm stems good blooms are not obtained. Tie the stems securely. All superfluous side growths should be pinched off. For large flowers the shoots are limited to three or four, and the strength of the plant should be centred upon these. But even when a bushy specimen is grown, and abundance of blossom not wanted, there are lots of little side stems on the lower portion of the plants that are best away.

H. S.

Chrysanthemums in small pots (*Handicapped*).—Your plan of rooting cuttings in May and growing them on to flower in six-inch pots is an admirable way of utilising a late batch of cuttings, and by their use you may obtain some excellent plants for the front rows of groups, and in many instances you may also obtain some very fine flowers for exhibition. You have no choice now—third week in August—which buds to select, but must secure each bud as it makes its appearance. If you were to send on the growths surrounding the first buds, instead of securing the buds, you would probably be far too late for your plants to be of use for November grouping; therefore, do not hesitate to secure the buds as soon as possible. You will do well to feed your plants moderately, on no account overdosing them with food and stimulants, which could not fail to end in disaster. Should any of the sorts you grow show the bud a trifle earlier than you think is best suited to the particular variety, you would be well advised not to remove all the small shoots at once, but rather to remove one at an interval of a day or two, so long as the bud continues to develop. By adopting this method you may to some extent retard the early development of a blossom.

ROSES.

SUMMER ENEMIES.

There are a few enemies of the Rose which very seldom appear except in late summer and early autumn. As several correspondents are already troubled with these, I now give a few remarks. It is most unfortunate that we cannot yet find the least help in ridding our plants of

Red-rust,

nor can we even discover the chief causes of its appearance. Some contend it is brought on by hot and exceedingly dry weather, others that a light soil is the chief cause, and, again, some will insist it is never found except upon plants worked on the Manetti-stock. Now, I am quite certain that neither of these are the real causes, for we find red-rust during a wet as well as a dry season upon both stiff and light soils, and upon all classes of stocks. What seems exactly the same conditions as apparently brought on this dreaded disease one year, will find the plants quite free another, and this although in the same soil and position. There is one point about it worth attention, and that is the true Teas and Noisettes are not affected. A few, too, of the other sections seem unusually free. But what is red-rust? some will say. It is rather difficult to describe, because the attacks of mildew and red-spider in certain stages have much the same appearance. Several consignments of leaves have reached me that were spotted with dark brown patches of much the same colour as dried blood. These are caused both by mildew and the early attacks of

Orange-fungus.

The latter disease and red-rust have certainly much in common, and some experts contend that

red-rust is nothing more than the later stages of Orange-fungus. Orange-fungus in its first stages is a deep orange-coloured excrescence found during early summer. It is said that the spores from these eventually produce the disease named red-rust; but if that is a fact, why do we not see red-rust regularly? We always have more or less of the Orange-fungus early in the summer, and often enough during late autumn when red-rust is prevalent; it is also present when no red-rust is attacking the plants. I am very sorry there is no sure or even appreciable remedy for this disease, which so soon robs our plants of their leaves, and only gives us a bare, prematurely-ripened Rose-tree instead of one carrying a quantity of late blooms and healthy growth. I have noticed a greater tendency towards red-rust upon plants growing on the Manetti-stock than when upon the seedling or cutting Brier, but those upon the latter stock certainly develop more cases of Orange-fungus. We see it upon the common Brier itself, but very seldom indeed upon the Manetti. All I can suggest is that we make a point of picking off and burning leaves infested with Orange-fungus as soon as they are perceived, but more especially so early in the season.

Mildew

is a disease we are troubled with both indoors and out. In the former case we have the causes more or less under control, but outside these are entirely beyond us. I have known plants in a very dry season and also a wet one entirely free from mildew; and, on the other hand, we find this disease very prevalent during both wet and dry seasons. It appears with alarming certainty after any sudden atmospheric change, and spreads so very rapidly that little can be done in the open. There are a few varieties terribly subject to this disease. I may name Her Majesty, Souvenir de Paul Neron, Gabrielle Luizet, Innocente Pirola, and Clara Watson as among the worst in this respect. Mildew is a disease which soon cripples all foliage, and first appears as a white powdery deposit upon young leaves, causing them to curl, wither, and drop off. Every grower of Roses is only too well acquainted with it and its persistent attacks when once present. You really cannot do much outside, for if you cripple the first germs, so long as the weather is changeable or at great extremes, it will probably put in a second and even stronger appearance. I have had it come on in the most distressing way among a small bed of healthily growing Teas that were treated to a good soaking during a dry summer, in hopes of getting some better late flowers. The next day there were evidences of mildew. The neighbouring beds were not watered, other matters intervening, and yet these stood and flowered well, remaining almost free from mildew, and from more recent observations I firmly believe no mildew would have appeared upon the other bed had the plants not experienced the undoubtedly unnatural root moisture during a spell of hot weather and dry atmosphere.

Thrips

are not the small variety found upon greenhouse Azaleas, etc., but a larger, darker, and longer species, quite three times the size of others. This season they are already prevalent with me. They exist chiefly upon the flowers, quite spoiling them by eating and discolouring the petals, this showing plainly upon those of a light colour, and often making the flowers quite useless. They appear during a dry season, and often go away after a heavy storm or spell of a few rainy days.

Red spider

I have written of before, but it also puts in an appearance outside during a dry autumn. Syringe the foliage well night and morning, taking special care to apply water beneath the leaves.

I am sorry that scarcely any of our pests among Roses that are more than usually prevalent outside during late summer and autumn can be fought against with any measurable degree of success, but such is unfortunately the case. Luckily they do not appear until the best part of our summer crop is secured; and it often happens that we get a good late crop free from their attacks, even after their unwelcome presence during August.

P. U.

Hybrid Brier Rose.—I planted last autumn a Lady Penzance Hybrid Sweet Brier. It is growing well, but has thrown up two long straight shoots about 3 feet long, the leaves of which seem so different from the rest that I think it may be a shoot from the Brier I suppose the hybrid is grafted on. I enclose you both leaves. Would you tell me if these leaves should be cut off or not?—M. F. W.

*** If the leaves of your stronger-growing shoot are sweet-scented it cannot be the stock. That sent was too withered for us to define whether its perfume was correct or merely imparted by contact with the smaller leaf. All of these Briers throw up stronger shoots in late summer than they would bear the first spring after planting, and the leaf sent is by no means out of proportion.

"Blighted" Roses (*L. S. E., Freshford*).—Your Roses are affected by a form of mould called Actinonema Rosæ, more than usually prevalent this season and a terrible pest among Roses. Gather off the affected portions and burn as soon as possible, as they are very contagious. We know of no sure remedy, but it is worse than red-rust and Orange-fungus combined, two more diseases Roses are much troubled with in some districts this season. It may be free next season, but if you allow leaves and twigs to remain about there is great probability of the spores germinating again.

Rose-buds failing.—What is the cause of my buds dying away after they have been budded about eight or ten days? Does the matting want slackening?—Sidney Tuckey.

*** In all probability the buds were too old or too young when inserted. It may be, too, that the bark of your stocks did not lift sufficiently easy and free owing to the dry weather. We can only surmise when you give us absolutely no data to go by. You would not need to loosen the tie for at least six weeks, if at all.

Rose Souv. de Catherine Guillot (Tea).—Instead of the rage for artistic colours in Roses waning, it appears rather to increase every year. Beauté Inconstante, L'Idéal, Ma Capucine, and others never fail to please. The above-named Rose is a grand addition to this tinted class. Its buds are heavily shaded with orange-scarlet, the edges of the petals and point of flower being of a peculiar soft mauve shade, a most peculiar yet artistic blending. It is a good grower with reddish wood and foliage, which still further enhances the beauty of this variety.—W. E.

Rose-bud.—I send you a shoot that has failed, and shall be glad if you can give me any hints as to the cause of failure? The bud used was from L'Etendard de Jeanne d'Arc. The Briar is certainly rather small, but some of about the same size are all right.—W. Barton.

*** Your bud was certainly not tied in sufficiently tight, and it also appears that the bark lifted rather badly. The bud itself was not too large for the branch.

Rose growing.—What am I to do with a Marie Reine Henriette Rose-tree which I had last spring? It has thrown out a shoot nearly 5 feet long, and stands on the greenhouse shelf. It nearly touches the glass. Should be glad of advice.—Sidney Tuckey.

*** Why not remove it from shelf and grow on the shoots as freely as possible? It will then produce a quantity of deep red blossoms next year.

Crimson Rambler Rose for wall.—Will Crimson Rambler grow well on a wall, or must it be trained along an espalier? The wall is of stone.—E. B

*** If due south, a stone wall is apt to be too hot and dry, except during a cool summer. This Rose can be grown in any form.

Red-rust in Roses.—Some of my Roses have what I think to be red rust. What is best to do with them? Is the disease curable? Is it likely to occur in the same bushes next year?—Alice.

*** You are right about this disease. It cannot be prevented or cured; at least, we have never heard of or succeeded in so doing. Your plants may be free next season.

Berries on Japanese Rose shrivelling.—Will you kindly tell me why the berries on my Rosa rugosa always shrivel up? The plant is apparently quite healthy and flowers well, but as soon as the flowers fall the berry shrivels up and dies. Our soil is a very sandy one, and the bed faces south. I have had my plant two years.—E. B.

*** Please send some berries. It may be disease.

Liquid-manure for Roses (*Miss Darbyshire*).—Apply liquid-manure now. Soot, placed in a bag and saturated in a tub of water, makes a useful manure; but we prefer the drainings from a stable or cowstall, being careful to dilute these sufficiently, and giving an ample supply to thoroughly saturate, rather than several smaller lots.

GARDEN ROSES.

Having recently received an invitation to visit the gardens of one of England's ancestral homes, I certainly expected to find in such a garden a good display of Roses. Judge of my disappointment, however, when we approached the rosery to find it almost flowerless, and this, too, in the last week of July. The reason of this dearth of blossom was not far to seek. The rosery was planted mainly with the Hybrid Perpetuals—a lamentable mistake. I have no desire to decry the Hybrid Perpetuals—they have been useful Roses, and are still most useful—but to plant this class and none other, even in the smallest garden, is certainly neglecting to take advantage of the splendid material that is now within our reach. The remedy is to be found in the lovely Tea and Hybrid Tea class, for each Rose season brings evidence that they have become indispensable. As years roll on many new kinds are added through cross-fertilisation, an art which has already secured us such kinds as Mrs. W. J. Grant; the sweetly-scented, vigorous-growing Mme. Abel Chatenay; the deep-petalled, delicately-tinted Souvenir de President Carnot, and many others. Not only have we obtained these splendid Roses, but through them, with their hybrid nature, their offspring should be interesting. This season Mr. W. J. Grant is seeding most abundantly, and we shall look for some good results. The time will soon arrive when Roses can be planted, and I would urge upon Rose lovers to give these Teas and Hybrid Teas a good proportion of the space available. I am aware there is a deeply-grounded idea that these Roses are tender, and cannot be grown without risk; that they are tender I admit, but not to the extent that we are asked to believe. If these Tea and Hybrid Tea Roses were carefully moulded up with earth, or what is better still, burnt garden refuse, a foot or so thick round the base of the plants, they would come through our winters unharmed, and should the tops be cut down to the heap of mould then the bushes would throw up shoots the next summer all the stronger for their vigorous pruning. I have seen it stated somewhere by an ardent rosarian that the best Tea Roses he ever had came after a donkey had somehow strayed into his garden and pruned the plants for him.

Tea Roses should be kept if possible in a bed or beds by themselves. My reason for so doing is this: they require rather better drainage than the Hybrid Perpetuals, and if practicable the beds should be raised rather more than those containing the Hybrids. The soil they prefer is good fibrous loam, with a fair admixture of road-sand and a small proportion of burnt earth and wood-ashes. Some well-decayed cow-manure should be well mixed with the bottom soil; the roots will then have it at hand when they require it, which is generally the second season after planting. By judicious treatment these beds of Tea Roses may be had in flower from May to October, and even to Christmas if a slight frame be made to place over them during frosty nights in October, November, and December. To secure a good succession of blossom one or two points must be attended to. The first is to transplant about one-third of the plants each year. Secondly, do not wait for all bloom buds to develop, but cut some off early. The shoot in consequence will ripen quicker, with the result that young growths will start out to keep up the succession. Another point to bear in mind is to obtain the plants on seedling or cutting Brier. Do not be persuaded, because they are cheaper, to have Teas or Hybrid Teas on Manetti. I do not object to De la Grifferaie as a stock for Teas and Hybrid Teas, but the Manetti I would not have. It is a useful stock for Hybrid Perpetuals, especially for early work, but for Teas it is a failure. Own-root Roses are good, but unless really fine plants can be procured one is better without them, for they cause much disappointment in nursing them up, and to lose a season to most of us is anything but pleasant.

The following is a list of fine kinds:—

Anna Ollivier, Augustine Guinoisseau, Beauté Inconstante, Belle Lyonnaise, Bouquet d'Or, Camoens, Caroline Testout, Clara Watson, Dr. Grill, Enchantress, Ernest Metz, Francis Dubreuil, Françisca Krüger, Germaine Trochon, Gloire Lyonnaise, Golden Gate, Grace Darling, Grand Duc A. de Luxembourg, Gustave

Regis, Hon. Edith Gifford, Innocente Pirola, Jean Pernet, Jules Finger, Kaiserin Augusta Victoria, La France, Le Soleil, L'Idéal, Mme. Abel Chatenay, Mme. Carnot, Mme. Charles, Mme. Chauvry, Mme. Chédané Guinoisseau, Mme. de Watteville, Mme. Edouard Helfenbein, Mme. Falcot, Mme. Hoste, Mme. La Baronne Berge, Mme. Lambard, Mme. Pernet Ducher, Mme. P. Perny, Mlle. Germaine Raud, Mlle. Helena Cambier, Maman Cochet, Marie d'Orleans, Marie Van Houtte, Marjorie, Marquise de Salisbury, Marquise Lita, Medea, Miss Ethel Brownlow, Mrs. W. J. Grant, Narcisse, Papa Gontier, Perle des Jardins, Princess Bonnie, Princess Alice de Monaco, Rubens, Safrano, Sappho, Sombreuil, Souvenir de Gabrielle Drevet, Souvenir de Lady Ashburton, Souvenir de Mme. Eugène Verdier, Souvenir de Mme. Sableyrolles, Souvenir de S. A. Prince, Souvenir d'un Ami, Souvenir du President Carnot, Sylph, Viscountess Folkestone, White Lady.

This short article upon decorative Roses would not be complete without mentioning the China and Polyantha Roses. Of the former Mme. Laurette Messimy and Mme. Eugène Resal are superb, and of the latter Perle d'Or and Gloire des Polyanthas should find a place in every garden. W. E.

Climbing Roses on house.—I shall be much obliged if I can be informed through GARDENING about the best way of planting climbing Roses on house facing south and west, on coast of Lancashire? I propose taking out 2 feet 4 inches of present soil or sand, filling bottom 4 inches with lime rubbish and broken bricks, then a good layer of cow-manure, after that clay and soil and manure mixed, and last foot with richest soil and manure I can obtain, doing this a few weeks before planting. Is this right? The soil here gets very dry in summer as it is so sandy. I enclose sample of soil.—A CONSTANT READER.

*** Upon such a soil as that enclosed you will need no artificial drainage. Better far to take out a few loads of this and replace with the stiffest loam you can procure, manuring with cow or pig-dung if possible. Plant in November, and do not place the plants nearer the wall than 6 inches. A selection of suitable kinds, with colours, will appear in ample time for your purpose. Work some manure in at the bottom, and upon no account drain.

Roses on galvanised wire supports.—Will the Roses grow well on galvanised wire panels, and is it necessary to paint them? Also, what is the best way of fastening these to side of house without injuring the bricks?—A CONSTANT READER.

*** Painted wire is certainly more free from electric disturbances, which sometimes injure Roses; it is also better during the presence of severe frost. Ironmongers sell a pin or peg with eyes very cheaply, specially made for driving into walls at intervals and passing wire supports through. Have them 6 inches long and drive in far enough to leave 3 inches exposed. At intervals of 3 feet to 4 feet square is quite close enough for these, as you can cross the wires if necessary.

THE RUSH DAFFODIL (NARCISSUS TRIANDRUS) AND ITS VARIETIES.

THIS is one of the most variable of all the species of Narcissus, and is very widely distributed in Western Spain and Portugal, whence collected bulbs have been largely imported during recent years. But the plant has long been known and grown spasmodically in British and Continental gardens. N. triandrus is figured and described by Parkinson in 1629, and in French and Belgian works before that time.

The Rush Daffodil (Narcissus triandrus) grown in a pot.

One of the most distinct of all the forms of N. triandrus is the dainty variety called pulchellus, which differs from all other varieties in having the cup paler than the perianth segments. In suitable soils it is a strong grower, bearing seven to nine flowers on a scape. In 1873 I saw a small bed of this variety in Parker's nursery at Tooting containing a hundred bulbs or more, and was told they came from Holland. Although N. triandrus pulchellus has been found wild in Portugal, it is doubtless of hybrid origin, and Mr. Engleheart has reared seedlings closely resembling it between N Jonquilla and N. triandrus albus. The finest of all the forms of N. triandrus is wild on the Isle of Drénec and on the Isle St. Nicolas, off the coast of Brittany, and it has long been cultivated by M. Blanchard in the Naval Hospital Gardens at Brest under the name of N. calathinus. It is shorter in growth and much larger in flower than the Portuguese or Spanish plant, the leaves being broader, more green in colour, and curiously revolute towards the apices. Varieties raised by crossing N. triandrus with some forms of Daffodil bear some sort of a resemblance to this plant, as also do some of the wild hybrids found in Portugal.

As a rule, N. triandrus does not exist long in a healthy condition when grown as a hardy plant in our gardens, but as a pot plant for cold frame or cool greenhouse culture, all the forms and their hybrids, such as Trimon, Snowdrop, and others, are very charming. The late Rev. W. Rawson, Fallbarrow, Windermere, grew N. triandrus and its varieties beautifully in pots year after year. His plan was to repot them carefully when at rest in June and July, and to give them abundance of water from the time they began to grow until the leaves turned yellowish after flowering, when they were allowed to dry off entirely in a cool place.

B.

NIGHT-SCENTED FLOWERS.

SOME months ago you were good enough to publish a few notes from me which you headed "A Night-scented Garden." I see one of your correspondents, "J. W. M.," July 31, page 312, is asking for some information on the subject. He mentions the Matthiola bicornis, or Night-scented Stock, which is also a night-flowering plant and is closed during the day. I have sown this for years, and am always well repaid for my trouble. The other little plant, a Catch-fly (Silene petræa), I am not acquainted with, but it is only night-flowering and has no scent. "J. W. M." should grow a wonderful little plant which unfortunately has no English name, Schizopetalon Walkeri, the only species known. It throws out after dusk a most delicately flavoured scent resembling Almonds. The flower is pure white and of a most conspicuous shape, somewhat of the Maltese Cross type. "J. W. M." would do well to sow a packet or two of this. I have always a few plants of Nicotiana affinis, which expands at dusk and is very fragrant. The Œnothera (Evening Primrose family) is also very showy and fragrant. The Hesperis tristis, or Night-scented Rocket, he ought to plant; it is quaint-looking and sweet-scented in the night. Another Nicotiana (N. suaveolens) is worth growing and is fragrant at night. There may be others, but I have exhausted my list, and shall be glad to hear of more. These night-scented flowers charm a class of men whose time is fully occupied during the day in business pursuits, and have only the evenings, so to say, to themselves in which they can enjoy their gardens. J. N., *Didsbury.*

TREES AND SHRUBS.

THE DAISY BUSH (OLEARIA HAASTI).

AMONGST hardy flowering shrubs this New Zealand "Daisy Bush" is one of the most conspicuous subjects when in flower during the months of July, August, and September. Its sweetly-scented clusters of pure white Daisy-like flowers are borne with great freedom near the ends of almost every twig. It forms a dense bush with erect, sturdy branches furnished with neat, Box-like leaves, oval in shape, leathery, dark green above with a thick coating of silky-white tomentum on the under surface. It thrives well in ordinary garden soil, but prefers a moist loam with which is mixed a quantity of good leaf-mould. It makes a splendid subject for the mixed shrubbery border, as it blooms at a time when few others are in flower. It is adapted for growing in masses, and if such things as Galtonia candicans or Liliums can be planted between them the flowering season will be considerably prolonged. A special point in favour of this pretty Olearia is that it flowers in a young state, and even in positions where the sun rarely shines. It is readily increased by cuttings, which may be taken off now and inserted in light soil in a cold-frame. Beyond an occasional watering overhead, and protection from the sun, nothing more is required to ensure successful rooting of the cuttings.

AJAX.

Damaged Holly-hedge.—A fine Holly hedge was badly damaged two years ago by frost or a salt-storm. It has now recovered its foliage to a certain extent, but is very bare at bottom. What can be done to recover its early beauty? If by cutting down, what is the best time?—HOLLY-HEDGE.

*** As the plants have lost their lower branches, the best way will be to fill up the gaps by planting a few young plants, and training

them in the places of the dead branches. You will find this system much better than cutting the hedge down to a low level in order to encourage growths from the bottom.

GUM CISTUS (CISTUS LADANIFERUS).

This is a very ornamental shrub, and a native of Portugal. Although hardy in most districts, it should not be planted in very exposed or northern counties; nevertheless, it is to be strongly recommended for planting in the south, and especially in sheltered nooks and near the sea. When residing in North Hants it stood for several years untouched, and made a big bush, and in this garden we have a thriving plant which has been full of bloom for several weeks. I saw a splendid plant of it in front of a villa at Charmouth on Jubilee Day. It was standing on the turf. It was from 6 feet to 8 feet high and as much in width, and covered with bloom. The flowers are large, white, with a purple blotch at the base of the petals. The leaves are quite gummy above and covered with a dense white tomentum beneath. There are several kinds of Cistus, laurifolius and florentinus being the hardiest. Some have pure white blooms. Florentinus has stood in our garden in an open bed on poor soil during the last ten years, and survived when many other things were killed. In cold and exposed places these are worthy of being grown in pots or planted out in cold-houses. J. Crook.

Iris Yew (*T. Pearcy* and *Nidum*).—You may plant the Irish Yew any time between the months of September and May. You need have no fear as to its being able to withstand bleak situations, as it is exceedingly hardy and long-lived. Lift the plant with a good ball of soil, and, if it has to be carried any great distance, protect the roots from drying winds. The hole for its reception should be made beforehand, and when the plant is properly placed in position fill up with good soil.

Treatment of Yew-tree-hedge.—How ought I to treat a Yew-hedge of five years' standing? I want it to grow thick and fairly high.—A. B.

*** Much depends on the position of the hedge. If the soil is fairly moist you should experience very little difficulty in making a handsome hedge. If the soil is very dry copious supplies of water should be given in dry weather, especially in spring, when the new growth is being made. Loose growths should be cut back in July.

Pine-trees (*A. R. Biker, Cheltenham*).—Without knowing the name of the Pine you refer to, it is difficult to tell how the trees ought to be treated. Send a specimen or furnish us with its name, and we shall be pleased to advise you.

Montbretia crocosmiæflora.—This is one of the brightest subjects in the hardy flower garden just now, and when massed together in large numbers the effect is striking. It will withstand the ordinary winter if covered with some light material for extra protection. The growth and the leaves much resemble those of the Gladiolus, and when the plants are well established flower-spikes are thrown up freely, each spike branching into others and clothed right up the stem with deep orange-red blossoms. Clumps of a dozen or two at intervals in the hardy border always look beautiful, while a mass of the same subject on a sloping bank with Grass surroundings is a sight to remember.—D. B. C.

Gaillardia grandiflora is a good plant for July and August. The flowers are very richly coloured, and they are also of large size and freely produced. Three or four flowers of this subject lightly arranged in small glasses are very useful at this season, and a number of similar receptacles filled with these highly-coloured flowers, associated with blossoms of other subjects possessing colours of orange, red, and yellow, are delightful for dinner-table decorations. These colours are always seen to best advantage under artificial light.—D. B. C.

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GARDEN PESTS.

THE STRAWBERRY-MOTH (DERONEA COMPARANA).

Besides the pests already mentioned that attack Strawberry-plants, there is this little moth, which, though perhaps less injurious than the others, should not by any means be overlooked, as the injury it does at times is considerable. As the Strawberry is one of our most favourite fruits, and is in season for only too short a time, it behoves everyone to do his best to secure as good a crop as possible. The caterpillars of this insect, as is frequently the case with those of the family to which they belong (the Tortricidæ), seem to prefer to live in the quiet seclusion of a curled-up leaf rather than exposed to the gaze of the outer world, as most of those do which belong to other families; consequently, they are not obliged to assume a protective colouring, or other means of defence against their enemies, but are mostly of a dull brownish, greenish, or greyish colour, with darker heads. The caterpillars of this insect bind the young leaves and blossoms together with their webs and feed upon them, so that if these caterpillars are in anything like abundance the injury to the crop is very considerable, and may even be fatal to it. The life-history of this insect has not yet been properly studied, and is in many points still unknown. The moth makes its appearance in May, and

The Strawberry-moth and caterpillar.

probably lays its eggs on the plants soon afterwards, and in the course of a week or ten days the caterpillars are hatched, and begin to spin their silken threads round the leaves, etc, gradually forming a shelter within which they can live well supplied with food for the term of their lives. By some it is thought that the chrysalides are formed in the ground; but that is one of the points which has still to be cleared up. It is also by no means certain that the scientific name given at the head of this paper is the correct one, but the difficulties on that point need not be gone into in this article, as it is a matter that concerns the entomologist more than the horticulturist. The best way of destroying this insect is by going over the beds and cutting off the little bundles of leaves and blossoms and putting them into a basket, taking care that the caterpillars do not drop out in the operation. They should be burnt as soon after as possible. As soon as the beds have been cleared of runners the ground between the rows should be dug up, so as to expose the chrysalides which may be formed there to the birds and the weather. A dressing of gas-lime laid on the surface before the ground is dug up, so that it would get turned in during the operation, would be useful. The moth measures about 7-10ths inch across the open wings. The fore wings are yellowish, with a large brown or nearly black triangular patch on the front edge, and a short dark streak near the base on the lower margin; the hind wings are brownish or greyish; the body is brown. The caterpillar is about ½ inch long, and is greenish. Through the kindness of H.M. Stationery Department I am able to give a figure of this insect, and of the leaves and blossoms fastened together by it. G. S. S.

Swarms of white butterflies (*W. S. C.*).—I do not see what you can do to prevent the butterflies from laying their eggs on the plants they may select. If it were possible to so syringe all the leaves of all the plants with a mixture of soft-soap and paraffin or Quassia, the butterflies might be prevented from laying their eggs on them, but this plan is hardly feasible, and to try and catch all the butterflies is a hopeless task.—G. S. S.

Leaf-hoppers on Roses, etc. (*Susie*).—The eggs are laid on the leaves, but the eggs of insects are often very difficult to destroy, as insecticides that will kill the larvæ, or perfect insects, appear to have no effect on them, and they are often so small that looking for them is not worth the trouble. I very much doubt if you can free your Asparagus-plant from the scale except by cutting off the infested shoots; no spraying or syringing will affect them.—G. S. S.

Wireworms in gardens.—Mrs. New is troubled with wireworms in her garden. How can they be got rid of?

*** By constant cultivation and disturbance, frequently turning over the ground, so that birds can gain access to them, and the judicious use of crops unsuited to the pest. Mustard is generally used, and then dug in as a green crop before the seed matures. Pieces of Potato, Carrot, and Turnip should be sunk just below the surface, and examined each day or two. It is a difficult pest to get rid of, and when one's ground is badly infested it sometimes takes a long time. By persevering in the above you will check development of the wireworms into click-beetles, and so stop their natural increase.

Grubs amongst Lettuces (*F. Potter*).—The grubs you enclosed are the caterpillars of the common dart-moth (Agrotis segetum) It is a very common and most annoying pest, and one that is very difficult to get rid of. The only really practical way of destroying them is to turn up the ground round the plants they are attacking and pick them out. Watering the soil round the plants with soapy water until all the cracks and holes are full will often bring the caterpillars to the surface. They are so very active that they have often moved off to another plant before it is noticed that the first one had been attacked.—G. S. S.

Diseased Beans, etc. (*W. A. Jones*).—Your Beans and Cabbages are, from what you say, attacked by aphides, but of different kinds. They may, however, both be killed by the same means—namely, by syringing them with ¾ lb of soft-soap, the extract from ¾ lb. of Quassia-chips, and 10 gallons of water. You were quite right to top the Broad Beans, and I hope were careful to carry away and burn the tops. You may rest quite satisfied that the moon has nothing whatever to do with your Cabbages running to seed; the moon is supposed by many persons to have a great influence over things on the earth, but it is absurd to think that because the sun shines on only part, or on the whole of the part turned towards us, that it should make any difference in the weather or as to how plants grow.—G. S. S.

Scale on Maiden-hair Ferns (*St. Brannocks*).—Your Maiden-hair Ferns are attacked by one of the scale insects (one of the many species of Lecanium). The only practical way of destroying them is to cut out infested fronds and burn them.—G. S. S.

Caterpillars on Poplar-trees (*Mrs. Kinderstey*).—The two caterpillars you sent were those of the Puss-moth (Cerura vinula), a decidedly common insect on Poplars. You would find it interesting to keep them and watch them undergo their transformations; but they are not worth keeping as rarities.—G. S. S.

Fly on Cucumber-leaf (*G. Baker*).—I could not find any insects on the Cucumber-leaves you sent, except some mites. They may be killed by washing the leaves with the following mixture: ½ lb. of soft-soap, the extract from ½ lb of Quassia-chips and 10 gallons of water, 1 lb. of flowers of sulphur.—G. S. S.

Œnothera biennis.—This is very charming each evening as it expands its light yellow flowers, and though of course quite a commonplace plant, may do good service in the woodland or wild garden. And where there is Bracken in plenty in the latter, this Evening Primrose and the towering spires of the Foxgloves enhance the beauty of the landscape in no small degree.

INDOOR PLANTS.

INDIAN AZALEAS.

The illustration here depicted shows the value of Azaleas for conservatory and greenhouse decoration. The plant illustrated cannot be less than fifty years old and has flowered in the same pot for fifteen years. The flowers are semi-double, of a deep salmon colour, the foliage entirely hidden by the masses of bloom. Standing in a vase with a background of rich green, it was greatly admired. Each year it receives after flowering several dressings of artificial manure with occasional waterings of weak manure-water. Undoubtedly the failing with the future growth of imported Azaleas is due to several causes—first, in not giving immediate attention to the plants after flowering—viz., to pick off the seed-pods and place in a warm, moist house—the north side of a low span-roofed is the best, as far from the hot-water pipes as possible; with abundance of moisture

A double-flowered Indian Azalea.

by syringing and damping down, watering at the root will be reduced to a minimum. With several applications of some artificial manure, plants imported in the first year will have doubled in size, a sharp look-out being kept for the appearance of thrips, which must be stopped at once. Last season's imported plants thus treated will now be well set with plump buds and have vigorous, healthy foliage. On removal to cooler quarters the change must be gradual both as regards air and moisture, otherwise much loss of leaves will be the result. Another frequent cause of unhealthy plants is overwatering, especially during the first year after potting. From the time imported plants are potted and until they get well established the greatest care is needed in watering. No tyro should ever be allowed to do this; on the other hand, extreme dryness must be guarded against.

Of the earlier kinds, candidissima, Duchess of Edinburgh, narcissiflora fl.-pl., etc., kinds that force so well, will have been removed to cooler quarters weeks ago, there being no difficulty in having them well in flower by the new year. Large specimens will give a supply of cut bloom for fully three months. Added to their value for cut bloom at a time when flowers are none too abundant, the length of their flowering season and their rich and varied colours render them the most beautiful and desirable class of plants for the embellishment of both conservatory and greenhouse. R.

SOME PILLAR PLANTS FOR CONSERVATORIES.

Pillars of iron and wood are frequently used somewhat extensively in large conservatories for supporting the roofs, and, if these are clothed with suitable plants, they then form not the least attractive feature of the structure. There are many plants more or less fitted for the purpose, and among the best may be mentioned the following:

Habrothamnus elegans is one of the most striking pillar plants we possess, especially in large and lofty structures where there is plenty of room for it to develop itself. It blooms more or less continuously throughout the year, and its large clusters of brightly-coloured fruits are also almost as attractive as its handsome blossoms. If planted out in good soil, but little attention is needed, beyond thinning out weak and useless overcrowded growths, or shortening back shoots that may have over-run the space allotted to them. A companion plant to this is Cestrum aurantiacum. It may, generally speaking, be described as a counterpart of the Habrothamnus, except that the flowers are yellow. Even in the shape of comparatively small plants it is invaluable, owing to its blooming in winter, but when seen as a large specimen, it is indeed a sight to be remembered. It may be readily increased by means of cuttings put in at any time during the growing season.

The Cape Leadwort (Plumbago capensis), when liberally treated, soon covers a considerable space, and under anything like favourable conditions it is a most profuse bloomer, the whole plant being during summer a mass of most exquisite blue blossoms. It also grows and flowers well in a temperature rather above that of an ordinary greenhouse. Abutilon striatum is a vigorous tall-growing species with handsome lobed leaves and drooping flowers, large in size, and of a fine yellow colour, with brownish-crimson veinings. Regarded only as a fine-foliaged plant it is worthy of culture, while the flowers are distinct and showy. Abutilon vexillarium is altogether different in character from the last, the leaves being small and entire, while the habit is slender and straggling. The flowers are also wholly different from other Abutilons that are now so popular, being narrow and contracted in outline, the most showy portion being the bright crimson calyx whence protrudes the yellow corolla. There is a variety also in which the leaves are irregularly mottled with yellow.

The Glory Pea (Clianthus puniceus) and its variety magnificus are handsome pillar plants, especially when laden with their clusters of brilliant lobster-claw-like blossoms. The light foliage is by no means unattractive, even when there is no bloom. In planting the Clianthus it should be borne in mind that the leaves are liable to the attacks of red-spider if kept in too close or dry an atmosphere. A good syringing frequently with clean soft water tends greatly to prevent its effecting a lodgment on the leaves.

Fuchsias.—All the free-growing kinds are lovely objects when employed for covering pillars, and to the ordinary garden varieties may be added some of the distinct species. Among garden kinds there is a great deal of variety, some having a white corolla with coloured sepals, and others light sepals and a coloured corolla, while there are also flowers with both sepals and corolla dark in colour. Of these there are good double-flowered varieties as well as single, but the last-named are the more floriferous. Fuchsia Dominiana, a fine old hybrid kind, with long blossoms, is well suited for the purpose. Of species the hardy F. gracilis quickly covers a considerable space, and flowers in great profusion. Its variegated varieties also acquire very distinct markings when grown under glass. F. dependens is well suited for training in this way, and F. corymbiflora, with drooping clusters of long, bright crimson-coloured flowers, contrasts strikingly with the minute foliage and blooms of F. microphylla and F. thymifolia.

The climbing Butcher's Broom (Ruscus androgynus).—The leaves are the principal attraction in this Ruscus, the flowers being small and insignificant; but, notwithstanding, it is a fine rapid-growing subject, and its ample dark-green foliage is so ornamental as to merit greater attention than is usually bestowed upon it. This plant forms a stout root-stock, from which are produced Asparagus-like shoots, varying in size according to the strength of the plant. A large shoot grows very quickly, and it is furnished with long pinnate leaves of a leathery texture that will resist any amount of cold draughts of air.

The great Cape Honey-flower (Melianthus major).—As in the case of the Ruscus, the flowers of this add but little to the attractions of the plant, its principal ornamental features being the leaves of a glaucous or bluish colour. It grows rapidly, and is of a soft, tender nature; the unpleasant odour of the young leaves is by no means desirable; a pillar, however, clothed with it is, nevertheless, very ornamental. The pure white flowers of the New Zealand Clematis (C. indivisa) are borne in great profusion during the earlier months of the year, and at all times the dark green foliage is an attractive feature. It is a plant that makes rapid progress, and soon covers a considerable space.

The small Trumpet Honeysuckle (Lonicera sempervirens minor) is hardy in many localities, but it is seen at its best when treated as a greenhouse plant, as during the summer months it is profusely laden with clusters of bright scarlet tube-shaped blossoms. Besides the above there are the strong-growing varieties of Passifloras, Tacsonias, and both the green and variegated forms of Cobæa scandens, but all these are to be regarded in the light of climbing plants, fit rather for draping roofs than pillars of conservatories. H. B.

Malmaison Carnations from the open.—A correspondent mentions Malmaison Carnations growing in the open in Devonshire. The last three years I have put in cuttings they have bloomed and done well. Even sharp frosts have not nipped them.—Somerset.

FLOWERING CACTI.

It is more than probable that some day many of the beautiful flowering Cacti will hold a far higher position than is at present occupied by them in most gardens, for they are certainly not nearly so popular as might be supposed, when the beauty of their flowers and simple cultural requirements are taken into consideration. The large, vivid-coloured blossoms of many of the Cereuses or Phyllocactuses, as they are also called, are not equalled for gorgeousness by any other group of greenhouse plants. True, they do not remain long in perfection, but still a succession is kept up for a considerable time, while, though some of the varieties greatly resemble each other, there is in many of them a considerable amount of variation in the peculiar satiny or metallic lustre with which the interior of the bloom is suffused. This, which adds so much to the attractiveness of the flower, is quite impossible to describe, as the same bloom viewed from different standpoints appears to possess as many different shades of colour. One of the finest of this group is C. J. T. Peacock. The flowers of this are very large, as much as 9 inches across, and in their colouring, vermilion-scarlet, dazzling purple, and violet, are charmingly blended. A great favourite is the cream-coloured Phyllocactus crenatus, which flowers very freely, and whose blooms are also very agreeably scented. Phyllocactus delicatus is of quite a different tint from the generally-cultivated varieties, being of a very pleasing shade of rose.

The Echinopsis represents an interesting family, and we give a figure of E. Eyriesi, a beautiful kind, and one that amateurs should certainly grow. Mr. Watson, in his interesting book, "Cactus Culture for Amateurs," writes of this family as follows:—

The following is from the notes of the late Curator of the Royal Gardens, Kew (Mr. J. Smith), and is worthy the attention of Cactus growers. Writing about Echinopsis cristata, which he grew and flowered exceptionally well, he says: 'This showy plant is a native of Chili, and, like its Mexican allies, thrives if potted in light loam, with a little leaf-mould and a few nodules of lime rubbish. The latter are for the purpose of keeping the soil open; it is also necessary that the soil should be well drained. In winter water must be given very sparingly, and the atmosphere of the house should be dry; the temperature need not exceed 50 degs. during the night, and in very cold weather it may be allowed to fall 10 degs. lower, provided a higher temperature (55 degs.) be maintained during the day. As the season advances the plants should receive the full influence of the increasing warmth of the sun, and during hot weather they will be benefited by frequent syringing overhead, which should be done in the evening. It is, however, necessary to guard against the soil becoming saturated, for the soft fibrous roots suffer if they continue in a wet state for any length of time.

"None of the species require to be grafted to grow freely and remain healthy, as the stems are all robust enough and of sufficient size to take care of themselves. The only danger is in keeping the plants too moist in winter, for, although a little water now and again keeps the stems fresh and green, it deprives them of that rest which is essential to the development of their large, beautiful flowers in summer."

In writing of E. Eyriesi the author says: Stem no larger than an Orange, with about a dozen ridges, the edges sharp, and bearing little globular tufts of whitish wool and red, hair-like spines. Flower exceedingly large for the size of the stem, the tube being more than 6 inches long, funnel-shaped, pale green, with tufts of brown hairs, which look very much like insects, scattered over the surface. The petals are numerous, narrow-pointed, spreading, pure white, the stamens pale yellow, and the star-like stigma white. This species is a native of Mexico, and was introduced by the late Sir John Lubbock, about 1830. It blossoms at various seasons, generally in summer. 'Independently of the large size of the flowers, which rival in dimensions those of the Cereuses, it is remarkable for the rich, delicate odour they exhale at night, at which time its glorious blossoms expand. When young, they resemble long, sooty-grey horns, covered over with a thick, shaggy hairiness, and would never be suspected to conceal a form of the utmost beauty and a clear and delicate complexion. When the hour of perfection has arrived, and the coarse veil of hair begins to be withdrawn by the expansion of the unfolding petals, one is amazed at the unexpected loveliness which stands revealed in the form of this vegetable star, whose rays are of the softest white' (Lindley). For its cultivation this plant requires a warm-house always; but care should be taken to give it plenty of fresh air and as much light as possible. The soil best suited for it is a rich loam with a little sand and charcoal. It likes liberal watering in summer. E. E. flore-pleno (double-flowered): A form with several rows of petals, which give the flowers a doubled appearance. E E. glauca (hoary-grey): This variety differs from the type in the absence of the dark brown hairs from the flower-tube, which is also shorter than in E. Eyriesi. Probably a native of Mexico."

Echinopsis Eyriesi. From a photograph by Miss K. T. Stedman, Bramley, Guildford.

The following kinds are beautiful also, as mentioned in the book:—

"E. oxygonus (sharp-angled).—This is very similar to E. Eyriesi. Stem globular in shape and divided into about fourteen acute-edged ridges, upon which are tufts of brown spines, varying from ½ inch to 1½ inches in length. Flower 8 inches long, the tube slightly curved, covered with little scales and hairs, and coloured green and red. The petals form an incurved cup, and are broad, with pointed tips; their colour a bright rose, with a lighter shade towards the centre of the flower. As in E. Eyriesi, the flowers of this kind are borne several together from the ridges near the growing centre of the stem. It is a native of Brazil, whence it was introduced nearly half a century ago. It thrives in an intermediate-house, if treated as advised for E. Eyriesi, and its flowers will develop in summer. The extraordinary size and beauty of the blossoms are sufficient to compensate for their comparatively short duration after expanding; it is also interesting to watch the gradual development of the tiny, hairy cone, which is the first sign of the flower, and which increases in length and size at a surprising rate.

E. Pentlandi (Pentland's).—A pretty little species, with a globose stem 3 inches in diameter, divided into about a dozen rounded ridges, which are undulated or broken up into irregular tubercles, when the ridges do not run parallel with each other. Each tubercle is crowned with a tuft of brown, bristle-like spines, ½ inch or so long. The flowers are large in proportion to the size of the plant, the tube being 4 inches long, and trumpet-shaped; petals arranged in several overlapping rows and forming a cup 2 inches across, the lowest whorl turning downwards; in colour, they are a brilliant red, the stamens white, and the stigmas yellow. Three or four flowers are often expanded together on the same stem, springing from the side instead of the top of the plant. There are several distinct seedling or hybrid forms of this species, remarkable in having the colour of their flowers either red, yellow and white, or white, whilst some, such as the one known as flammea, have flowers only 2 inches long. These kinds may be all grown in a sunny greenhouse or window, as they only require protection from frost. They may be placed out-of-doors in summer, and be kept under glass only during winter, treatment which will result in better growth and more flowers than if the plants were kept permanently under glass.

E. tubiflorus (tube-flowered). — This species has an orange-shaped stem, about 4 inches high, and divided into about twelve prominent, sharp-angled ridges, along which are tufts of blackish spines, ½ inch long, and set in little cushions of white wool. The flower springs from the side of the stems, where it replaces a tuft of spines, and, as in E. Eyriesi, the tube is remarkably long, whilst the size of the whole flower much exceeds that of the rest of the plant, the length of tube being about 6 inches, and the width of the flower over 4 inches. The petals are pure white, recurved, displaying the crown of yellow stamens, arranged in a ring about the rather small, rayed stigma. The tube is uniformly green, except that the scale-like bracts are edged with long, blackish, silky hairs. A native of Mexico. E tubiflorus may be placed along with E. Eyriesi and E. oxygonus, as it requires similar treatment. The three kinds here mentioned may be recommended as a trio of very fine-flowered, small-stemmed Cacti, which may be grown successfully in any ordinary greenhouse."

A use for the "Nasturtium" (Tropæolum).—I have seen to-day a pleasing illustration of the way the Nasturtium may be used for decoration. It seems generally to be a despised plant, I suppose because it is so common, and also because of its strong odour, although it may be worked in amongst other subjects in vases. An épergne was filled with Nasturtiums in many shades of colour, from deep crimson to bright terra-cotta, from deep yellow to sombre bronze. The flowers were lightly arranged with their own foliage, and short sprays hung over the sides here and there, whilst three or four sprays of Asparagus lent an air of lightness to the arrangement. Godetias, and Red and White Lavatera with Asparagus also make charming vases. The Nasturtiums are used sometimes in the salad-bowl, cut and dotted about over the salad. They are wholesome as well as pretty.—R. W. F.

Tigridias are now among the showiest of bulbous plants, and though all too evanescent, there is a rich profusion of buds that make up for this. Fully expanded in the mid-day sun, some of the varieties are gorgeous in their markings, while others are equally noteworthy for their chaste and in some instances almost delicate shades. Given a rich soil, these things always please, and they take up so little room that a few clumps should always be planted each year. By inserting them amongst the spring-flowering subjects they presently fill what otherwise would have been a gap in the border. They are also very charming for association with Galtonia candicans.

OUTDOOR PLANTS.

A GARDEN IN SOUTH WALES.

As a constant reader of Gardening, I venture to think that the enclosed photograph may interest other garden lovers, as showing what may be done with hardy plants and a little time and trouble in quite a small garden. The whole of the work, except pruning the Roses and occasionally a boy to clean the paths, being done by a lady. From early spring, when the Yellow Aconites first appear, the garden is never without flowers, and the greater part of the year it is gorgeous with its masses of colour. Crocus, Scilla, Hyacinths, Tulips, Daffodils, and Narcissi delight the eye in the spring, and late-flowering Tulips carry on the scheme of colour until the Pæonies begin, and the Great Scarlet Oriental Poppies shine like globes of fire. Delphiniums in all shades of blue, also a white one, grow to a great height, and Scarlet Lychnis, Foxgloves, Aquilegias, Mrs. Sinkins Pinks all contribute to fill the little plot of ground with colour and the air with fragrance. Roses do exceedingly well, except the more tender Teas, which are apt to damp off in the bud, probably caused by being (Kniphofias) are now in flower, their tall spikes looking well against the water; and Gladiolus Brenchleyensis and Anemone japonica, white and pink, will soon be in bloom. The large bush in the middle of the photograph is a white Rosa rugosa. The garden is my hobby. I am always delighted to show it to anyone interested.

M. Llewellyn.

PANSIES FOR EDGING.

Can you tell me the best sorts of Pansies for edging? I have an edging of Pansies which has had a very untidy appearance most of the summer. Although the plants were described in the seed catalogue as 4-inch plants, many of the shoots are 12 inches to 18 inches long.—H. S.

*** You ask what are the best Pansies for edging, and as it is possible you may be referring to those known as Fancy Pansies, or more probably to those of a French or German strain, you would find it much more to your advantage in every way to take in hand a collection of the best Tufted Pansies (Violas) if you wish to get a really good effect. The general experience of most persons who raise seedling Pansies of French and German origin is not at all satisfactory. As a rule, the seeds germinate readily, and in a very short time the resulting seedlings attain sufficient size to be planted out in permanent quarters. During the spring and early summer these plants flower most profusely, and in colours of a very varied character and often of the most gaudy description. While they last they are very interesting and pretty, and generally are much admired. But long before the summer is well advanced the plants show signs of premature decay, which becomes absolute before a few weeks are over, until at last comparatively few plants remain of those raised from seed. This is the experience of many gardeners who grow these plants and cannot understand the cause of failure. A Pansy to succeed in the South of England must have a good constitution, and while those sowing seed on the Continent appear to pay special attention to the perpetuation of rich and striking colours in their flowers, they certainly seem to disregard the important points of constitution and true tufted habit, each so essential in plants of this description. For this reason, we unhesitatingly recommend you to try the different forms of the Tufted Pansy, as in this fine, hardy plant you may obtain blossoms of charming form, immense variety of colour, and by a careful selection, plants possessing a dense, compact habit, or, if you prefer it with growth of a creeping, or as termed by some, crawling character, and which rarely exceeds in height 4 inches. Many of the newer sorts are very fragrant, while the refined appearance of a large number of the rayless flowers is sufficient recommendation to those who once have seen them. These plants may be propagated almost at any time, although the best periods are during the late summer and early autumn.

For autumn planting and a consequent early spring and summer display, you should commence their propagation at once, so that well-established plants may be ready for placing out in the border during the early days of October. On the other hand, if you do not wish to plant until springtime—say March and April—cuttings may be inserted during the end of September and during October. The Tufted Pansy is so hardy, too, that little or no protection is needed for the rooted cuttings during the winter. For the last few years I have had the majority of my young plants fully exposed throughout the winter, no frame or frame-light ever being used, and upon the advent of the more genial weather of the spring, the plants have been all that one could desire. They do not like

A garden in South Wales. From a photograph by Miss Llewellyn, Court Colman, Bridgend.

so near the water. About a dozen are grown in pots and flower well in the little greenhouse, which is unheated, the frost being kept out in winter by means of a lamp and thick blinds. All the summer one long border has been jewelled with Pansies, and now at the time of writing the Carnations are in great beauty, large, healthy plants covered with bloom. Roses, Pentstemons, Perennial Phlox, Hyacinthus candicans, Helenium, Coreopsis, and the annuals which were planted when the bulbs went out of flower make the garden a blaze of colour. The garden faces south-west, and is sheltered from north and east. The flowering shrubs outside are Rhododendrons.

The garden is difficult to photograph, as there is a wall round two sides and water on the third. The photograph does not do it justice, and although it was very bright with Pinks and Pansies when it was taken, a large bush of yellow Scotch Brier and scarlet Oriental Poppies does not show in the photograph. It would take up too much space to name all the flowers, but I may mention that a mixed bed of Auriculas and Anemones was very beautiful and much admired in the spring; also a border edged with the old-fashioned double white and lilac Primrose was very pretty. Lilies of the Valley and Violets grow luxuriantly; Tritomas to be coddled. Under the latter conditions they are so susceptible to insect pests. The good points of the Tufted Pansy as a plant for garden decoration are their free-flowering qualities, their continuous flowering, generally from March or April until October, their adaptability to almost any position in the garden, and their exceedingly hard and strong constitution.

You infer that you prefer to raise the plants from seed, and this may easily be done, but care should be taken to sow only that seed which a specialist of this plant can provide you with. Most of the trade growers identified with the Tufted Pansy, and whose names may be found in the advertisement columns of Gardening, should be in a position to supply you with what you need. There is this disadvantage, however, in raising plants from seed, that you get quite a mixed lot of colours, and quite a variety of growth—some very tufted, and others long, coarse, and straggling. To obtain the best effect in the garden, mass a number of plants of one variety, in which, of course, the habit of growth would be similar, rather than by planting them indiscriminately, in which case the growth of one being more vigorous than another must of necessity upset the arrangement of a bed or border. This, then, is one of the advantages that the planting of named varieties gives

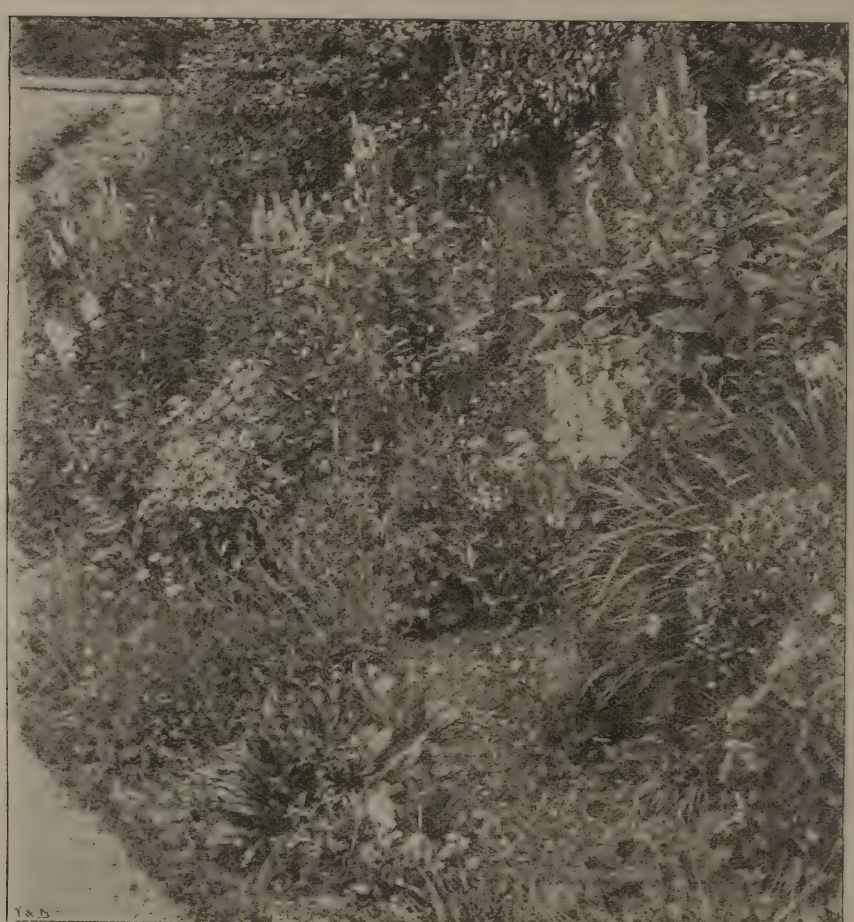
you, while yet another is afforded you in having those sorts of fixed colours. Many very pretty Tufted Pansies lose their character and their colour during a long spell of hot weather, and in the selection appended below special pains have been taken to include only those of good fixed colour, and those also possessing compact and dwarf habit of growth. Most of these may be bought very cheaply, the trade growers offering very liberal terms to those ordering cuttings in the autumn, and this is by far the best method to adopt when acquiring a selection. The price of cuttings per hundred at this season ranges from about 4s. to 8s. or 9s. per hundred. In the spring plants may be had of established sorts at from about 12s. 6d. to 15s. per hundred in ten sorts, and sometimes at a lower cost. The following may be recommended for the edging you write about:—

Selfs.—*White:* Christiana, creamy-white, orange eye; Ethel Hancock, purest-white, orange eye; Violetta (miniature flower), pure white, orange flushing on lower petal; Niphetos, creamy-white; Mary Scott, blush-white, very chaste; and Nellie, large creamy-white. All of the foregoing flowers are free from rays. *Yellow:* Princess Louise, rich yellow, compact, rayless; Ardwell Gem, rich sulphur-yellow, very free and constant; Sir Robert Peel, light yellow, rayless, exceedingly dwarf and spreading, free-flowering also; Bullion, deep rich yellow, one of the earliest as well as one of the latest to bloom; Pembroke, large circular, rayless, bright yellow, upper petal a lighter shade of the same colour; this variety is rather taller than the others; Lemon Queen, a fine large circular flower, lemon-yellow, dwarf and compact. *Blue:* Britannia (new), deep rich metallic blue, rayless, very effective colour; Blue Gown, very dwarf and compact, free-flowering, mauve-blue, the best of the kind for bedding, and Magnificent, a seedling from the last-named, very compact and free-flowering. *Blush-lilac, rose, etc.:* Rosea Pallida, pale blush-lilac, very free, dwarf and compact; Florizel, deep blush-lilac, very free, large flower, fine habit and good constitution; Celeste, light lavender-blue, very free and compact; Magic, rich rosy-crimson, large, free, and good habit; William Niel, bright rose, very free, and good habit; Sweet Lavender, soft lilac, good flower, rayless; Robin (miniature flower), wonderfully free-flowering blush flower, very compact, beautiful for edging. *Purple:* Councillor W. Waters, rich bright purple, very free, compact habit; Acme, crimson-purple, fine bright colour, and best plant of this shade; Crimson King, another good crimson-purple.

Fancy and edged sorts.—There are many excellent sorts for bedding, amongst the best being White Duchess, Duchess of Fife, and Goldfinch, each beautifully margined and very constant; Mrs. C. F. Gordon, bluish-purple and white; Cottage Maid, somewhat similar to the last-named, and Stophill Gem.

MIXED BORDERS.

In forming new borders of this kind the condition of the soil must determine what amount of preparation is necessary. If the ground has laid any length of time without being cultivated, it will require more preparation than that which has lately been occupied with other crops. Let it, therefore, suffice to say that in order to secure lasting success, a depth of from 18 inches to 2 feet of good soil is necessary, and as many of the subjects with which it will be planted will be permanent in character, it should be trenched to the required depth. Any large stones or other rough material should also be picked out of it, and, if the soil is poor, something stimulating should be added. This may consist of well-rotted farmyard-manure or fresh earth. On strong, heavy soils, leaf-mould, road-grit, or charred rubbish will be better than strong manure. When either of the last-named materials are used, they should be spread on the surface after the land is trenched, and then be forked in. It is of primary importance to secure a good tilth, so that the roots may have a fine, well-broken soil on which to lay hold. On this success a good deal depends, especially in the case of small plants and those with few and delicate roots. Planting may be done either in spring or autumn, but I am decidedly in favour of the latter. There are, however, some few valuable hardy plants of which, unless I could secure large, sturdy pieces, I would not like to risk planting in the autumn. I would rather get them home before winter and give them some protection until spring. All, however, except the most hardy and strong-rooted subjects, should be planted by the middle of September, and then they will have time to get settled in their new quarters before severe weather sets in. Whenever I have adopted early planting, and have put in fair-sized pieces, I have not known any reputedly hardy subjects to suffer from a hard winter. Having to deal with a soil that is not favourable for many tender-rooted plants, owing to its harsh and crude character, I have frequently to make the stations with some good soil before I can put in the plants, and there are a good many other gardens where the soil is not of a kindly nature in which a few handfuls of fine sandy soil, if put round the roots of fresh-planted subjects, would be of great benefit to them. I find that such little extra attentions as these make all the difference in the results.



A mixed border in the garden at Hatton Castle, Turriff, N.B. From a photograph by Mrs. Gordon-Duff.

The arrangement of the plants in a herbaceous border will depend somewhat on what they are; but more depends on the width of the border. A much more striking arrangement can be made in a moderately wide border than in a narrow one. A width of from 10 feet to 14 feet is the most suitable, as then plants of a proportionate height and diameter can be grown in it. I like for the back a few deciduous and evergreen flowering shrubs; they diminish the bareness during winter, and there are so many flowering shrubs of compact growth which blossom early in spring that they add considerably to the attractiveness of the border. I, however, leave spaces between the shrubs, which should form the back row for such tall-growing plants as Hollyhocks, Tritomas, and Helianthuses, and that very handsome summer-flowering Reed, Arundo conspicua. Other plants may consist of Chrysanthemum maximum, Harpalium rigidum, Coreopsis lanceolata, Hyacinthus candicans, Larkspurs, Golden Rods, tall Campanulas, Anemone japonica, Phloxes, Perennial Lupines, scarlet Lychnis, Thalictrums, Pæonies, Perennial Peas, etc., Veronicas, Dielytra spectabilis, Gaillardias, Sedum Fabaria, Œnothera fruticosa, Potentillas, Dictamnus Fraxinella, Campanula persicifolia, Asphodelus luteus, Canterbury Bells, Antirrhinums, Wallflowers, Aquilegias, and Matricaria inodora fl.-pl. I find it to be more convenient for the growth of low-growing subjects to have a space 3 feet in width along the front for bulbs and other dwarf-growing plants.

Of course, a little attention must be paid to the height of the various subjects. For instance, in the case of bulbs the late-flowering single Tulips, Jonquils, and Narcissi should be at least 2½ feet away from the front, and such plants as Alyssum saxatile compactum, Iberis cordifolia, Campanula carpatica, Rudbeckia Newmani, double and single Pyrethrums should be in front of them. To these might be added Sweet Williams, Pinks, and Carnations For the space next the walk there are so many subjects of a dwarf character so well suited that one hardly knows which to select. Of bulbs, I should certainly plant Hyacinths, Tulips, Crocuses, Snowdrops, Anemones, Jonquils, Irises, Grape Hyacinths, Winter Aconites, Scillas, Snowflakes, Triteleias, and hardy Cyclamens. Mingled between the clumps of bulbs should be Aubrietias, Pansies, Phlox Nelsoni, P. setosa, Polyanthuses, Primroses, Erica carnea, Arabis, Œnothera macrocarpa, Myosotis, Plumbago Larpentæ, and many others which I need not name.

J.

Aster Amellus bessarabicus.—Among the early Asters now in flower, and, therefore, too early to properly be grouped among the popular so-called Michaelmas Daisies, this is one of the best and most serviceable, and, whether associated with other things or in beds nearly or wholly devoted to it, is very pleasing. A good bed may be made with this plant and Anemone japonica alba as a centre, the two plants flowering together and profusely for a long time. Scarcely more than 2 feet high in ordinary seasons, the Aster, with its much-branched habit of growth, makes a capital display.

MIGNONETTE FOR EARLY SPRING FLOWERING.

In whatever form this modest but delightfully fragrant flower is grown, it is a universal favourite, and is appreciated at all periods of the year. Where it is required early in the new year, the present is a suitable time to sow the seed. I have generally adopted two or three forms, which have given satisfaction, and I can with confidence recommend them to others.

For the earliest lot sow in 5-inch and 6-inch pots, which should be perfectly clean and well drained. The compost should consist of two parts of turfy friable loam, one part leaf-mould, well-decayed cow or horse-manure, with a little silver or sharp sand, wood, charcoal, and old mortar, well mixed in the soil. The mortar-rubble keeps the soil sweet. Make the soil very firm in the pots, and water through a rose, allowing the pots to stand a little time previous to sowing the seed. This should be carefully covered with fine soil. Place the pots in a cold-frame or where they can be protected against heavy rains. When the seedlings are about an inch high, remove all the weakest, ultimately leaving five or six of the most robust. Keep the soil in the pots in a nice genial condition by careful watering and frequently stirring up the surface of the soil with a pointed stick. The best situation during the winter is a shelf near the glass, with a temperature of from 40 degs. to 50 degs. In January a little higher temperature may be given; but the more gradually the plants are brought on to the flowering state the finer and stronger the flowers will be. A little weak soot or manure-water may now be given with advantage, but let it be well diluted. A few neat sticks should be placed near the edge of the pots, and a piece of matting neatly carried round them to afford support. In the case of the

Tree or standard form, the pots must be 3-inch, instead of 5-inch or 6-inch, as in the former the soil or compost may be the same, with the exception of the bones and old mortar, which can be added at the time the plants are put into their flowering size. The seedlings must also be carefully thinned out until the most sturdy plant is secured, removing all the rest. A neat stake should now be placed in each pot, and the young plants carefully fastened to it, as they make their growth. All side shoots must be pinched back as soon as they can be laid hold of. This must be repeated until the young plants have reached the desired height, which may be from 2 feet to 3 feet, according to taste. In pinching out the side shoots, do not injure or remove the main leaves on the stem. These should be left entire, as they help to give strength and vigour to the stems.

As soon as the points have been removed from the plants, side shoots will be made near the top, and these must be carefully trained on a wire-trellis. All flowers must be removed until the trellis is well furnished with branches, which may then be allowed to bloom. By preventing seed forming, removing the faded flowers, and occasionally applying a little weak manure-water, they will continue to flower abundantly for many months.

The third or pyramidal form is produced by merely pinching out the points of the side branches repeatedly until the plant is well developed. The plants of the second and third form must, of course, have been repotted from the 3-inch pot until they occupy 8-inch or 10-inch ones.

H. Ellis.

Asclepias tuberosa.—Far too rarely seen is this brilliant autumn-flowering perennial, yet it is certainly one of the most striking of autumn flowers. Though not a difficult plant to grow, it is by no means an easy matter to secure large specimen plants. Lack of knowledge possibly as to its exact requirements may to some extent account for this, for the plant appears to be only well suited to very warm sandy soil. Quite near the sea-coast in spots where the soil is very sandy the plant is more happy, and in such places is worth growing freely. On clay soils the plant is rarely satisfactory, and usually becomes a victim to slugs in winter. The plant grows about 2 feet high when well established, and produces terminal corymbs of a bright orange hue.

FRUIT.

BUSH PEAR-TREES.

Few fruits give more pleasure to the amateur than Apples and Pears, and I do not know any form of tree more suitable than the bush, as it can be grown in gardens of limited space. It is more prolific than other forms if worked on the right stock, and this makes it equally suitable for large gardens where big crops are needed. The specimen shown in the illustration will give an idea of the fruiting capacities of a bush-tree in a young state. The kind illustrated is Duchesse d'Angoulême, a large fruit much liked in some places. It does best in a warm soil grown on the Quince-stock, and is a great favourite in Jersey; there it attains a large size and is of excellent quality. I do not advise its culture in wet or clay soils, and in the north it well deserves a wall. It is in season from October to November, and is an old favourite in many gardens. This is only one out of many which are suitable for bush culture, as so many varieties do well in this form, and may be termed true amateurs' trees, as they come into bearing in so short a time after planting as three years. Trees, well grown, will give a bushel of fruit, but my advice is not to aim at mere quantity, but quality. One of the best Pears, Doyenné du Comice, is better in bush form, where it succeeds, than on a wall; the flavour is superior, and this is the case with many bush fruits. Probably the fruits are more exposed and thus get better quality. Another important point, and one amateurs should not lose sight of, is that the small bush-trees are less exposed to high winds, and may therefore be planted if large fruits are desired.

As regards varieties suitable for bush form, there are many. Most of the Pears do best on the Quince-stock when grown in this way. The Pear-stock may be suitable in a few cases, but it is too coarse or rank. The trees make too much wood and do not fruit freely enough. Doubtless in wet soils or heavy land the Pear-stock may be used to advantage, but not otherwise, except in the case of a few kinds. For instance, the well known Clapp's Favourite does well as a bush-tree, but in light soil is better on the Pear than the Quince. This is an exception, but Beurré Rance, Comte de Chambord (a very early fruit), and the Jargonelle are happier on the last-named stock. In making a selection of bush-trees for crop alone—not taking flavour or keeping into consideration—the question of stock must be taken into account, and for flavour the soil and situation would greatly influence the quality. Another point often overlooked is to obtain a succession of fruit, not a glut at one time.

Much may be done at this season in the selection of varieties. The trees differ greatly in their growth, some growing much too large in a few years. I recently saw a number of Jargonelle-trees in bush form in an amateur's garden with so much barren wood—gross shoots—the trees were ruining everything they came in contact with, and rarely bore a fruit. These were on the Pear-stock. If they had been double grafted it would have checked this rank growth. But amateurs who get their trees from a good source need not fear the question of stock. This will have been settled earlier, but it is well to state the soil, aspect, or locality, as some bush-trees never fail to crop, whilst a few are shy bearers. One of the very finest Pears grown, as regards size, is grand in bush form; this is Pitmaston Duchesse, a variety which all amateurs should grow. It rarely fails to crop, the tree is a strong grower, and does well on the Quince. It grows too gross on the Pear-stock. I have a very fine Pear in bush form not often seen, but a grand bearer of large fruit, and does well in poor land. This is Soldat Laboureur, often known as Soldat d'Espéren; this variety is in season in November, and never fails to give fruit. The great advantage of bush-trees is that they are so readily grown, need little management, and not much space. The pruning which so many fail to manage is simple, consisting in merely shortening the new wood, and keeping the trees open in the centre to admit light. In August, this year's wood may be shortened, and in November there will be little pruning other than again thinning-out and shortening.

W.

Bush Pear-tree (variety Duchesse d'Angoulême.)

LATE MELONS.

The fruit on late plants should now be setting freely, and if the present favourable weather should continue for a little time longer there ought to be no difficulty in ripening the fruit while there is sufficient sun to give it flavour. Pay attention to keeping the growths thinned out as soon as a sufficient set has been obtained. It is better not to overload plants with fruit at this season; better have two or three good ones than half-a-dozen of inferior quality. Where hot-water pipes are used for bottom-heat there will be no difficulty in keeping the temperature of the soil at the proper heat, but where stable-manure has to be depended upon for maintaining the requisite degree of warmth, great care must be exercised in watering. As the nights get colder it will be necessary to cover the glass with mats, particularly in pits that are not well heated; these, however, should be removed early in the morning, that the foliage may have the benefit of all the light possible. Plants growing in pots or tubs will need every care in the way of watering, for on no account should they be allowed to become dry. Those swelling their fruit should be assisted by a top-dressing and manure-water; the foliage must also be kept clean either by sponging or syringing. It is, however, not well to use the latter too freely, as the water is apt to run down the stems and rot the plants at the collar. If aphides are troublesome to the points of the young shoots, dip them in Quassia-water; the foliage may also be damped with the same if these pests are troublesome. Melons in frames on hotbeds should be raised off the soil, but do not expose them to the sun. The watering of these must be very carefully done, that the beds may not become soddened. If the heat is likely to decline too much before the fruit is ripe, add a fresh lining; at the same time do not cause it to rise too violently, or serious injury may be done in the way of scalding. If steam from this should get inside the frame, put air on early in the morning that the ammonia therein may not injure the foliage.

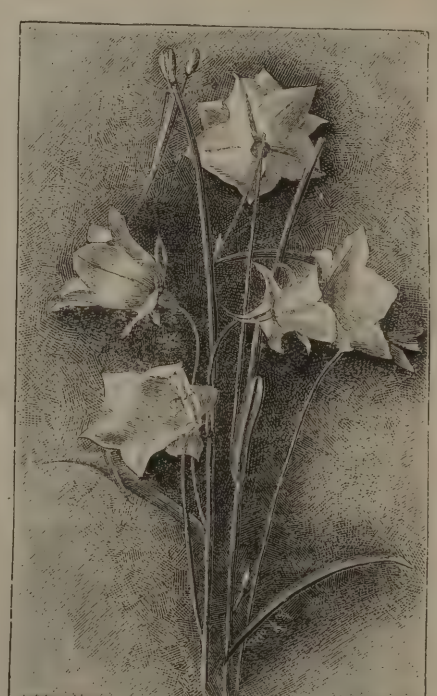
A new Gooseberry.—Of late years the raising of new Gooseberries has found but little favour. There are, however, plenty of kinds; but an addition noticeable for good flavour, or if superior to existing kinds, is an advance in the right direction. The new Golden Gem, shown at the last meeting of the Royal Horticultural Society, is a distinct type, and notable for its superior flavour. This is the result of crossing Whitesmith with Antagonist, a superb white dessert variety, with a large white prize or Lancashire berry, and the result is a bright golden berry of grand quality. This was raised by Messrs. Veitch at their Langley Nursery, Slough, and is a valuable introduction. Most Gooseberries are of drooping growth—not erect, as this one is. The berry is smooth, and keeps well. It was unanimously given an award by the fruit committee of the Royal Horticultural Society.

Planting Vines (*H. Cary*).—February is the best month to plant Vines. Procure one-year-old canes from a reliable nurseryman. Make the border fully a month before planting to allow time for the soil to settle. The border ought not to contain more than 1 yard depth of soil, with 9 inches of drainage below. To one cartload of loam add ¼ cwt. of ½-inch ground bones and one-sixth part old lime rubble, wood-ashes, and broken bricks to keep the whole porous. Animal-manure ought not to be employed in making the border. When planting remove the whole of the soil from the roots, spreading the latter out evenly and straight. Cover the roots with 3 inches of the compost, pressing it down firmly. The soil ought not to be wet—just moist—or it will knead together. By Christmas the Vines ought to be cut down to within four eyes of the base. As these grow gradually disbud them down to one, that at the base being the most desirable to retain.

Treatment of old Vines (*Phil*).—As may be expected, the bunches from old Vines are small, but if the berries are large and of good colour why wish to go to the trouble of planting new Vines? The roots pushing from the stems in the house do no harm, they are the result of a scarcity in the proper place—the border; moisture in the vinery encourages their growth. When the Vines are thoroughly ripe the roots will die. If the border is high remove 6 inches of the soil. This would allow more warmth from the sun to get to the roots. Do not dig manure into the border, but lay some half rotted stable dung on the surface in November, say 4 inches thick, allowing it to remain until the end of March, when the greater part can be raked off, allowing the rest to decay and gradually mix with the soil. Sufficient heat to keep out the frost in winter is all that is necessary; indeed, a little will not harm the Vines. It would take at least six years before you would get a full crop of Grapes from newly-planted Vines. Do not crop the Vine border with anything; leave it entirely for the Vines, except you might plant a row of dwarf flowers at the edge, or a row of Lettuce, but deep rooting subjects are injurious.

THE PEACH-LEAVED BELLFLOWER.

The Peach-leaved Bellflower is a very beautiful species, and may be used with considerable effect both on the rock garden and the mixed border. It, if we except the trailing species, is by far the most elegant and charming of the Bellflowers at present in cultivation. From early summer until late autumn it keeps up a succession of bloom, the wiry stems being often bent to the ground with a wealth of pretty cup-shaped flowers of various shades of purple, blue and white. Confined as it is to Northern and Central Europe, chiefly on calcareous soils, there is no difficulty about its hardiness in this country—indeed, it is even said to be naturalised in some parts of England. Excluding Canterbury Bells and C. pyramidalis, C. persicifolia is the only species in which any improvement has been effected. C maxima, of which there are purple, blue, and white-flowered forms, is a giant among Bellflowers. The variety called coronata also holds a conspicuous place in this genus. It grows from 2½ feet to 3 feet in height, producing on its slender wiry stems numerous curious double flowers, and making very effective masses when the plants are grouped. The woodcut represents the common white form widely distributed in gardens. It is much appreciated on account of its pure white blossoms, so useful and effective in table and other decorations. C. persicifolia and its varieties may be grown with the greatest ease in ordinary garden soil. All the Campanulas may be readily increased by division or seeds.



The Peach-leaved Bellflower (Campanula persicifolia).

C. p. alba grandiflora is one of the most beautiful white-flowered Campanulas we possess—free, graceful, and very vigorous. All the forms of C. persicifolia may be grown in pots for the greenhouse. D.

Improvement of light soils.—Being a constant reader of Gardening, I submit the following for the benefit of other readers of your valuable paper: Possibly many of your readers, like myself, have experienced some difficulty in the culture of vegetables and flowers on account of the soil being very light, and also too full of humus as a result of overmanuring. The ill effects of such soils are seen when, for instance, Peas fail in a rather dry season, or plants of various Brassica do little else but club; and coming to flowers, Roses fall a prey to mildew, and make only stunted growth, while some plants absolutely refuse to grow at all. Now, the remedy for most of these evils is found to a very large extent in simply withholding manure for one season, and procure some stiff clay, such as builders excavate, and apply it on the surface of the ground during the two latter months of the year—about a barrowload to a square yard. Let it remain spread evenly over the surface of the ground all through the winter, when the frost will thoroughly pulverise the clay, and then in the early spring choose a rather dry day to dig it in one spit deep. It is not desirable to attempt digging when the clay is in a sticky condition, otherwise the good effects of the frost would be to some extent minimised. After this operation, the ground is in condition for cropping. I have done all that I here recommend in this garden, and have found the experiment most successful. The clay has not so far appeared to prevent clubbing in Brassica.—W. E. Jones.

Culture of Campanula pyramidalis.—I have read the paragraph in Gardening of 31st July on the growing of Campanula pyramidalis, and its being so simple—to grow one year to flower the next. Please tell me why mine will not flower this year? The seed was sown the end of last summer, and the plants put out in the border this June, and they are quite small now, with no flower-spike. They were not transplanted at all, but put straight out from the boxes where they were sown. I also had two in pots, which I bought as small plants last autumn, and they have not shown any flower-spike yet at all.—Miss Darbyshire.

*** You should have transplanted the seedlings in April or early May. Even better success would be obtained by getting the plants forward enough to put out late in the autumn. Yours were undoubtedly starved and stunted by being in the seed-pans so long, and may perhaps recover for late bloom, but cannot possibly do well after such crippling treatment. We presume your two pot-plants were not C. pyramidalis, but one of the many pretty dwarf species used as pot plants and for rockeries. Pot on into similar compost as they were growing in when purchased. Perhaps you neglected to give more root-room from the time of purchase as a tiny, recently-rooted plant?

Hollyhocks from seed.—Can I grow Hollyhocks from seed, and when and where is best to sow the seed?—Penelope.

*** Sow the seed in June in sandy soil in a cold-frame placed behind a wall so that shade will be provided without the trouble of covering the frame daily. When the plants are large enough to handle transfer them singly into 3½-inch pots in sandy soil, plunging the pots in ashes, protecting them from frost, snow, and rain by the aid of a cold-frame. In March the following year plant out in rich soil.

A cottage at Bickley.—Seeing an illustration of a cottage garden in your very interesting paper for Aug. 7th, reminds me of one at Bickley, which is well worth notice. It is a small place, but the creepers and vases, etc., have been quite a picture, and much admired, particularly a well-kept Holly-hedge, which I have never seen equalled. The garden took first prize last year at our local flower show. It is past its beauty now, but when I saw it a month ago it was a mass of bloom. The cottage is near Bickley-station, L.C. and D. Railway.—John Atkins.

A Double Nasturtium.—I send you flowers of a Double Nasturtium that I have grown for two years. I have shown it to some of my friends, and they all say they never saw anything like it before. Could I make anything of it as a new thing, and where should I send it to? It is free in blooming, and is one of the climbing Nasturtiums. Should be glad to know what you think of it?—G. A.

*** A very pretty flower. Send it, if possible, to one of the meetings of the Royal Horticultural Society, Drill Hall, James'-street, Westminster, held on the second and last Tuesdays in the month.

GARDEN WORK.*

Conservatory.

Tuberoses which have been grown cool will make charming groups now mixed with Ferns. For flowering at this season the bulbs are potted in 6-inch pots, three bulbs in a pot, and may be started in a cold pit, to be moved to the conservatory when the flowering spikes run up. Give liquid-manure to increase the size of the blossoms. After flowering the bulbs are thrown out. Good, sound bulbs are very cheap, especially when bought by the thousand. Lilium lancifolium (white and red) are useful now, and strong bushes of Hydrangea paniculata grandiflora, which have been grown cool, are very effective. To make good specimens they should be pruned hard back. The early-struck plants of Hydrangea japonica and the white variety Dr. Hogg should now be in 5-inch pots and outside ripening growth. Dr. Hogg is not quite so free a grower as the type, but when well grown it makes a fine specimen, and the flowers are useful for wreath-making, as they may be cut up, if the trusses are large, and mounted on wire. Hydrangeas in 5-inch pots, carrying one large truss of bloom, are very useful; but for the conservatory larger plants which have been cut back are more effective. Everybody with a conservatory to keep gay in summer should grow all of these Hydrangeas. Paniculata grandiflora is hardy nearly everywhere, but the others are not quite hardy, though they form huge bushes in the West of England, and flower profusely. Zonal Pelargoniums which have become leggy may now be cut down and the cuttings put in. Where the old plants break shake them out and repot in good loam and a little leaf-mould and sand. To obtain Heliotrope flowers in winter the plants, if in pots, must be pinched during summer to encourage a bushy habit; but if the Heliotropes are planted in the conservatory border, as they frequently are, prune back freely now to induce autumn growth to come away that will flower freely in autumn and winter if there is warmth enough. There will not be many flowers in winter unless a night temperature of 50 degs. to 55 degs can be maintained. Abutilons treated in the same way will flower freely in winter.

Ferns under Glass.

This is a good time to sow Fern-spores. Those who grow a collection of Ferns will find plenty of ripe spores on the backs of the fronds, and these can be gathered, and sown at once in pans of good loam or peat, made very firm. Set the pans of spores in a shady corner and cover with glass. Keep the soil in an equable condition as regards moisture. If the soil is allowed to become dry after germination begins the little plants will die. The best way to water will be to dip the pans nearly up to the rim in a pail or tank, and keep them there till all the soil is moistened. Any young Ferns which require more pot room should have it at once. In small houses the difficulty usually is to keep the plants in small enough pots. If all the plants were grown into specimens a fewer number would have to be grown. Filmy Ferns, Todeas, and others are interesting, but are not so generally useful as others, as they cannot be made available for furnishing the rooms. A frame can be arranged in a shady corner for them; it may even be excavated a couple of feet in the ground. A few Palms may be grown with the Ferns. But the same difficulty occurs with Palms as with Ferns: the plants are continually getting too large, especially if such rapid, coarse growers as Seaforthias and Latanias are kept. Kentias in variety are the best Palms for an amateur to grow. They are comparatively slow in growth, and will stand the dry atmosphere of the room better than most. Any which require larger pots should have it now. Weak stimulants may be given to those plants which are not repotted.

Strawberries for Forcing.

All plants intended for early forcing will now be in the fruiting-pots, which should not be less than 6 inches in diameter. Pot very firmly and keep the crowns above the soil. Only one crown should be left on each plant. Stand on coal-ash beds, or on an impervious bottom, allowing each plant room enough to develop its foliage. Keep the plants free from runners and give water when necessary. A little frost will not hurt them, but sharp frost will break the pots; therefore the pots should be plunged, before worse weather sets in, in cold-frames, from whence they can be taken in batches as required to the forcing-house.

Vineries.

Early Grapes which have been hanging some time may be cut and bottled if there is a Grape-room. They will keep fresher and retain their black colour longer in a dark room. As soon as the Grapes are cut the surplus wood can be taken out, and full ventilation given; but the inside borders must not be permitted to get dust dry. Late Vines, where the Grapes are colouring, must not be permitted to develop too much lateral growth. A little during the colouring is very well, but too much will disorganise root action and rob the Grapes.

Window Gardening.

Now is the time to take cuttings of "Geraniums," Fuchsias, and other plants, and hard-wooded plants will strike now if at all. A cold-frame in a shady situation is the place to strike Heaths and New Holland plants generally. They require early attention in wiping bell-glasses, &c. Give liquid-manure to window-boxes. Cactus and succulent plants generally are best outside ripening now.

Outdoor Garden.

Some of the early sown annuals are past their best, and had better be removed, and the places may be filled with Wallflowers, Canterbury Bells, or clumps of Daffodils may be planted. This is the best season to plant Lilium candidum. If the soil is heavy, work in some gritty material, mixed charred refuse, or decayed vegetable matter. But where these Lilies are established and doing well do not move them if it can be avoided. Wherever Lilies or any other bulbs are planted mark the site in some way, so that there will be no disturbance again. I prefer a stout wood label, with the name or a number clearly written on the upper end. Small labels are continually being lost. Continue to take cuttings of all kinds of decorative plants. Sandy loam, slightly enriched with leaf-mould, is the best compost for striking most kinds of cuttings now. A little sand on the surface will check any tendency to damp should the weather change to rain or fog. Early budded Roses may require the ties to be loosened if the bark is swelling rapidly. Gather choice flower seeds before they are scattered, and place in saucers to ripen in a cool, airy room.

Fruit Garden.

Late Grapes are, or should be, colouring now. If not ripened by the end of September the quality will not be so good, and they will not keep so well. They ripen best when not hurried and freely ventilated during day, and enough night air left on to maintain a free circulation. Moisture should not be withheld till the berries are pretty well finished. If the Grapes are expected to keep long, mulch the borders inside with long litter to check evaporation and keep down dust. Young pot-Vines intended for forcing next year will now have finished growth, and wood getting brown. When the wood is thoroughly firm, take outside and nail to wall in a sunny position. The warmth of the wall will complete the ripening of the wood. Do not let the roots suffer for want of water. The summer pruning will now for the most part be finished. The weather has been too dry for much growth to be made. Where the Pears have not been thinned or the trees watered the fruit will be small. There are heavy crops of Pears about, but Plums and Apples are, with a few exceptions, thin. Young trees of Victoria, Rivers' Prolific, and Monarch Plums are in some gardens doing well, showing the wisdom of working on young trees, in Plums especially.

Vegetable Garden.

Weeds, if permitted to remain for only a short time, will run to seed. Keep the hoe going for the double purpose of killing weeds when small and keeping a loose surface among the plants. Deeper culture, more manure, and a loose surface would solve all difficulties in a dry time. Salt is a good thing to use on porous soils. May be used any time both in winter and summer in small quantities. I have sown it among the crops in spring during a spell of bright weather. It melts gradually and sinks into the ground. In wet weather it is, to a large extent, carried away to the drains. The season for sowing and planting is fast ebbing away. Cauliflowers, Onions, Spinach, Turnips, Lettuce, Endive, Radishes, can be sown. Finish planting Winter Greens. Anything planted now will not attain full size, but they will come in useful. Use Bordeaux-mixture on late Potatoes if there is any reason to expect the disease; but this is of more value as a preventive than a cure. Potatoes which have ripened sufficiently to keep will be better up before the autumn rains set in. Cut herbs for drying, including Parsley. It is no use sowing Peas with the view of getting a crop, but if there are surplus seeds they may be sown in beds to supply green tops for flavouring soups, etc. If it is necessary to keep up a succession of French Beans, sow in pots where warmth can be given later on. Thin the growth of Tomatoes outside and stop all leaders. Fruit set now will be useful only for pickling.

E. Hobday.

* *In cold or northern districts the operations referred under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 23rd.—Earthed up more Celery. Planted out Lettuce and Endive. Tied up to blanch early plants of both. Sowed Bath Cos Lettuce and Green Curled Endive. Pulled up exhausted Cucumbers in house. Cleared out everything. Cleaned paint and whitewashed walls. We generally burn some sulphur in the house during the cleaning operations, so as to start again as free from insect pests and mildew as possible. Put in cuttings of Hollyhocks in frame. Sowed spores of Ferns in propagating-case.

August 24th.—Finished potting Strawberries for forcing. Sir Charles Napier is grown largely for late forcing and does well with us. British Queen is also grown and Sir W. Paxton. Gathered vegetables of various kinds, including Cauliflowers, French Beans, Capsicums, Gherkins, etc., for pickling. Sowed more Onions and Spinach for standing the winter. Sowed Red Stone Turnip after Potatoes, first giving the land a dressing of superphosphate and hoeing it in.

August 25th.—Made a last sowing of Cauliflowers. Put in more cuttings of various kinds of bedding "Geraniums." Looked over Dahlias to thin growth and buds. The attention now given to Chrysanthemums takes up much time. The buds of the Japanese varieties have for the most part been selected. Incurves are just coming on, and buds will be taken through the first half of September. The plants have been top-dressed, and are receiving occasional doses of liquid-manure.

August 26th.—Potted Freesias and Roman Hyacinths for early blooming. Potted a lot of Lilium candidum for blooming under glass. I always think it is a pity to force this beautiful Lily, as the flowers are fine outside, but they are good for cutting, and we want to prolong the season. Top-dressed Cucumbers in frames, as we want to carry these on as long as possible. Sowed more Mignonette in pots for winter blooming, 5-inch and 6 inch pots being used. Repotted and cut down Pelargoniums. Layered more Carnations.

August 27th.—Put in a lot of cuttings of choice hardy Evergreen shrubs in frames in shady position. We always have success with cuttings planted now, covered with glass in cool border, kept moist. Sowed annuals for spring blooming in the beds. Put in cuttings of Pansies in frames in shade. Pricked off seedling hardy plants of various kinds, and put in cuttings of choice Antirrhinums and Pentstemons. These also have been put under glass and will remain there during winter.

August 28th. — Shifted Bouvardias, Fibrous-rooted Begonias, and other winter-blooming plants into blooming pots. Will be kept fairly close under glass till roots are established, and later on moved to a house where fire-heat is used. Poinsettias and Euphorbias are still in pots. Most of them are in blooming pots, but a few late plants are still in 60's; but we shall not want all the plants in bloom at one time. Sowed Lockie's Perfection Cucumber. We always keep young plants in stock through the winter to fill vacancies.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1377—**Flowers by the sea.**—Will anyone recommend hardy flowers which could be sown now for next year for small garden on the cliff, east coast? The soil is sandy. Flowers grow very well. We have small Perennial Sunflowers and Pinks and Japanese Roses, all of which do well. We want especially flowers which would bloom in August and September.—A. M. K. F., *Lowestoft.*

1378—**Wasps in 1897.**—It would be interesting to know the general experience of this summer as to Wasps. In June we took two very small nests, both under cover—one in a heap of loam in a barn, the other in a Melon-frame. Since then we have not seen a single wasp. Have the queens and nests been destroyed by the May frost and the deluge of the storm which wrecked Essex?—A. G. Campbell, *Bracknell.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1379—**Vegetables for exhibition** (*Exhibitor*).—Potatoes, Onions, Carrots, Cauliflowers, Peas, Runner Beans, Tomatoes, and Vegetable Marrows. If all of these are not available, add good close and green Cabbage, Celery, Beet or Leeks.

1380—**Begonia-leaves unsatisfactory** (*R. F. Todhunter*).—Evidently scorched by the sun. We can trace no disease. The leaves look as if water had got on them, then the sun came out strongly and scorched them. A light shade is always necessary in Begonia culture.

1381—**Unsatisfactory Tomatoes** (*H. Richardson*).—Your Tomatoes are not diseased at present. It is simply the result of scalding from sun-heat. Probably you have syringed too late in the day, or neglected to give air sufficiently early and free during a rather foggy morning.

1382—**Jacobinia** (*P. A. Ovens*).—Yes, your plant is a Jacobinia, sometimes called Justicia. You can root cuttings of young growth under a handglass in spring by using a light and sandy compost, and a temperature of 60 degs. to 70 degs. It will not root in an ordinary greenhouse at this time of year.

1383—**Winter Cherry flowers falling** (*Wilts*).—There does not appear to be anything the matter with the flower of Solanum you send, and we can only suggest that you do not water in sufficient quantity at an application. These are thirsty subjects, and soon fail if dry at the root, whereas the "Geranium" will thrive with very little water.

1384—**Lily of the Valley not flowering** (*J. Dallimer*).—Lift and transplant the best crowns to a fresh piece of ground. They have exhausted their present soil. In some cases Lilies of the Valley do well for scores of years, but this is where the soil is moist and deep. Perhaps yours are near a hungry-feeding hedge, or beneath trees, and the roots have encroached.

1385—**Asparagus "Fern"** (*A Constant French Reader*).—The specimen appears to us to be a very young seedling of the common garden Asparagus, and not the graceful African species so often designated a Fern. Pot on one or two of the best and see how they develop. Use an ordinary compost, and stand outside for a few weeks. The tiny specimens were much shrivelled.

1386—**Forget-me-nots and Tufted Pansies** (*Riversdale*).—These would be more suitable beneath standard Roses than dwarfs, which generally break so close to the ground as to spoil all effect. Sow the Forget-me-not at once; it should have been done a little earlier. Prick off from boxes into a prepared border, and plant out as early in the year as you can if not sufficiently forward for late autumn planting.

1387—**Plants for vinery** (*First Start*).—If your Vines are growing, there are very few subjects that will thrive beneath them at this stage. Should the wall be free and receiving a fair amount of light, you could scarcely do better than grow such climbing Roses as William Allan Richardson and Mme. Alfred Carrière. The Blue African Lily (Agapanthus) would grow fairly well, and later on you could have Deutzia gracilis, Azaleas of the Ghent and Mollis section, with Christmas Roses and "Geraniums," while in early spring there are a vast number of plants suitable; but while the Vines are in full growth you cannot have plants below.

1388—**"Duett" tree-leaves shrivelling** (*S. Tuckey*).—We presume you mean a Deutzia gracilis (a pretty white flower); if so, it would probably be ripening off now after being forced. It would not be of any use to apply manures while not in growth. Remove it to the greenhouse end of September, do not prune, and stand it under the bench until flower-buds show. Frequent syringing is a great help.

1389—**Carnations** (*A. Dougland*).—We cannot undertake to name varieties of florist flowers, such as Carnations, Pyrethrums, etc. Yours is probably an unnamed seedling, and, but for its perfume, is almost useless. As long as the clumps flower and grow so well without deterioration of size we should leave them alone. If you want to increase, lose no time in following the hints given and illustrated in our issue for July 24th.

1390—**Diseased Grapes** (*B. Horner*).—The Vines are suffering from a bad attack of mildew, caused by mismanagement somehow, most likely by the admission of too much air at times causing a direct draught, and by a too low night temperature, coupled with too much atmospheric moisture. Keep the house warmer, and sprinkle sulphur over the affected parts, cutting off and burning the useless bunches of a similar character to that sent.

1391—**Yarrow, etc., on lawns** (*L. C.*).—Your lawn must be very wet to grow this little weed so strongly during a very dry season. There is nothing you can kill it with and not be doing harm to the Grass. We would advise you to pull out as much as possible, when by perseverance you will reduce it to a few clumps. Would it not be cheaper and better in the end to re-make and well drain your lawn, thoroughly cleansing the ground and sowing good lawn Grass? So many use an inferior turf and start badly.

1392—**Sword-plant** (*Tam*).—Yours is an Iris. There are so many beautiful hardy kinds in cottage gardens that we cannot possibly name yours from a leaf sent. They are easily increased by division, either of the fleshy rhizomes or bulbous offsets. This is the best plan, and where you see one you admire why not try and arrange for a piece late next autumn or early in spring, directly new growth commences. Seeds may be obtained, but much your best plan would be to procure young plants from a nurseryman or some friend.

1393—**Weed on lawn** (*West Point*).—Yours is not "Carnation grass." That is a term used for the foliage of Carnations. Your weed is one of the several trailing Grasses called by several local names. It grows mostly upon wet and somewhat poor soils, and is generally spoken of as Water Grass. We fear there is no remedy better than perseverance with raking and uprooting the chief patches by hand. Mend your lawn well with wood-ashes, and sow a little White Dutch Clover over the patches as soon as we get rains.

1394—**Unsatisfactory lawns** (*H. C. W.*).—It has been a very trying season for newly-made lawns. We would advise you to mix up some light and rather rich compost, dress the lawn with this at once, and sow some more lawn Grass-seed end of September, as nearly as possible after a shower. Add a couple of ounces of White Dutch Clover to a pound of Grass-seed; mix this with some soil separately and sow, or it will not be possible to apply evenly, the two seeds being so distinct. Wood-ashes are an excellent dressing for lawns, but not household ashes.

1395—**Moving evergreens** (*Bunny*).—So much depends upon the condition of the plants and character of the season. It is much too drying and hot to move the Laurustinus now, and unless we get showers, will be too dry in September or October. No set date can be given for evergreens. Some move better when dormant, and others—the Holly, for example—can be moved safest when upon the point of new growth in April or May. Araucarias, Rhododendrons, and a few more can scarcely be moved at the wrong time so long as they are properly watered.

1396—**Humea elegans diseased** (*Constant Subscriber*).—Humea elegans is by no means an easy plant to grow in the open ground. You do not say how you have treated yours as regards water. We think you have kept them too wet and in too stiff a soil. They need a well-drained compost of loam, leaf-soil, and decayed-manure in equal parts, with some coarse sand or broken charcoal. If you planted out too early, the cold soil would account for their gradual failure. They should not be transferred to the open before June, and the early part of this month was most trying.

1397—**Strawberries in greenhouse** (*S. Fletcher*).—Strawberries in pots do not need greenhouse protection during the winter. Plunge them in leaves or ashes out-of-doors, at the foot of a south wall or hedge for instance, just to afford some slight protection to the roots in addition to the aid obtained by the plunging. Bring the pots into the greenhouse as required in March. Viscountess Hericart du Thury and Royal Sovereign are good varieties to grow. When the fruit is gathered put the plants out in rows 2 feet wide. They will succeed for three years at least.

1398—**Cucumber-plants unsatisfactory** (*Malton*).—Your leaves are much infested with red-spider, a minute grey-coloured insect feeding upon the lower side of leaves. They are simply smothered with this pest, and from the brown spots upon the leaves it is evident your plants have been burnt at some time. A dry atmosphere conduces to red-spider. Cut away the worst leaves and keep up a moister air in the frame. A slight shade for a time will allow you a freer use of a moist atmosphere. Let the foliage become dry each third evening for a fortnight and give a slight fumigation.

1399—**Plants for narrow border** (*H. S.*).—A selection of rock plants appears to be the most suitable for your border a foot wide. The ledge of Elm would to some extent assist and lend additional beauty to plants of this character. Such plants as the Aubrietia (Purple Rock Cress), Alyssum (Madwort), Arabis (Rock Cress), Armeria (Thrift), some of the dwarf forms of Campanula (Bell-flower), Centaurea (Centaury), Dianthus (Pinks), Erigeron (Flea Bane), Hellebores (Christmas Rose), Iberis (Candy-tuft), Papaver (Poppy), Saxifraga (Rockfoil), Sedum (Stonecrop), Veronica (Speedwell), and Pansies. With the above you should have ample to keep the border bright and interesting throughout the year. This list may be supplemented with the large list of spring-flowering bulbous plants.

1400—**Christmas Rose plants** (*E. M. A.*).—Only an ample supply of weak liquid-manure until the leaf shows signs of drying off.

1401—**Petunias** (*Driffield*).—It is the nature of these plants to be sticky, and you must avoid any dust or dirt coming into contact with their leaves. You cannot stop the foliage from being sticky.

1402—**Growing Carnations** (*De Kaap*).—Sea-sand will not do, nor will soot and lime when used in conjunction. Burn a little of your stiff soil, and add this to decayed vegetable-refuse and a little coarse sand. Mix this with some of the stiffer soil, and if you use a little soot alone, we think you will succeed.

1403—**Hydrangea cuttings** (*Driffield*).—Select pieces of partly ripened growth, those from side shoots and not too vigorous in growth are best. Cut off just below a pair of leaves, trim these off, and insert the cutting in a sandy loam, keeping it close for a time and partially shaded. The cuttings should be about 4 inches long, and they may be taken at any time now.

1404—**Greenhouse plants diseased** (*Mina*).—There is no pest whatever, nor disease upon the foliage sent. It is simply a case of their being too dry at the roots, perhaps only upon one occasion. "Geraniums" always lose a few of their matured leaves in the manner yours have done. Water a little more freely, and feed with liquid-manures now that the plants are in bloom.

1405—**Ivy-leaved Pelargonium, etc.** (*E. M. A.*).—You can easily root cuttings now, placing three or more in a pot. These can be grown on next spring, and will once more supply you with large plants for bedding out For methods of propagation see our issues for July 24th, and August 7th. You might also cut back the old stools slightly, and pot these up closely, keeping them rather dry and dormant during winter.

1406—**Transplanting Roses** (*Coonac*).—As your Roses are recently planted they would lift fairly well. But it is really too early. You will not do much in trying to keep a ball of soil upon such roots. Lift carefully and plant again at once. If very dry, lay them in by the roots on a shady border, and thoroughly water, transplanting again in November. We would advise this plan with all carrying much young growth. You can move the Wall-flowers and Stocks with impunity, provided you water well before lifting and after planting again.

1407—**Treatment of Bouvardias** (*E. M.*).—If your Bouvardias are in full bloom now they will scarcely be able to give a good crop again by early winter. We would not plant them out in your case, but stand outside for a month or so after bloom is over, cut back rather closely, shake out the old soil and repot, afterwards placing into a moist greenhouse temperature, when they should grow and bloom early in the spring. The ripened cuttings are of no use, but you can propagate pieces of root, as mentioned in our issue for March 13th, 1897, where the propagation of this beautiful greenhouse flower is illustrated.

1408—**Cucumber-leaves decaying** (*T. Hulks*).—The Cucumber-plants are affected by a disease which takes the form of tubercles on the roots, caused in the first place by very minute worms. The tubercles at first are small, enlarging with age. Each tubercle contains a small cyst, and each cyst contains a number of minute vesicles. In these are to be found the small worms. The disease causes brown spots to appear on the leaves, and interferes with the general health of the plant. Pull the plants up and burn them. Changing the soil for another batch of plants procured from a distance is the only remedy.

1409—**Unsatisfactory lawn** (*A Lancashire Lad*).—We are only surprised that your lawn contains a scrap of suitable Grass. What extreme treatment! First "starved," then, in course of a few months, more or less manured no fewer than nineteen times, and several of these containing chemicals directly opposite in character. We would advise you to take off the surface entirely, dress with some good loam, and sow some lawn Grass-seed and White Dutch Clover. Any florist can supply a suitable mixture. Do not manure in such an extreme manner; it will need none for some time, and you will find it better than trying to mend up patches and destroy such bad weeds.

1410—**Best flowers for exhibition next year** (*P. V. W.*).—You do not say at what date next year you want to exhibit. There is nothing suitable for present sowing; but in February you might sow Begonias, Gloxinias, and a few more. Purchase a few seedlings of Chinese Primula, Cineraria, Calceolarias, and other spring bloomers, growing these on according to instructions given in these pages. Bulbs might also be potted soon, and would come in for an early spring and late winter display. Early in the year purchase a few crowns of Begonias, young plants of Fuchsias, Fancy or Regal Pelargoniums, etc., and grow these on for an early display following the Cinerarias and Primulas.

1411—**Asperula, etc.** (*H. D. Stratton*).—The Woodruff (Asperula) would be too high and vigorous for Scillas, but for Lilies, perennials, and beneath standard Roses it would do well under the conditions we previously named. Saxifraga hypnoides is very pretty. It is green all summer and winter, and also bears quantities of tiny white blossoms. Cannas last a short time individually, but are borne in such delightful succession as to keep the spike showy for a long time. Pick off decayed flowers at once, and avoid the ripening of seeds. Our selections of Roses for various localities will be as complete as possible. We fully realise the necessity of giving those suited for various purposes, positions, and soils.

1412—**Forcing early Rhubarb.**—Mrs. New wishes to know how early Rhubarb is forced? What is a Rhubarb-house?

*** *It can generally be had at any time after Christmas, but Rhubarb forces best after the crown has been exposed to a little frost; this appearing to complete the maturation of the crown, after which the new growth responds rapidly to any warmth. It is more often forced in deep pits or frames than houses, and any contrivance in which a heat of 55 degs. to 60 degs. can be attained will be ample. Deep chimney pots are much better than the usual pots made specially for Seakale and Rhubarb—the sticks can grow longer and come on more quickly. It is immaterial how the heat is obtained, but that from manure and decaying leaves seems the most suitable. They must have plenty of water directly growth commences.*

1413—**Sweet Sultan.**—Will you kindly tell an old subscriber of Gardening if it is possible to keep Sweet Sultans for next year, the seed being sown too late to bloom this year?—Mrs. Brook.

*** *Far better sow fresh seed early next season. If sown at any time in June or early July they should flower in the autumn, and yours may bloom yet.*

1414—**"Geraniums" in winter.**—Will you kindly tell me through Gardening if a cellar under the dining-room is too cold and damp to keep "Geraninum" cuttings during the winter, as I have neither a greenhouse or out-door frame?—Anxious Beginner.

*** *If free from frost and not damp—but, of course, we cannot say whether such is the case, not having seen it—the "Geraniums" should do well. They would also keep well in a window.*

1415—**Nailing Wistaria.**—Can you give any advice on this point? I find a marked tendency in the Wistaria sinensis to die off where it is nailed to the wall, in spite of every precaution, and to throw out new shoots further back.—Loughborough.

*** *The swaying of long growths often injures the shoot near the tie or fastening, and the least injury results in decay during the next season. Nailing too tightly, or doing the work in a rough manner will not suit this creeper. Have the securing bands wider, and place them closer together until a strong shoot is secured.*

1416—**Edging plants.**—I have to make border edgings of Thrift, Arabis, and Ivy. Could you tell me the best time to propagate these respectively, and which is the proper sort of Ivy to use for an edging?—Stanhope.

*** *Propagate Thrift by dibbling in small pieces during September, placing them where they are to stand, and the pieces about 2 inches to 3 inches apart. Arabis may be obtained from seeds sown in March or August, and by cuttings rooted under a hand-glass now. Ivy may be rooted at any time; start with small pieces now, and transplant same when making the edging. There are several suitable varieties; the common Irish Ivy is very suitable. We would prefer the Mossy Rockfoil (Saxifraga hypnoides) to Thrift, which is very impoverishing to the soil. This is pretty all though the year, and as easily propagated as the Thrift. See* Gardening, *July 31, p. 313, 1897, for article about edgings. It is freely illustrated.*

1417—**Keeping "Geraniums," etc., in winter.**—How can I save my "Geraniums" and cuttings through winter, being without greenhouse?—A. B. C.

*** *Many succeed in saving these in the windows of living rooms, and by storing in a light attic where frost can be kept out with a lamp. They only need keeping rather dry and free from frost. Put into a sandy soil and try this plan. One cannot do much in saving plants without a greenhouse, but we often see cottagers keeping Petunias, Pelargoniums, Fuchsias, etc., year after year in their windows.*

1418—**Clubbing in Cabbages, etc.**—Nearly all the Brussels Sprouts and Cabbages in my garden have got "clubbed" at the roots, and are, therefore, spoilt. I believe I have read somewhere that to avoid this trouble in future it is necessary to specially treat the ground before planting again. Please state in your paper if this is so, and also what to do?—Club.

*** *Clubbing is caused by an insect, and none of the Brassica tribe should be planted upon ground so affected until it has been well dressed with lime and worked about.*

1419—**Removing plants.**—I am leaving this house at the end of this month, and wish to remove some Rose-trees, Carnations, Gladiolus, Dahlias, and some perennials. Can I safely do so at this time of year, and how had they better be treated? My new garden is in South Devon.—M. A. W.

*** *If the Roses are Hybrid Perpetuals, and fairly ripe, they might be lifted and planted at once, taking care to well water. It will be necessary to have a ball of soil to the Carnations, but Dahlias will be in too full growth, unless you be satisfied with just keeping the tubers alive for next season's use. It is difficult and almost impossible to lift such subjects by August, and would it not be better to make some arrangement with your landlord or the incoming tenant and procure more for the new house?*

1420—**Myrtles not flowering.**—I have two Myrtles in large pots in the centre of my garden. They grow very well, but I should be very much obliged to you to tell me how to treat them to make them flower?—A Constant French Reader.

*** *Your plants do not get sufficiently ripened. Let them be kept a little drier at the roots during winter, and they should flower the following summer.*

1421—**Cesspool matter.**—The whole of the drainage of the house runs into a cesspool, which is regularly pumped out. Would the liquid that is pumped up be a good liquid-manure for watering Roses, Dahlias, etc, and if so, how often should it be used?—M. F. W.

*** *You could scarcely find a better manure for Roses, Dahlias, fruit-trees, and other strong-growing subjects; but as to how often to apply that depends entirely upon drought, how strong, and in what quantities. A thorough soaking of a weak solution once a fortnight would not be far wrong; but you can use it stronger among fruit-trees in winter.*

1422—**Arum Lily.**—Following the advice in your valuable paper some time ago I put my Arum Lily in the open ground in the border. The leaves have not died down, and it is growing again. What have I to do with it? Will it interfere with the flowering of it? I intend to take it in the house in September.—A Constant French Reader.

*** *Lift and pot the Arum now, plunging it again directly after potting. Its present growth will not interfere with bloom, but do not afford a great deal of water until September.*

1423—**Propagating Perilla.**—Would you kindly inform me if Perilla can be propagated the same as "Geraniums?" Or is it an easier and better plan to sow seed in March? It has been used as a background in border, "Geraniums" in front.—Perilla.

*** *These are annuals, and so easily raised from seed that any other method is simply waste of time and room.*

1424—**Leafy "Geraniums."**—What is the reason of "Geraniums" having so much leaf and so few flowers?—E. T.

*** *Too rich a compost and a free root run; also, if in shady position, they will often produce growth at the expense of blossom.*

1425—**Aspidistra.**—I have a very large Aspidistra. When is the best time to divide it, and what is the best soil for it to grow in?—E. T.

*** *Divide in May, and give a compost of leaf-soil and turfy-loam, adding a few pieces of sandstone and broken charcoal.*

1426—**Cutting down Pæonies.**—I shall be obliged if you will inform me whether Pæonies should be cut down in November, or left to die down?—Caldwell.

*** *Leave them to die down naturally; but if too unsightly, cut off when about half ripened down.*

1427—**Deutzias.**—When is the best time to remove Deutzias to the greenhouse for spring flowering?—A Constant French Reader.

*** *Stand them under the bench and well syringe the wood until buds appear. Remove to the house any time from December onwards.*

1428—**Preparing ground for Potatoes.**—I wish to break up a piece of a Grass field this autumn to grow Potatoes in. The field has been sometimes used for hay, but has had very little manure put on it, and the Grass is poor. The soil is light, dry, and stony, subsoil gravel. How should the ground be treated this autumn to prepare it for Potatoes being planted in the spring?—M. R.

*** *Simply dig it over as deeply as you can without trenching, being careful to well bury the top sod of Grass. This will decay, and if you add a little manure when planting the Potatoes, they will do well enough upon this and the root fibres contained in the turf.*

1429—**Lilium candidum not flowering well second year.**—Two years ago I planted several clumps of Lilium candidum, which flowered very well the first year, but which this year have not made any flower stalks at all. In digging up the bulbs, I find them apparently quite sound and healthy, but the roots seem in poor condition, though the root "flake" is sound and hard. The same thing is noticeable with the White Martagon Lilies, which, like the candidums, were planted in good loam, and leaf-soil, and sand. Can you tell me the cause of this? Will the bulbs flower next year if left alone? Is there any remedy?—Nemo.

*** *The flowers produced upon your bulbs the first year were already stored up. You have not succeeded in getting them sufficiently ripened to bloom the following season. Selected bulbs of Lilies very seldom thrive so well the second as during the first season after planting. Your compost is so suitable that we should leave them another year. The outside "flakes" are always brown.*

1430—**National Society of Gardeners.**—Can anyone tell me through Gardening if there is any such society or club as the National Society of Gardeners? If so, where is its chief office, and where must I apply to for particulars?—G. F. B. Enquirer.

*** *We believe there is no such society. Perhaps you mean the Royal Horticultural Society (117, Victoria-street, London)? Perhaps some of our readers can help our correspondent.*

1431—**Strawberry for market.**—I want to plant a bed of Strawberries for market, soil heavy. Please will you tell me which is the best kind, and how to treat it?—T. P. Holderness.

*** *Sir Joseph Paxton is the best market Strawberry. Not only is it a free cropper, but the fruit being firm it travels well. Deeply dig and well manure the ground at once. Procure strong, well-rooted runners at the end of the present month. Plant them in rows 2 feet wide, the plants 18 inches apart. Do not allow them to bear fruit the first year, but induce them to grow strongly by pinching off all flower-stems. Mulch the surface 2 inches thick with half-decayed farmyard-manure in February.*

1432—**Treatment of Black Currant-bushes.**—On a wall 7 feet high, with a north aspect, a number of Black Currant-bushes were planted. They have now grown above the wall, and most of the fruit was at the top. I want to get them down to a convenient height and into the shade. Please say how they should be pruned and at what time, so that fruit may continue?—Jubilee.

*** *Black Currant-trees produce the finest fruit upon the young wood, hence the trees giving the best results above the wall. Really the best way to treat the trees would be to cut them down within 1 foot of the soil, thus inducing them to throw up vigorous shoots from the base, and provide fine fruit for a number of years. If this is too drastic a plan, cut a few of the weakest shoots down every year, gradually bringing them into bearing condition. Any time before February 1st is a good time to prune.*

1433—**Lilies after flowering.**—Will you please inform me what to do with my Lilies that have done blooming? They have bloomed in pots.—H. Matthews.

*** *You do not say what Lilies, and so your query is far too wide a one for us to answer definitely. As a rule, they need keeping rather dry until thoroughly ripened, after which they are stored in a cool and dry place until repotted.*

1434—**Narcissi not flowering.**—Can you tell me why my Narcissi do not flower? The bulbs have been in the ground a long time. They are in a good soil, facing south, and get a great deal of sun. The buds form well, but shrivel and turn brown, and do not expand. The plants seem quite healthy?—E. B.

*** *Lift the bulbs and replant into a less rich soil with an eastern aspect.*

1435—**Removing shrubs.**—"Novice" wants to know when is the best time to remove old shrubs—Rhododendron, Azalea, Andromeda—and form a bed on a lawn, and cover the same with turf?

*** *From end of September to the end of November, selecting the most suitable weather—i.e., a showery time so far as possible. It can also be done in February.*

1436—**Wintering young own-root Roses** (*An Enquirer*).—There should be no difficulty in keeping your Roses during the period you state. We imagine you keep them too dark and coddled during mid-winter, and then give full exposure while sharp frosts are still with us. Plunge the small pots and keep them a little drier, and do not cover with tarpaulin so much. It is also very probable that the varieties which fail are those of tender nature. Our experience is that young Roses upon their own roots are by no means so full of vitality in the infant stage as those worked upon a foster root which is naturally in a hardier and more established condition. Some of the failures, too, may be of cuttings carrying callus, but not sufficient root to sustain them when the call for more sap arrives in early spring.

1437—**Begonia-leaves, etc., unhealthy** (*S. Fletcher*).—It appears to us that you have given your plants far too strong a dose of liquid-manure, or else kept them very dry at the roots. It is also evident that the atmosphere has been excessively hot and parching at some time, although it may be for a few minutes only. It cannot be from the factory, if the other subjects are unaffected, and as they would take stronger manures and are probably outdoors, we think the above causes likely to be correct. You can water with soap-suds in moderation. Household slops and suds are dangerous when one does not know of what they consist. So many various chemicals are likely to be present, and much harm is often done. Yes; pig-manure is good for a light soil and rank-growing subjects; but it is too powerful for any weak or slow growers.

1438—**Peat-Moss manure.**—Having a quantity of the above manure not sufficiently rotten for garden use, what can I add to it to make it suitable?—A. W.

*** *Throw the manure into a heap, wetting it to encourage it to ferment and evaporate the obnoxious gases which makes this manure objectionable. Decayed vegetable-refuse and road-scrapings would aid the early use of the manure if you cannot wait a couple of weeks for it to become properly fit for use.*

1439—**A second crop of Peas.**—I shall feel obliged if you will kindly tell me through the medium of Gardening whether it is usual for Peas to give a second crop? I sowed some of McLaren's Wonderful Marrow Peas on 26th March, and had a plentiful supply of sweet, tender Peas the end of June and beginning of July, and on the stalks becoming yellow and withered, I was about to pull them all up, but noticing that some of them were throwing out fresh growths with blossom, I let them remain to see what happened, with the result that on 7th August I gathered a large dish of delicious Peas from a short row. There was every appearance of more blossom and fruit, but my garden being very small, I could not afford the space, and had to pull them up to make room for autumn sowings.—E. S. G. Campbell.

*** *It is unusual for Peas to give a second crop. In this case we presume the haulm ripened prematurely, owing to drought, and when rain again fell the plants started anew.*

1440—**Pruning Plums.**—What is the best time to prune Plum-trees? Mine appear to have been neglected and have borne little or no fruit this year. They are infested with a small bluish-green fly. Is this the cause of their non-bearing?—T.

*** *Generally the Plum crop is a thin one this season, caused mainly by frost experienced while the trees were in flower. The bluish insect is an aphide; most likely green-fly. Syringe the trees vigorously with strong soap-suds, washing them the next day with clean water to remove any sediment from the suds, or wash them with the following: Two pounds soft soap dissolved, and ½ lb. Tobacco-paper, thoroughly soaked, will suffice for 50 gallons tepid water. Prune the trees in November.*

1441—**Seedling Fuchsias.**—A short time ago I bought some seedling Fuchsias, among them one Lord Beaconsfield, a small plant with scarcely any root. I have cut two blooms from it. Will you kindly say in next number the cause of it blooming so soon? Also the name of three or four of the finest Fuchsias in the market?—J. L., *Trefriw.*

*** *Fuchsias when very young often produce flowers, and several make a practice of growing them as annuals, the uncertainty of what will be produced being an inducement, as well as the number that can be raised in a short time by this method. We think Abundance, Walter Long, Mrs. Marshall, Duchess of Albany, Dr. Sankey, and Elizabeth Marshall six very useful varieties.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Caldwell.*—We cannot name your Clematis from the portion of leaf sent. It probably belongs to C. indivisa lobata, and in that case your position is not warm enough. If the plant is so bare it will be well to cut it down when out of leaf, or plant specimens of C. montana and C. Flammula instead.——*J. B. M.*—The flower had unfortunately withered. Roses want careful packing to arrive fresh.——*A. C. Tribble.*—Gesnera tubiflora. ——*Saltire.*—You should number specimens in future. The deep orange with dark centre is a variety of Coreopsis or Calliopsis. The pale primrose-yellow is a variety of Phlox Drummondi.——*J. C.*—Delphinium Lycoctonum.——*D. E.*—1, Bignonia radicans; 2, Sedum carneum variegatum; 3, Ophiopogon Jaburan variegatum; 4, Anthericum graminifolium.——*E. H.*—Apparently a Euphorbia (weed), but kindly send in fruit or flower.—— *E. Judge.*—Epipactis latifolia.—*J. D. F., Rotherfield.*—Datura Stramonium (annual).——*X. Y. Z.*—1, Asplenium bulbiferum; 2, Phlebodium aureum; 3, Trachelium cœruleum; 4, Pteris tremula.—*Major.*—The name of your Begonia is B. semperflorens, which differs considerably from B. Worthiana. The latter has larger, reddish drooping flowers. We do not know the plant you mention. Can you give us the Latin name?——*C. K. Hibberd.*—1, Comtesse de Nadaillac; 2, Mrs. Bosanquet (?); 3, Unrecognised and shattered; 4, Madame Cusin; 5, Rubens; 6, Duke of Teck. —— *Constant Reader.*—1, Kalosanthes coccinea, sometimes called Crassula. It flowers annually about July, and needs an ordinary greenhouse treatment. Should make as much growth as possible before midsummer, after which a sunny and hot outside border is suitable when the plants are plunged in sand. Very little water, a rich compost of turfy loam, leaf-soil, sand, and a very little well-decayed manure. Propagate by cuttings now. 2, Francoa ramosa, the Maiden's Wreath flower. Blooms in July and August, can be readily increased from seeds sown in autumn or early spring, and enjoys a cool bottom in an almost unheated greenhouse. We wish others would pack so well.——*T. W. Smith.*—Aspidistra lurida.——*Sigma.*—The name of your Rose is Celine Forestier, a Noisette. Do not prune it hard, and you will find it very free flowering. By no means prune back these or the Gloire de Dijons too closely. Your plant wants thoroughly syringing a few times.——*T. Clark.*—Please send another flower, and give us a little idea of the growth of your plant. It is not Alexandrine Bruel, which is an almost white seedling from Gloire de Dijon. See a note in a recent issue upon summer pruning of Roses.

Catalogue received.—*Bulbs, Fruits, and Strawberries.*—Messrs. J. Veitch and Sons, King's-road, Chelsea, S.W.

LAW.

Compensation to outgoing tenant of garden.—Six years ago the lease of a garden of five acres and of a field was transferred to me with the consent of the trustees, and I paid the outgoing tenant a valuation for crops, etc. Should no tenant be coming in at tha expiration of my tenancy can I claim compensation for the whole of my crops from the landlord? And if not for the whole, for what part can I claim? There are some greenhouses, part valuation for the contents of which is specified.—Anxious.

*** You say that the lease was transferred to you, and if so you hold under the terms and conditions of the lease, which it may be presumed is for a definite term, at the expiration of which the tenancy expires without any notice from either side. You say you paid the outgoer a valuation on entry; if that valuation was in accordance with his lease you will be entitled under the lease to the same kind of valuation on quitting; but if you came to a private arrangement with the outgoer and paid him for matters and things in respect of which he could have claimed no compensation if he had quitted on the expiration of his tenancy, such arrangement will not be binding upon the landlord or your successor. As a matter of fact, it is always the landlord who is liable to an outgoing tenant for the valuation to the latter, and although by arrangement between the parties the incomer often takes the place of the landlord in this respect and pays the valuation money, this does not alter the legal position of the landlord. The result of the foregoing considerations is that, leaving out of sight the Market Gardeners' Compensation Act, your claim to a valuation will be decided by reference to the lease which was transferred to you, so far as it is not expressly silent upon these points, and if it is silent it may be necessary to refer to the valuation (if any) paid by your predecessor when he entered. But the Market Gardeners' Compensation Act, 1895, clearly applies to your tenancy, and so you may claim compensation under it on quitting. You may claim for Strawberry plants, and for Asparagus and other vegetable crops, and for fruit-trees and fruit-bushes planted and permanently set out, and also for the erection or enlargement of buildings for the purpose of the trade or business of a market gardener. The Act of 1895 confers no right to compensation for flowers and shrubs, although planted for sale, but it gives you the right to remove all fruit-trees and fruit-bushes planted by you but not permanently set out. Any claim under the Act of 1895 must be made in the same way as under the Agricultural Holdings Act, 1883—that is to say, not less than two calendar months before the determination of the tenancy written notice of the claim must be given to the landlord, and the notice must state, so far as is reasonably possible, the amount and particulars of the intended claim. There is no necessity to give two calendar months' notice of a claim under the lease. If you and your landlord do not come to an arrangement in settlement of a claim made by you under the Act of 1895, the matter must be settled by a reference in manner provided by the Act of 1883.—K. C. T.

Trespassing poultry.—My next-door neighbour keeps fowls and ducks, and the ducks trespass in my garden and do much harm to

my growing crops. The hedge belongs to me. Is it my duty to maintain a fence against my neighbour's fowls and ducks?—Norton.

*** The rule of law is that every person must protect his own stock (including fowls and ducks) from straying, but there are certain exceptions to this rule. Unless your neighbour can prove that you are liable to fence his poultry out he must keep them at home, and if he fails to do so you may bring an action for trespass in the county court and recover damages from him. It will not be for you to prove that you are not liable to fence out his poultry—the presumption of law is that you are not liable until the contrary is shown to be the case, and so to defeat your claim for damages it will be necessary for your neighbour to prove that you are liable, and if you are private occupiers of adjoining houses and gardens it is most unlikely that he can prove any liability to fence on your part. I should advise you to put your fence into fair order before taking any legal action.—K. C. T.

AQUARIA.

Pond for gold-fish (*Mrs. New*).—The present would be a very good time to clear out your gold-fish-pond and make a fresh start. You would find results more satisfactory if you used Portland cement for the bottom of the pond, as you would then find no leakage take place. Having carefully removed the fish and any choice water-plants, and placed them in some temporary receptacle, let off or bail out the water, and remove all the mud or sediment. The depth of the pond need not be more than 3 feet in the centre, but the sides should slope gradually from the edge. Brickbats or flints having been well rammed in over the surface of the pond bottom, a good layer of Portland cement and sand should be spread over these sufficiently thick to render all water-tight. The Portland cement will quickly set hard and solid, but in order to deprive it of any injurious properties the water must be changed several times before the fish are introduced, which must not be for five or six weeks. After the pond has been properly soaked the bottom should be covered to the depth of 5 inches or 6 inches with well-washed river sand, and in this should be planted a few sprays of Anacharis or other aquatic plants; when these have made a good amount of growth the fish should be returned to the pond. It is important to have the edges of the pond shallow, as this enables the young fry to get beyond the reach of older fish, and so avoid being devoured by them. Any intelligent labouring man could undertake the cementing of your pond.

BEES.

Management of sections (*Robin*).—Yours is by no means an uncommon case, for in getting sections filled much depends upon the strength of the population of the hive, the state of the weather at the time the Bees have become sufficiently strong to store surplus honey, and so forth. Again, it is quite possible that swarms may have left your hives even without your knowledge, and if so the population would be suddenly greatly decreased and all chance of work being done in supers put an end to. When a supered hive throws out a swarm the best thing to do to get the sections filled is to remove them from the parent hive and place them upon the hive containing the swarm after the Bees have made good progress in comb-building in their new heme; there is no chance of sections being filled upon a hive containing a small population, however. The queen-excluder may have prevented the Bees working in the supers. There is sometimes an objection on the part of the working Bees to pass through the perforations of the excluder zinc; still, to ensure the filling of the sections the first thing necessary is to so increase the population of the hive by stimulative feeding early in the season that stocks may be sufficiently strong to take full advantage of the yield while it lasts, for it must be remembered that in our climate the honey-flow is, as a rule, of but short duration. As soon as stores begin to be brought into the hive in spring the queen commences depositing eggs in the cells, and the object of slow feeding is to stimulate the queen to an increased production of eggs while there are yet empty cells in the hive to receive them, for as soon as cells become filled with stores, either natural or as supplied by rapid feeding, the increase of population must, of course, cease. Bees may be induced to take advantage of the super space if all frames not containing brood are removed, and the hive contracted by means of the division boards; the Bees thus crowded have no option, but are obliged to store their honey in the section-boxes. Another important matter in order to get work done in the sections is to keep them well covered up and warm, as Bees will not store honey in a low temperature, or if there is a draught section through the section crate, besides which, if the super is not well covered a draught is caused to pass through the hive, rendering it necessary for an increased number of Bees to cluster upon the brood-combs in the process of hatching, and a consequent decrease in the number of honey-gatherers. Probably the reason for the Bees not working in the supers after you had removed the excluder was that the honey season was then drawing to a close. Yes, you could cut out some of the best honey-comb now with safety; but why not take the outside combs? These are usually free from brood or pollen. If you took two outside combs from each hive you would probably secure over 15 lb. of honey, as a well-filled frame should weigh upwards of 5 lb., and you would then leave sufficient stores for wintering.—S S. G.

BIRDS.

Death of Dove (*Diana*).—It was impossible to fully examine the bird sent, it being in a putrid state when received. It had probably died from apoplexy, arising from over-feeding, or rather, injudicious feeding. Errors in feeding, whether by excess of quantity or excess of stimulating constituents, are the cause of the death of numberless feathered pets. It would be well to vary the diet of your Doves; Wheat alone is not quite the proper food. Supply them with white Millet and Canary-seed occasionally by way of a change, and take care always to supply them with coarse grit sand, for without the help of small stones in the gizzard that organ cannot perform the function of digestion properly, and dyspepsia ensuing lays the foundation of many other complaints. A lump of rock-salt for the Doves to peck at will also tend to keep them in health.

POULTRY AND RABBITS.

REDUCING THE STOCK.

In every poultry-yard where breeding operations are carried on, and where it is the rule to reserve a certain number of pullets each year for stock purposes, there is of necessity stated periods for reducing the adult birds, so as to keep the numbers at a tolerably uniform level. The best date at which this weeding out takes place must depend upon circumstances, because in some districts a demand for old hens or other adult stock may exist at some part of the year, and the rates then obtainable would justify the owner in selling, although for some weeks to come there may be a fairly good promise for fresh eggs which, under other conditions, he could not afford to lose. As a rule, however, the proper time for weeding out is in the autumn; then the hens have finished their season's work, and for a long time to come will not be in a condition to lay eggs in any quantity. It is in connection with this annual clearance that so many of our amateur poultry-keepers make mistakes which often are the cause of an otherwise satisfactory profit being transferred into a loss. Hens in the winter cannot be profitable unless they are laying, and when the whole yard is in this state the absence of profit must be most marked. Another mistake is that of selling the wrong birds. The older a bird becomes the fewer eggs she is likely to lay, and the more prolonged will her annual cessation from laying prove to be. Such hens, as a rule, moult the latest; they can, therefore, be somewhat easily picked out. Another class of hen which should be spared another year's existence is such as may be deformed in any way, or ailing, or an unsteady sitter, or an indifferent layer; all these are unprofitable specimens and can do no good. How to deal with these surplus hens will be a puzzle to some. The simplest plan is to fasten them in a comfortable coop or house, and fatten them as soon as the moulting season is over; that is, supposing they are not killed for home use immediately it is discovered that their laying season is at an end. It must not be supposed that hens of this class are past eating. If they are but eighteen months old—and this is an age at which most of the hens should be cleared off—their flesh is good eating, and possesses a firmness not met with in a chick of the year. Doulting.

Flowers at Bishop's Stortford.—The annual show of this horticultural society took place on August 11th, at the Grange, Bishop Stortford, by permission of Mr. J. Barker, J.P. This show is one of the largest in the eastern counties, and the exhibits, numbering 1,200, were fully up to the average both in numbers and quality. Among the nurserymen who exhibited were Messrs. T. Rivers and Son, of Sawbridgeworth, who had a choice collection of pot fruit; Messrs. Wm. Paul and Son, of Waltham Cross, and Messrs. J. Paul and Son, of Cheshunt, hardy herbaceous plants and cut Roses; Messrs. R. Wallace and Co., of Colchester, attractive display of bulbous flowers; Mr. W. Rumsey, of Waltham Cross, a fine lot of cut Roses; and Messrs. A. E. McMillen, of Hertford, a stand of Sweet Peas. In the competitive classes there were some choice exhibits. For group of plants, Mr. J. Richardson (gardener to Sir J. Blyth, Bart., of Blythwood, Stanstead), took first prize; Mr. T. Lodge (gardener to Mrs. Meret, Hockerill), second; and Mr. B. Calvert (gardener to Col. Archer-Houblon, Hallingbury-place), third. In the classes for Begonias, which are always a strong feature of this show, Mr. D. Patmore (gardener to Mr. Charles Gold, jun.), was first; Mr. E. Harris (gardener to Mr. Alfred Taylor, J.P.), second; and Mr. W. Pavitt (gardener to Mr. W. Smith, hon. sec. to the society), third. In the fruit classes, the Muscat Grapes which took first prize were exceptionally fine, as were the collections of fruit for which prizes were taken by Mr. B. Calvert, Mr. E. Atkins (gardener to Miss Pulteney), and Mr. Beech (gardener to Mr. J. Barker). The Grapes referred to were grown by E. Skelton (gardener to Mr. J. Barker, J.P.). The cottagers' classes were all well filled, and the quality of the produce was, considering the season, highly satisfactory. There were upwards of thirty table decorations in the ladies' department, and also a number of very attractive decorations of other kinds. We are pleased to see that such an old society maintains its vigour, a result due, in no small measure, to the hon. secretary.

PROPOSED CARNATION SOCIETY.

It is INTENDED to Form a CARNATION SOCIETY in the Neighbourhood of Southampton, under the title of "The Southern Counties' Carnation Society." Those who wish to become members can obtain all particulars on application to

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GARDENING ILLUSTRATED.

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FRUIT.

PEACHES AND NECTARINES FOR AMATEURS.

Amateurs, as a rule, have not sufficient accommodation for planting Peaches and Nectarines of capricious characters merely for variety's sake, their usually limited glass structures forcing upon them the necessity of growing only those varieties which have been thoroughly well tested and are profitable. The market grower's selection, in fact, is just what the amateur wants, which invariably consists of those sorts which seldom or never miss a crop, mere size of fruit being only a secondary consideration. To those who possess only one house, varieties which follow each other in the order of ripening are important, as, with a judicious selection, a supply of fruit for a period of several months can be had. For earliest gatherings Amsden June may safely be planted, as this is doubtless by far the best of all the American Peaches, at any rate in the matter of setting and freedom from falling during the stoning period. The heat given by amateurs to their Peach-houses would suit also Alexander and Waterloo—two other American varieties—as it usually amounts to little more than that produced by the sun's rays, and that is just what these require. It is when started very early and subjected to a maximum forcing temperature that failure is to be apprehended. Where room is limited and extra earliness is not desired, Hale's Early may be planted, this being a good all-round Peach of early type. Mention must be made, however, of the fact that it requires artificial fertilisation when grown under glass, but when this is given it never fails to bear well. Stirling Castle and Violette Hâtive are both excellent Peaches, ripening about the same time. The former favours Royal George in most respects, but is safer in houses where little or no heat is employed, and especially in wet, sunless seasons, not being subject to mildew, as Royal George unfortunately is. Where the planter is anxious to exhibit, a magnificent Peach of the same season is Dagmar. This not by any means new Peach is, strange to say, seldom heard of. It has a grand constitution, is similar in size to Stirling Castle, but under full exposure colours as highly as Crimson Galande. That good old Peach Bellegarde is unsurpassed for carrying on the supply, it being not only of all-round good quality, but an unfailing cropper, even under rough-and-ready treatment. For later gatherings, the Nectarine Peach, also comparatively little known, and Sea Eagle, grown now by almost everybody, completes a short but very reliable list of Peaches for amateur growers. The Nectarine Peach is very large and luscious and is very free, while Sea Eagle, which belongs to the paler-skinned section, is so good that it would be hard to name another Peach ripening at the same date to equal it.

Turning to Nectarines, I may perhaps be considered old-fashioned for advising the planting of Hunt's Tawny, but I know of no other Nectarine which bears such continuous and heavy crops and few that ripen earlier, which is saying a good deal. It belongs to the yellow-fleshed class and is of good flavour. A tree of Early Rivers should also be included, as this new Nectarine, in addition to producing large fruit, is a very free cropper. Experience, I think, has proved that Lord Napier, although fine when seen at its best, is not at all reliable under glass, its constitutional defect being shrivelling just as the fruit is ripening. I have it both in a lean-to and span-roofed house, neither of which is forced early, and a portion of the fruit in both always shrivels, and that in spite of timely roof shading. To follow on, Rivers' Orange and Humboldt must be named; both are of the yellow-fleshed section, and where room is limited both need not be planted. The former is, perhaps, the best bearer. The latter, a seedling from Pine-apple, is rather larger and possesses all the good qualities of that well-known Nectarine. Stanwick Elruge is fine for a cool-house, but is very liable when forced to cast its fruit at stoning time. Little need be said about it, except that it is as good in quality as the old Elruge and is a size larger. For later supplies Spenser and Newton are both excellent. That fine-flavoured but capricious Nectarine Victoria should not be planted except where high cultivation can be given, as in nine cases out of ten it is disappointing.

Many more good varieties exist, but I do not think the above-named can easily be superseded where there is only room for a limited number of trees. J.

EARLY APPLES AND PEARS.

Those that ripen at this time of the year are usually much better flavoured if allowed to hang on the trees till required for use. Great care, however, will be needed in gathering, as the least rough handling will cause them to rot. If a basket is used in gathering, this should be lined with paper to prevent the twigs from bruising the fruit, for quite as much care should be exercised with these as is necessary with Peaches. To prolong the time Jargonelle is in use, if only one tree is grown, a portion of it should be shaded from the bright sun previous to the fruit commencing to ripen. Beurré Giffard is also a good Pear if treated in like manner, but soon goes sleepy if gathered and ripened in the fruit-room The earliest and finest fruit of Williams' Bon Chrétien on south walls will soon be showing signs of ripening; such should be gathered and placed in boxes and kept in the dark till required for use. Clapp's Favourite and a few others growing against south walls, which ripen at this time of the year, are better for being gathered a few days before they ripen, as the heat from the walls seems to extract their juice and cause them to eat woolly. The same may be said of some varieties of Apples, while others if gathered too soon lose all their flavour. Devonshire Quarrenden, Irish Peach, Kerry Pippin, and Lady Sudeley are all improved by being allowed to remain on the tree till fully ripe, while soft varieties should be gathered a few days before being eaten and taken to a cool place, especially if the weather be hot. They ought, moreover, to be removed from the trees early in the morning while cool, for if we should experience a season like the last, where the soil is poor many of the early Apples will be scalded by the sun. There is quite as much art in preserving fruit as there is in growing it; therefore during a season like the present when it is not over plentiful pains ought to be taken to prevent any from being spoilt. Where not already done no time should be lost in covering the trees with nets, for never have the birds been more troublesome than this season, nothing coming amiss to them. The blue-headed tits commence to pick holes near the stems while the fruit is quite hard, and will soon spoil sufficient to pay for protecting it. Continue to water trees that are carrying crops, there not having been anything like sufficient water to go down to their roots. It is useless to give driblets to the surface; sufficient should be afforded to penetrate the soil to a considerable depth, as we may still have some dry, hot weather to contend with. R.

FIGS IN A PLANT HOUSE.

Would Figs succeed planted underneath the staging of a lean-to house, the dimensions of which are 15 feet long, 12 feet wide, and 12 feet high at the back, with path through the centre from end to end and staging back and front? I propose covering back wall with Figs, and have a miscellaneous collection of greenhouse plants on the stages.—A.

*** There is no doubt as to the Figs being a success if you pay attention to the cultural details. Give the plants free exposure, as, if overshadowed by other plants, you will fail. In the first place, the border for the roots will claim attention. This is most important, as the Fig, given a free root-run, is gross and barren, and in your case the roots will require more care, being covered with a stage. My advice would be to make a rough pit or bed under the staging to hold the plants, say 2 feet to 3 feet in width the whole length of house, and the same depth; that would allow of 6 inches of brick rubble for drainage, leaving spaces in the wall for the water to escape at the bottom, as it is advisable to concrete or cement the bottom of the bed to prevent the roots going down. You may dig out the soil in your house at the back to the depth given, concrete, and drain. Your plants for a considerable distance would get no light, the back stage and plants keeping away light and sun. Again, in such a position your plants would get more moisture at certain seasons, and there would be continual growth when the trees should be at rest. With a raised border you can throw off the drainage from the stage by the simple contrivance of zinc or slate in a sloping position. Of course, if you had no plants on back stage you could give better treatment. By having a raised bed you will only have 9 feet of back wall to cover—quite enough if you grow your plants well and get new wood yearly. Then as to soil. Get a holding that is rather a heavy yellow loam if possible; mix, say, one quarter of old mortar rubble with it, and, if obtainable, a portion of burnt wood-ashes, and, say, 1 bushel of bone-meal to 20 bushels of soil. Ram the compost firmly, placing a portion of the roughest on the drainage, or,

what is better, sods of turf turned grass-side down. Firm soil means fibrous roots—an essential condition, as they promote sturdy growth. Plant any time early in the new year, say from January to first week in March; obtain strong plants—not old ones, but those in 6-inch or 8-inch pots—with, say, two or more strong side shoots to form leaders. Do not overwater till the plants are growing freely, and do not attempt to fruit the first year. Encourage the plants to run up three to five leading shoots; do not stop these at the points, but stop the side or foreright shoots. For your purpose Brown Turkey is the best variety, and during growth syringe the tops twice daily. Scale is the Fig's worst enemy; if it appears, syringe twice a week with some insecticide.

American Blackberries.—The remarkably long and heavily-fruited rods of the American Kittatiny Blackberry grown at Cliveden recently by the gardener there serve to once more draw attention to these early-fruiting Brambles. Although not an American variety, yet the Parsley-leaved Rubus laciniatus is best known and more widely grown. Even of this there is a selection that is reputed to be finer than is the ordinary strain, but that may be the product of favourable conditions rather than actual distinctness. Without doubt where this Blackberry is well grown, and carefully thinned and trained, it is a wonderful cropper. Some years back a great noise was made about the variety Wilson Junior, and it was largely planted here, but never has made any headway. The Kittatiny is less known, but ample evidence was furnished by the examples of fruiting branches sent to London that the latter is not only superior to the Wilson Junior as a cropper, but also the fruits, which are indeed exceedingly nice, have by far the best flavour; then, too, they ripen even earlier than those of the Parsley-leaved form, and that variety again precedes the ripening of the best of wild Brambles. The gardener states that his plants of the Kittatiny were grown in deep, holding soil, where in winter the ground was sometimes under water; hence it seems but fair to conclude that good, deep soil and plenty of moisture are indispensable requirements for these Brambles. Most certainly, where it will do well, this Kittatiny is well worth cultivation.—A. D.

Royal George Peach.—It is very doubtful whether for the amateur cultivator of wall fruits there is in cultivation any better Peach than this variety, whether for indoor or outdoor wall culture. A good grower and hardy, setting its bloom freely, carrying fruits of fairly good size and rounded form, that give the richest of colouring and capital flavour, hardly any one midseason variety can excel it. A tree in an ordinary cool-house will ripen its fruit a month before the variety will ripen its fruit outside. I have seen it recently in several cases fruiting grandly; nothing, indeed, could be better. Those who want just one good Peach will do well to think of the good old Royal George.—A. D.

Planting Chasselas Vibert Vine (*Mrs R.*)—We strongly advise you to leave the Vine in the pot until March, as it is too late now to plant it in the border. There is not time for it to become established. Stand the pot on a brick or slate at the foot of a wall, supplying it regularly with water until the leaves turn yellow. In November cover the pot with long strawy manure to protect the roots from frost. Early in March dig the border 2 feet deep, removing the worst soil. Place 6 inches of drainage at the bottom, and cover this with a little straw. Add to the best of the natural soil some decayed horse-manure, road-scrapings, and fresh turf or good garden mould. Early in March turn the plant out of the pot, shake all the soil from the roots, and spread them evenly out not more than 6 inches deep. Press the soil down firmly, choosing a dry day for planting. Mulch the surface with half-rotted horse-dung, 2 inches thick, when dry weather comes. If the plant is a young one and with but one stem—this 3 feet long or more—prune it down in January to within 1 foot of the soil.

Phlox Sylphide.—This is one of the purest of the white Phloxes, the flowers excellent in form and of good substance, the truss large, and the habit vigorous.

ROSES.

Rose-tree unsatisfactory.—I should be much obliged if you can tell me what is wrong with my Rose-trees, pieces of which I send with this for you to see? My garden is only heavy clay soil. The Roses in question are standards, planted last autumn, and looked strong and well till after the first flowering. They were planted with stable-manure and some good loam to start them, and are placed among shrubs chiefly in sunny borders. I shall be much obliged if you will tell me what is wrong with the treatment, whether I can cure the bushes, and how to prevent the evil in other cases? The sorts of Roses sent are Suzanne Marie Rodocanachi, Ulrich Brunner, General Jacqueminot, etc.—G. C.

*** Your Roses are suffering from the disease known as red-rust (Uredo Rosæ), for which there is no known cure. It is not certain to appear next season, no matter what the weather; nor has soil or variety, if we except the true Teas and Noisettes, any apparent effect upon this autumnal disease. It is equally prevalent during a hot or cold or a wet or dry season, while what seems exactly the same conditions will often find plants exempt. It is supposed to be the after stage of Orange-fungus, only appearing when the weather has been favourable for the further development of Orange-fungus spores.

Roses by drive.—I have a piece of ground (clayey soil) about 5 yards square adjoining my drive I wish to plant with wild Brier Roses (fairly sunny position). I want variety of colour in the flowers. What sorts would suit best, and how many plants required? I want them to grow into a thick tangled mass, as when they grow wild.—Nil Desperandum.

*** Read our notes in a recent issue upon "Brier hedges" It may help you. You could not possibly have better Briers for your purpose than the Penzance Sweet Briers. By planting Meg Merrilees, Jeannie Deans, Rose Bradwardine, Green Mantle, Flora McIvor, Anne of Gierstein, and Edith Bellenden, you will have variety from white to deep scarlet. Lady Penzance is another very showy Sweet Brier, coppery-salmon and yellow in colour. Plant 5 feet or 6 feet apart each way; nine plants of these will be ample, as they are vigorous growers.

Treatment of Roses.—I have some Roses on this house which were planted last autumn. They include Gloire de Dijon, Crimson Rambler, Reine M. Henriette, Captain Christy, and Rêve d'Or. They are making immense shoots. My old gardener says they should be trained in a horizontal position at present, and not allowed to go up the wall. Is this right? Some of the new growths are so long that they will soon fill up the width of wall allotted to each Rose. Thank you for your answer about the Pink Gloire. I am waiting for the autumn bloom to send you some more.—Helston.

*** There is no object in training the shoots horizontally at present; but next spring a more or less horizontal direction will induce a larger and better display of blossom. Do not prune away any of their growth yet, and only very little in the spring.

Pot-Roses.—In the spring I bought and potted some Roses—Françisca Krüger, Gloire Lyonnaise, and Mme. Lambard, but being late they did not flower well and I put outside to ripen growth. The two former are now budded, and I have them in unheated house, south aspect, to open blooms. What treatment do they require?—Amateur.

*** Remove to the open again and induce more fresh growth for winter flowering. We would scarcely have housed them during summer weather, except as a safeguard against wind and rain spoiling the blooms.

Rose Gloire de Margottin (H.P.).—Anyone requiring a brilliant scarlet crimson Rose for massing should make a point of obtaining a good number of this variety. From its habit of growth and vivid colour we would take it to be a seedling from that old variety Gloire des Rosomanes. The flowers are freely produced in bunches, and although they individually are rather thin, the general effect when these bunches are fully expanded is good. The long buds of this Rose are handsome, and most useful for buttonholes. As a pillar Rose or grown upon a standard, where its long, pendulous shoots droop gracefully with their showy blossoms, it is an ideal variety, and I can highly commend it for garden decoration.—W. E.

A very dark Rose.—Gloire des Bruxelles is the name of a Rose that at present holds premier position as the blackest Rose. The colour is a rich, velvety maroon, the outer petals flamed with scarlet. The flowers, perhaps, are not so fine as those of Abel Carrière or Prince Camille de Rohan, but they are certainly darker in colour than these two well-known varieties. The growth of Gloire des Bruxelles is strong and rather of a trailing character.—W. E.

Rose Margaret Dickson not flowering (*R. H. Croker*).—Margaret Dickson is a differently-habited Rose to the other you name. The shoots will flower well next year, and must not be hard pruned. Ten feet is not an extraordinary length for this Rose to grow. We prefer it as a pegged-down dwarf, and are sure you will like it next season if treated in that way.

Mme. Carnot (Tea).—An attractive garden Rose with loose petals of a yellowish-white, clear and beautiful. It is a good free grower.—E.

Mme. Denise de Reversaux (Tea).—Providing this Rose will open well, it will be a fine exhibition variety. It is a clear, lemon-white colour, and as double as The Bride or even more so.—W.

Mme. Eugene Resal (China).—I should not care to estimate the quantity of plants that have been distributed of that well-known Rose Mme. Laurette Messimy, but it must be prodigious. The above Rose is a seedling from it. The colour is a warmer tint, with a lovely yellow shading, very conspicuous from the back of the flower as the sun shines upon it. I imagine it will please everyone who obtains it.—W.

Marquise Litta (H T.)—Perhaps the best Rose of its year. It is as free-flowering as Belle Siebrecht, and the long-pointed buds are very beautiful. The colour is a lurid vermilion. It will be a grand variety for massing.—W.

Souv. du President Carnot (Tea).—The best description of this Rose would be to term it a refined Souv. de Malmaison. The buds at times are similar, but the depth of petal of the expanded flowers soon proclaims its superiority over the old favourite. It is produced in great profusion upon stiff stems.—W.

Sylph (Tea).—I could not recommend anyone a better garden Tea Rose than this. It is grand. The stiff stems are covered with the loveliest buds, all produced upon erect stems. The colour is something in the way of Souv. d'Elise Vardon, but there is a pleasing violet shading not seen in the variety mentioned.—W. E.

OUTDOOR PLANTS.

PROPAGATION OF SUMMER FLOWERS.

Where gardens are naturally dry and facilities for watering are very scanty there has been very little growth in summer-bedding plants, and in many cases cuttings will be scarce. Given a fairly good soil, strong plants to start with, and one thorough soaking, Pelargoniums are close and compact; there has been no strong growth, but, on the other hand, plenty of flower. For the last few years I have relied mainly for scarlets on Raspail and Turtle's Surprise respectively for medium-sized and small beds; they are nearly as bright as the best singles, and there is the additional merit that if one wants a big handful of scarlet flowers they can always be culled from the beds. Henri Jacoby is still the best dark scarlet, Surprise the best salmon, and Amaranth and Constance the most reliable dark and light pinks. There may be a better single Pelargonium than Constance, but I have yet to find it. Alike for bedding or for summer and winter flowering in pots it is first-class. Such fine strains of Verbena and Petunia are now obtainable from seed, that one can dispense with the trouble of a lot of cutting-pots through the winter, unless it be some exceptionally good thing it is desirable to perpetuate. The difficulty in keeping a stock of silvery Centaureas is also at an end. Excellent plants are secured by sowing in January. Lobelias I have very nearly discarded in favour of the different shades of Tufted Pansies and Cannell's Dwarf Ageratum. The latter has been a mass of flower for the last month, and will continue in good form till the frost nips it. Cuttings will not be easily obtained, and we shall have to cut over and pot up a batch of old plants which, if kept growing along gently through the winter, will furnish a plentiful supply in early spring. Calceolarias were a failure with me for several seasons, and were accordingly shelved for Mrs Clibran Tropæolum, which does remarkably well in our light, dry soil. Begonias of the semperflorens

type are very fair alike in flower and foliage. They are seen to the best advantage on a carpet of Manglesi "Geranium" or Mesembryanthemum. The above comprise nearly all the bedding plants I find it necessary to grow. Hardy plants and enduring March-sown annuals have largely taken the places they formerly occupied through the summer months. T.

WHITE DAFFODILS.

White flowers have always been reckoned choice and precious, and wherever there exists in any family of strongly-coloured flowers a white variety or group it is certain to be esteemed beyond its kindred. Daffodils are no exception to this rule. Mme. de Graaff, queen of White Daffodils, is also queen of all Daffodils. Some four Daffodils may be grouped for convenience under the term N. moschatus (see illustration), but distinguished according to their varying shape, as N. albicans, cernuus, tortuosus, and Colleen Bawn. These have long dwelt in old gardens in England, and more abundantly in Ireland, where two or three dwarfer sorts are also found. The rarest and most shapely of these is the little "white minor;" it has been discovered in but one or two Irish gardens, and is but a shy flowerer when found.

It has been suggested that these prized bulbs were brought to Ireland by refugees from France or other parts of the Continent, but it appears more probable that they survive the sites of the old religious houses, whose inmates cherished them for their real or supposed medicinal virtues.

It is curious to note that although N. moschatus was known in Continental gardens in the late sixteenth and early seventeenth century days, when it was accurately represented by Dutch and Belgian painters, yet it was apparently quite lost sight of again until rediscovered in the Val de Arrases in the early summer of 1884. There is a specimen in the Linnean Herbarium named N. moschatus (No. 5) from the garden at Upsala, but it is not the wild N. moschatus of the Pyrenees, and is more probably N. cernuus of our present day gardens. Again, the much larger plant grown in Holland and in English gardens as N. moschatus of the Dutch is quite a different thing, and is now more correctly known as N. albicans. Haworth knew it as "the greater Spanish white Daffodil," but it has never been found wild in Spain or elsewhere. As a matter of fact, the only really wild white Daffodil known is the true N. moschatus, and from which it seems not only possible but highly probable that all the other white variations not known in gardens have descended from seed. Like all wild seedling Daffodils, N. moschatus varies to a limited degree, and from a large collected batch of bulbs in flower you can pick some small varieties having narrow perianth divisions and very narrow and nearly perfectly cylindrical trumpets, while other flowers have broad perianths and wider trumpets approaching to the garden white known as Colleen Bawn. In nearly all cases the flowers are distinctly pendent, the trumpet of the flower hanging parallel to the scape. The flowers are of a pure snowy whiteness, and this is intensified by the dark green tube, the outline of which is convex rather than concave, as in most Trumpet Narcissi. It is an exquisite plant for moist, half-shaded positions on lawn or meadow, where its drooping flowers show up well in the Grass, or it does well if its bulbs nestle amongst Moss-covered stones in the rock-garden, but it rarely grows or looks at its best on a bare and open border. In pots it is charming as grown in a cold-frame.

By hybridising this plant and others with N. triandrus albus Mr. Engleheart has raised some charming seedlings of the Snowdrop section—that is to say, white or pale creamy varieties of the N. Johnstoni type. It would be very interesting if a white Campernelle (N. odorus) could be obtained by crossing with the true Jonquil (N. Jonquilla). Although the lesser Spanish white Daffodil is chaste in colour and dainty in form rather than large and showy, it nevertheless deserves careful culture and naturalisation in our gardens. Coming as it does from the cool, moist valleys of the Hautes Pyrenees, where it is fed by the snow melting every spring, we must remember that it enjoys shade, moisture, and the company of Grass or other herbage rather than a bare and hot and sunny border, fully exposed.

Group of White Daffodil (Narcissus moschatus).

Judging Show, Fancy, and Tufted Pansies *(E. Jeroise).*—The chief points in judging Pansies will be found as follows:—*Show Pansies:* Perfectly circular outline, free from crinkled edges and unevenness. The petals should be thick and of bright velvety appearance. The ground colour (white or yellow) should be similar in each of the three lower petals, circular, and of equal width between blotch and the belt of the three lower petals. The margin or belt should be of the same colour as the top petals, and of equal breadth throughout. Blotch, dense, solid, and circular, free from all suffusion into the ground colour or eye. The eye should be bright orange or gold, solid, without running into the blotch, and exactly in the centre of the bloom. Size should not be less than 1½ inches. Selfs should be of the same shade throughout, and the denser the blotch the better. *Fancy Pansies:* The particulars as given for Show Pansies are applicable to the Fancy sorts with this exception: the colours in the top petals may run into each other, as they usually do. The blotch should be dense and solid, the margin of the lower petal should be even and clearly defined, and the same applies to the side petals. Size should be quite 1¾ inches, and as much larger as possible. *Tufted Pansies* are usually exhibited in sprays of six or nine blooms, with their own foliage. The blooms should be of even size, selfs of clear colour, edged and fancy types with evenness of margins and markings similar in each flower. Uneven edges or blooms, however little damaged by insects, are serious blemishes. The setting-up of the sprays in a pleasing way also counts with most judges. Size, too, is a great point.

Good cutting annuals.—From a very fine collection of annuals in bloom I saw recently I took the following selection as presenting material of great excellence, such as anyone might grow, because hardy annuals are so easily raised. The various members of the Centaurea family, classed as Sweet Sultans, yellow, white, and lilac, are all capital; they grow 2 feet in height and have long stems. The blooms, when the ground on which the plants are growing is good, are very distinct and fine. Then there are the several varieties of annual Chrysanthemums, such as tricolor, coronarium, segetum, and venustum, all similar in form, having large single Daisy-like flowers in divers colours, and borne on long stems singly. Gaillardia picta is good, also the flowers yellow and red, and not so unduly large as are those of the perennial varieties. Singularly pleasing is Cacalia coccinea, flowers Groundsel-like, but much larger, and of an intensely rich orange-red colour. These are borne on tall stems. Very pretty indeed and very diverse is Viscaria cardinalis, height 12 inches, flowers like those of Nemophila in shape, but of a rosy-magenta colour; this is a charming annual. A very pleasing and almost white Marguerite, but not large, is found in flowers of Calendula pluvialis, 12 inches in height; the eyes are deep yellow and the pollen cases crimson. Then there are numerous varieties of Sweet Scabious, both tall and dwarf, although the former is the best to cut from. The flowers are borne singly on tall stems, and some have colours of great beauty. Everybody probably knows Love-in-a-mist (Nigella damascena), but, charming as is both plant and flower, few seem to grow it. The foliage is light and feathery, and the flowers, white and green, are capital for ordinary decorative uses. Very diverse and fine for fixing up in the centres of vases are the beautiful spikes of Lupinus hybridus atrococcineus. The flowers have nearly white tips and maroon standards, being Pea-shaped, though only ½ inch in depth. They are borne on tall spikes, some 9 inches in length; a noble back row plant. So also is the beautiful Rose Mallow (Lavatera trimestris rosea); this grows 30 inches in height and carries in rich profusion lovely Convolvulus-like flowers of a soft rosy-pink; a glorious annual is this. Rather tall, too, are the varieties of Salpiglossis, many of the flowers showing rich and unwonted colouring. Calliopsis coronata and Drummondi are excellent for cutting and charming for any purpose; so, too, are the smaller single Sunflowers, especially cucumerifolius and the new Miniature. Mignonettes, especially the fine Giant White, should always be largely grown to furnish side-shoots for cutting. These form but a moderate list, to which may be added the Larkspurs, of branching habit, and the pretty Clarkias, especially the charming double variety elegans rosea; but few as they are out of many, how well do they serve to show the wondrous beauty furnished by hardy annuals. Only those who have worked in or frequented trial gardens of annuals realise what a wonderful wealth of loveliness this section of garden flowers gives. A special garden should be devoted to them in all large places, sowing in spring for the summer, and raising others of the hardiest nature for winter and spring bedding. I have not mentioned Sweet Peas because these are now well known, but they need stakes or supports, which none mentioned require.—A. D.

Double Tropæolum (Nasturtium).—Seeing in last week's Gardening "G. A's." correspondence about a double Nasturtium, I venture to send you a specimen of one grown in our garden. The flowers, however, are not quite so large as they were at the beginning of the season, owing, I suppose, to the dry weather. This Nasturtium is quite dwarf and compact in habit, and throws up a profusion of flowers, which stand well above the foliage, so at a little distance the plants appear a mass of scarlet. It is very showy, and would, I think, make a good edging to a large border, as it flowers continuously throughout the summer. Is it at all rare?—Ella Tomlinson.

*** A brightly-coloured variety, very double and pretty. It is not at all common.

Lilium speciosum.—Some groups of this fine hardy Lily are now commencing to flower at Kew. Of this kind alone there are two large oblong groups, and, judging by the numerous stems, the plants are old-established clumps. Moreover, they occupy a position in the open, and, save for a groundwork of White Heath, have no protection whatever. It is true the plants are not so vigorous as when planted in shady places with a fair amount of moisture, yet, notwithstanding, they afford a capital idea of what anyone may accomplish with such things in similar places. Shade is frequently, though often quite erroneously, made inseparable with Lilies, but at Kew the heads of bloom of a large majority appear in the fullest sunshine, while the base, and, of course, the roots also, are shaded with plants of shrubby habit. By a happy choice of suitable shrubs one spot in any garden may be made, as is noticeable in many instances at Kew, doubly interesting. The above species has flowers heavily stained with rose, and is amongst the most satisfactory Lilies for the garden. In positions well suited to it the plants often attain 7 feet or 8 feet high.

Carnation King Arthur.—One of the grandest of all the self scarlet Carnations of the border class is this one—a bold and striking flower of a crimson hue. Though large in size the calyx is all one could desire.

THE KITCHEN GARDEN.

NOTES ON TOMATOES.

There is doubtless a good deal of truth in the remarks on flavour in Tomatoes, on page 328, although, at the same time, I cannot agree with some of the writer's statements at all. Some of the old-fashioned Tomatoes possessed an excellent flavour, undeniably, and especially such as the old Excelsior (Hathaway's) and Dedham Favourite, while that of Trophy and the huge Mikado was not at all bad. But what about Hackwood Park, Abundance (Harrison's), and, later on, the really nasty King Humbert, or Chiswick Red (probably the worst-flavoured Tomato in cultivation), and others? I consider the flavour of the true old (rough) Large Red also very inferior, independent of its poor colour and coarse, rough appearance, though the Improved Large Red, as grown extensively in Worthing and elsewhere, has a very nice sweet flavour, and many of the fruits come nearly or quite smooth.

Perfection is by no means a bad-flavoured Tomato when well grown, and this good quality is undoubtedly partaken of to some extent by its numerous progeny and synonyms. It is, however, perhaps a little deficient in the peculiar brisk or sub-acid quality so much relished by some. Some of the newest smooth, large-fruited kinds, American in particular, are sadly deficient in flavour, and Challenger, though good in other respects, has no flavour at all to speak of; but a great deal—a very great deal—depends upon the way in which the fruit is grown. Where the plants are constantly fed up with powerful stimulants and chemical manures, though the growth may be remarkably robust and the crop very heavy and handsome, the flavour of the fruit is sure to be watery and poor. Tomatoes may be "fed up" to almost any point of size and quantity of fruit, but it is a very difficult matter to secure quantity and quality too.

Those who like "sweet"-flavoured Tomatoes will find the now old Prelude one of the most delicious, and Conference, of which the former was one of the parents, partakes largely of the same desirable characteristic. This last, again, being one of the parents of Ifield Gem, accounts for the acknowledged and uniform excellence in flavour of the latter, and in it we have great solidity and the rich, glossy crimson hue so much admired combined. If "J." is a connoisseur in Tomatoes, and likes to send me his address, I will forward him a few fruits of a seedling Tomato with, I think, a still finer flavour than any of the foregoing. The flavour of Early Ruby is not bad, but I regard that of Chemin Rouge one of its weakest points; it is a good grower and a grand setter and cropper, but the flavour is not first-rate to my mind. Speaking for myself, give me, as a rule, a well-grown smooth Tomato for flavour before all the "rough" kinds that ever were raised or grown.

Indoor *versus* outdoor Tomatoes.—"J." says that all will agree that indoor Tomatoes are of better quality than those grown outside. As a general rule, yes; but there are exceptions. In America outdoor Tomatoes are preferred to the house-grown article, and much the same thing obtains in this district. The local climate is very hot and dry, and the plants make a more sturdy and vigorous growth out-of-doors than in, and set up and crop better with less care and labour—as long as the weather remains fine, of course. We really only want glass for this crop early and late in the season. Last year we had heavy crops of as fine fruit as anyone would wish to see, or taste, of the Large Red (Improved), Ruby, Ifield Gem, Chemin Rouge, and Early Evesham out-of-doors; in fact, nearly all the ordinary varieties appear to succeed equally well. In such weather as we have had lately they also thrive better in the open than against sunny walls, where the heat is so great that many of the blooms drop instead of setting, unless the plants are frequently and heavily watered and syringed overhead. It is surprising what a quantity of water and liquid-manure the plants require when in full bearing in dry, hot weather; even with a liberal mulch of manure over the roots one seems to be always watering

Tomatoes without air.—To grow Tomatoes under glass without abundant ventilation is contrary to all the accepted rules, yet it can be done. A near neighbour of mine has a batch of plants growing in a sunny span-roofed structure that are in perfect health and are bearing a very heavy crop of fine fruit, yet the ventilators are never opened at all and the door only occasionally, when watering or otherwise attending to the plants. The house is not a low one, with rather high glass sides, so that the hottest of the air ascends up above the plants, which are set out in a wide bed of ordinary loamy soil along the front of the house. On a sunny day the atmosphere inside the house is simply stifling, no shade being given; yet, strange to say, there is no disease whatever, and the plants are pictures of health and vigour.

The "flagging" disease.—I am beginning to regard this most troublesome and puzzling affection as less of an actual disease than an indication that the plants are unhappily circumstanced in some respects. An unsuitable soil, impure water, or an unfavourable position will all cause it. In the nursery of a grower in this district the plants invariably contract it when planted out, but in pots they succeed capitally. This proves that it can scarcely be a true disease.

B. C. R.

CELERY.

This is one of the most useful plants anyone can grow, but failures often occur. It is at this season that these can be prevented. Of course, it is too late to advise on sowing. I referred to this much earlier in the year, but I notice amateurs are not nearly particular enough in studying variety. It is useless to give good culture, and then after all one's labour find the Celery poor and flavourless. There are some excellent kinds of Celery, but even the best soon deteriorates when seeding if there are several kinds grown or the seed-stock is a poor one. Our large growers pay much attention to seed-stock. They do not save from inferior ones. If there is poor culture, however, it is useless to expect good results, no matter how fine the strain. For early use, Early Rose and Superb White are kinds any amateur may grow with confidence, and though there are larger kinds when earliness is considered, and quality, these two are of great merit. For midseason supplies Sutton's A1 is a fine Celery, always reliable, dwarf, and may be planted closer than coarse kinds—this is a gain in small gardens—and it rarely runs or bolts. It is good also in heavy soils. Although A1 is an early variety it is a good keeper and remains solid till the spring. It is a beautiful pink or light red colour, and of splendid flavour. Another very fine Celery is Major Clarke's Solid Red; this is a larger Celery, and well adapted for exhibition. It is solid, heavy, and good. I use this for mid-winter supplies to follow those named above, and it has few equals. Those who need a white large Celery may grow the Solid Ivory White, a very fine variety, not known as much as its merits deserve. It is not coarse or pithy, but solid, and a splendid keeper. For late use I have found Standard Bearer the best I have grown. It is a pink variety, not large, but a grand keeper. We have had this good till May with only ordinary culture, but to keep it late there must be a well-hardened leaf, late mulching, and abundance of moisture during the growing season.

Celery Superb White.

Some object to the pink or red varieties because they are not good for boiling as a vegetable. They lose, however, their pink colour with keeping, and red kinds are hardier, and I think of superior quality. Celery is not made use of as a vegetable nearly as much as it should be. It is easily digested, and makes a splendid winter vegetable. Some may say that it is costly. I think not, once the cultivator knows how to grow it. It is useless to sow or plant too late. The plant must have time to make a good growth and get full-sized.

A few words as to failures. The principal cause is want of moisture during the growing season. This year in many places, with prolonged drought, plants will have made small progress unless given ample moisture. Celery should never be dry at the roots from the time it is planted till fit to lift. In showery weather the plant does not get enough water, as leaves throw the moisture from the plants, and often the roots are dust-dry, with the result the plants run or bolt, or failing this get thick, woody stems. It may be asked how can Celery be grown with little trouble to the amateur? My advice is plant early, and never allow them to get dry. Water overhead in the evening. Avoid too early moulding up. When this is done too early or in excess growth is checked, the centres decay, and many plants are ruined. Do not mould up before the leaf-growth is well advanced. Moulding is best done piecemeal in small quantities. This does not arrest growth, and the plants are not injured. Excess of food is another evil. It is far better to feed a little and often than give strong doses of crude manures. I am in favour of irrigation—it is excellent—but not pure sewage. One can give too much manure at planting. I would advise a fair quantity, but prefer to feed liberally when growth is vigorous. Fish-manure, a little salt in showery weather, soot and liquid-manure, with ample supplies of clear water, are the best to give, and a thorough clear watering after using strong liquid is advantageous.

W.

Alderman Pea.—I am somewhat surprised that more attention is not paid to this splendid variety by both gardeners and exhibitors. I spent 7s. 6d. upon three packets when it first came out, and, as an experiment, the results justified the outlay, so that I annually include it in my sowings. It is a good variety to precede Ne Plus Ultra, and comes easily at a good time for the exhibitor. With me it has proved a vigorous grower, haulm of good colour, bears down to the ground, and the pods are mostly of good shape and quality. Sharpe's Victor Pea has also during the past two seasons given a wonderfully good account of itself, especially upon some experimental allotments in the neighbourhood. I consider that nothing in its class as yet touches it.—R. W. F.

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THE FLAME-FLOWERS (KNIPHOFIAS).

The Flame-flowers (Kniphofias or Tritomas) are among the handsomest and most brilliant flowers of the early autumn months. Not exclusively confined to this period, however, for the forms of

K. aloides, the Tritoma Uvaria of so many years, are decidedly more summer-flowering than anything else. Indeed, owing to the remarkable way in which the varieties succeed each other in their flowering, we have much to be thankful for, as, no matter at what season they bloom, they are quite alone in the brilliant effect they create in the garden. In these respects they are unique. Among all the kinds, perhaps none can surpass the variety of aloides known as grandis (see cut) in the gorgeous effect that may be produced by it alone. Noble in stature, its giant stems towering to 8 feet or 9 feet high, and bearing aloft its giant heads of brilliant flowers, it produces an effect in garden scenery not obtainable by any other plant. Less in stature, though decidedly more free-flowering, is the typical species, a plant still invaluable, because generally much more hardy and enduring. Thus it is that we meet in wayside gardens bold and handsome clumps of this fine old plant that have existed for years with little or no care. If a good deal of the hardiness of this plant could be imparted to the majority of recent hybrids what an array of these flowers might be seen in the best hardy plant gardens in a year or two. Many of the kinds, however, are sufficiently hardy to be brought safely through our ordinary winters with a slight protection of some kind, and this they fully deserve. It may be well in some instances, where the varieties are somewhat tender, to take this point into consideration at planting time, and, by associating them with other things, provide them at the same time with a sort of natural shelter. But where this cannot be done, the little protection needed may easily be supplied them in almost any position in the garden. Deep planting, say 6 inches or 7 inches, is a great help to protection from frost. Even the old form so familiar to us all is sadly weakened in certain winters when growing on heavy soils, not by actual frost or snow as much as the changes of temperature to which the plants are subjected. Very frequently snow is a source of danger to Kniphofias—we mean wet snow in the crowns of the plants—or, again, where severe frost sets in immediately succeeding a season of heavy rain. Large clumps may be protected against these evils by gathering the leaves together in a sort of pyramid and tying them loosely to three or four stakes or stout Pea-sticks. In doing this the innermost leaves must be first taken in the hand and secured, adding now and again sufficient dry straw or Bracken to allow of air reaching the foliage in the bundle. This and a tuft of Bracken thrust to the top of the sticks from inside will prevent the wet lodging in the centre of the plant. Beyond this, a good heavy mulch of coal-ashes, Cocoa-nut-fibre, or short litter about the base will suffice to keep these Flame-flowers secure in very hard weather.

There is one peculiarity in these plants very noticeable in old clumps of K. aloides and varieties, and that is their desire to put fresh growths from below ground, a valuable stock often being saved from extinction in some collections by these alone when a severe winter has killed the main crowns to the ground.

There is one system in vogue when sending the strong-growing Kniphofias to this country from abroad that cannot be too strongly condemned—viz., sending a stump about a foot long and with half-a-dozen root-fibres, the leaves having been cut clean off at the height named. This treatment is invariably fatal to the plants, and always so to those thus treated in autumn and laid in by the heels or planted in the border. The only possible way to deal with

Kniphofia hybrida Triumph.

K. aloides grandis.

Common Flame-flower.

A Hybrid Flame-flower (Kniphofia Obelisk).

such pieces when received in autumn or winter is to place them in as small pots as possible and stand in a dry, airy frame, keeping them comparatively dry at the root and not allowing any wet down to the heart of the plant. We have seen scores, and possibly hundreds, succumb to this practice of defoliation. It is quite another thing to do it in March or April with returning growth, but even then it is neither helpful nor desirable, and should always be avoided, particularly with plants that have been lifted and divided. Perhaps the best time in the year for transplanting Kniphofias is the month of March or quite early in April, as at this time new growth will be apparent above ground, and with it activity below also.

Among the more recent kinds, the following stand out very conspicuously. In Pfitzeri the colour reminds one of that of the scarlet trumpet Honeysuckle, the flowers being also very long and bright in colour throughout their length. Otto Mann is a very free-flowering variety, the flowers of a pleasing orange shade, the spikes large and freely produced. John Benary is very distinct, with fine spikes of coral-red flowers. A very pleasing variety is Solfaterre, with yellow blossoms that are quite distinct. In Victor Lemoine, the possessor of very long, dense spikes that rise to 4 feet high, the colour is a tawny orange, with vermilion shade, while Floribunda has massive spikes of rich crimson, very showy and well formed, and, as implied by its distinctive name, produced in great numbers also. The new variety Tucki has blossoms of a bright yellow. It is one of the very earliest to bloom, besides bearing the reputation which among these flowers is of great worth—of being the hardiest and most vigorous of all the tribe. Should this prove correct, Tucki should be freely used by hybridists. K. Nelsoni was introduced within the first few years from the South African Republic. Max Leichtlin, of Baden-Baden, says: "It is the most free-flowering species I have ever had under cultivation. It is elegant, not too large, flowers very late, and the long, narrow spikes strike one by their form and bright colouring in shades of scarlet. It surpasses K. Macowani, and I am convinced it will become a favourite when once seen in strong clumps." K. hybrida Triumph (see cut) is one of Max Leichtlin's seedlings—"a stately plant with luxuriant foliage, the flower-stalks reaching a height of 5 feet, and the spikes are often 9 inches long, of a bright deep yellow colour."

K. NOBILIS, a variety of K. aloides or Uvaria, is well named. It grows from 6 feet to 8 feet in height, bearing a huge head of flowers upon its stout stalk. It is very vigorous and quick in getting established.

K. BURCHELLI is one of the early-flowering kinds, the flowers bright red, those of the base of the spike yellow. A distinct kind. It commences to bloom in August, and continues for a long time.

K. CORALLINA is one of the dwarfs of the family, but an exceedingly pretty little species, free, and with a spike of coral-red flowers about 3 feet in height.

K. CARNOSA is a charming kind, the flowers being of an apricot colour, and appearing in September. The flower-stems grow about 1 foot in height.

K. CAULESCENS is a handsome species for its leaves. It has a stem well clothed with large, broad, glaucous leaves, but the flowers are of a dull greenish shade, not in the least pretty or interesting.

K. LEICHTLINI is a distinct kind. It has brownish-red flowers, and the peculiarity of opening from the apex of the spike down to the base, quite in opposition to the other kinds, whose flowers expand from base to apex. It comes to us from Abyssinia, and is unfortunately tender, needing protection even in the south of England.

K. MACOWANI is a beautiful plant, and only from 1 foot to 1½ feet high, but its grassy foliage and oblong clusters of bright orange-red flowers make it very distinct. It is somewhat more tender than the common kind, though it succeeds well enough in light soil in a sheltered, sunny position. It is very pretty, and produces freely its spikes of flowers, whose colour as near as possible resembles that of the flesh of an Apricot.

K. NORTHLE is not amongst the brightest of the family, yet there is considerable value both in the great vigour and boldness of the plant, as also its decided earliness to bloom. The unexpanded flowers are of a reddish hue, whilst the expanded ones are of a yellow-green tint. The foliage is vigorous.

K. ROOPERI is a brilliant and vigorous kind with flower-spikes which grow nearly a yard high. It is at its best during August, and is closely allied to K. aloides or Uvaria. It requires some protection during the winter, and is effective when in full bloom, the long flower-heads being a mass of bright orange-red flowers.

K. SARMENTOSA is another valuable kind with apparently no set season of blooming, as it seems to be almost perpetual flowering. Established tufts are hardly without flower-spikes all through the summer and autumn. The flowers are red in the upper part and yellow or yellow tinged with red in the lower. It is as hardy as any of its family.

K. SAUNDERSI is a noble kind, with a flower-spike 5 feet in height, the flowering portion being quite a foot long, and the flowers a pale orange-red, shading to a brighter red.

Besides the hybrids mentioned above, note

A flower border by fruit wall. From a photograph by Mrs. Hume Smith, Cobthorne, Oundle.

should be made of Obelisk, which is robust in growth, very free flowering, the spikes pure yellow—a rich colour.

PROPAGATION.—All the stemless kinds are easily propagated by division and seed when produced in favourable seasons; but the stemmed or caulescent kinds cannot be so treated. However, those who wish to increase their stock of these need not fear to behead them; in fact, it is the only way in which K. caulescens can be propagated, as it seldom develops offshoots unless so treated. When thus dealt with it will throw up a large number of shoots, which, if allowed to remain until a root or two are produced, may be taken off and kept in a close frame for a time and then potted in a sandy compost. K. sarmentosa is the easiest to increase, as it throws out underground shoots, which may be taken off at any time. K. Quartiniana develops small shoots at almost right-angles with the base of the stem, and if these be taken off and treated as cuttings they may be relied upon to strike freely.

Cape Hyacinth (Hyacinthus candicans).—This charming bulbous plant I would strongly recommend to those amateurs who have not grown it in the greenhouse, and to those especially who like to grow things a little out of the ordinary. With its bold leaves and graceful stem, well covered with flowers, it is very charming, easily grown, and free from insects. I generally plant three bulbs in 9-inch pots. This year each flower-stem grew to a height of 6 feet, and had between forty-five and fifty-five flowers. Grouped in centre of greenhouse on the floor it looked very effective.—A. COOPER, *Marston*.

PLANTING NARROW FLOWER BORDERS.

THE illustration shows the charming effect that may be got by filling the narrow borders that sometimes skirt garden walls with hardy plants. In this case Irises are largely used, these being followed by other flowers in their season, and if they stray on to the path the result is more pleasing still. A hard edge is broken up with the result seen in the illustration. Such a border as this is too often planted with the regulation lines of bedding plants edged with some sickly Pelargonium, utterly out of place in this position. We are sick of the same Pelargonium and variegated plants repeated in gardens and parks throughout the land. They are more oppressive still when used in long lines in such a border as that shown. The Gesner's Tulips, Daffodils, and many other spring bulbs would be effective in a border like this if bold groups were made of them.

Polyanthus.—There seems a doubt with some as to whether divided old plants are likely to be a success for another year, but there is very little doubt about it. The answer is—"Most decidedly if the operation is carefully performed." The finest individual flowers are obtained from seedlings, but for a great wealth of bloom there is nothing like the old stock. Being aware that circumstances would necessitate the removal of the plants from the quarters they have occupied for the last four years, I went carefully through them and marked the best when they were in flower. These have just been lifted, and as the permanent quarters are not yet available, they are laid in a north border, and having received a good soaking, the young growth is well on the move. The ground for their reception will be thoroughly well done and the old crowns split up into two, three, or four plants, as their size and formation may determine. Red-spider had a grip of the plants quite early in the season, and with the inability to water it increased so rapidly that some time before the lifting took place the old foliage was simply a yellow mass.—E.

Cactus Dahlia Mayor Haskins.—Those on the look-out for something good in the way of Dahlias of this increasingly popular type should make a note of the above. Its colour is rich crimson and the form perfect. I thought an improvement on the variety Gloriosa to be an impossibility. The fault of the latter with some is that the flowers come too big. If this be a fault, the newer Mayor Haskins should be called an improvement, and the colour, too, is richer than we find in the older one.—S.

Crocosmia imperialis.—The charming orange-scarlet flowers of this fine hardy bulbous plant are just now very attractive, the spikes attaining a height of over 3 feet and much branched. It may be planted in autumn with perfect safety, all that is required being to place a little fine dry soil of a sandy texture about the bulbs if the soil is inclined to be heavy. The flowers are among the best at this season for arranging in tall vases or branching épergnes.

ORCHIDS.

ODONTOGLOSSUM CITROSMUM.

This beautiful Odontoglossum has always been greatly admired when in bloom. It is a very old Orchid, having been discovered in the early part of the present century, but it was not introduced into this country until 1838. For many years after its introduction Orchid cultivators experienced great difficulty in getting their plants to bloom annually. Even up to the present time some growers do not obtain such satisfactory results as is desirable. In such cases it is always well to try and find out the causes of failure. Without doubt the principal reason why the plants become so refractory, so far as their free flowering is concerned, is because they are very often kept too long in a moist-growing temperature, and not sufficiently matured during their long period of rest. At the present time plants of this distinct species are now in the middle of their growing season, and should be suspended well up to the roof in a Cattleya or Mexican-house temperature where the shading is light, and only used for a few hours during the bright days of summer, and in such a position that plenty of fresh air can reach them through the ventilators. One very important point towards their successful cultivation is that the plants should be placed where a soft current of night air can circulate freely around them. The plants are now growing vigorously, and require an abundant supply of water at the root, but it must be given with discretion. Each time a plant becomes dry the basket should be immersed in a pailful of water, so as to ensure a thorough soaking of the compost; but no more should be afforded until the whole has become properly dry. Each afternoon at closing time it is good practice to lightly dew the foliage overhead with tepid rain-water; especially is this needed when the new bulbs commence to form. Such treatment will enable them to finish up plump and strong. As before mentioned, it is a good plan to open the ventilators near them when finishing up the last thing at night, putting on as much air as outside circumstances will permit. In order to ensure an abundance of bloom at the proper season a great deal depends on the treatment the plants receive while at rest. After the new bulbs are fully completed the plants should be placed in a cool, dry atmosphere, where they will be exposed to full sunshine, and for a few weeks be sparingly watered. By that time the bulbs become hard and solid and no more water will be needed, no matter how much the bulbs shrivel, until the flower-spikes are seen pushing out from the centre of the young growths. Under such severe treatment the pseudo-bulbs invariably shrivel a great deal, but they quickly plump to their normal condition if, when the spikes show, the plants are thoroughly soaked with water and placed under proper growing treatment. Odontoglossum citrosmum, on account of the pendulous habit of the flower-spikes, is best suited to basket culture, and the splendid long spikes are seen to the best advantage when suspended overhead. The best time for root disturbance is about a fortnight after the flowers fade, but as this species makes but comparatively few roots the plants will not need rebasketing annually, but if at any time the compost becomes sour it may with care be picked out and fresh soil substituted. The ordinary Orchid compost—peat and Sphagnum Moss in about equal proportions, mixing it well together—is well suited for the plants to root into. This lovely Odontoglossum may still be classed as a first-rate Orchid, and no collection should be without several or more plants, as at the present time they are comparatively cheap and easily obtainable. W., *B.*

A sweet-scented Orchid (Odontoglossum citrosmum). From a photograph.

Treatment of Orchids (*Amateur Reader*).—Neither (*a*) or (*b*) are Orchids. The former is a Bromeliaceous plant, and the latter a species of Cereus; but we cannot determine the varieties without first seeing the flower of each species. Both will do well in an ordinary greenhouse temperature where they can obtain plenty of sunlight. They should be potted in fibry loam, intermixed with brick rubbish. One important point is not to overdose them with water at any time. You will find no difficulty in getting them to flower if you keep them fairly dry at the root during the resting period. (*C*) is an Epidendrum, a species of Orchid, but the stem and roots sent are dead. If you have any living pieces left, plant them in small, shallow Orchid-pans, with wire handles attached so that they may be suspended to the roof. The pans should be half filled with drainage, using a mixture of peat and Sphagnum Moss for the plant to root in. Grow this plant in an intermediate-house temperature, and afford water at the root only at such times when the compost becomes dry. It may if properly treated do better next year; at least, we sincerely hope so. —W., *B.*

Paphinia cristata.—Though not by any means a showy Orchid, the blossoms of this Paphinia are quaint and interesting, and of a distinct colour. Though the ground colour is whitish, this is so heavily overlaid with chocolate markings that the white is hardly noticeable; the lip chocolate-brown, with a tuft of fine white hairs in front. The spikes appear at the base of the newly-formed pseudo-bulbs, and as a rule carry about three flowers only. This Orchid likes plenty of heat and abundance of atmospheric moisture while growing, and even while at rest it ought not to be dried. The treatment of the roots may, in fact, be somewhat similar to that accorded Lycastes, but they are not quite so strong feeders. An important point is to see that nothing of a sour nature is allowed about the roots, as this is often the trouble with it. The peat and Moss must be renewed often; it will not, as a rule, last in good enough condition for Paphinias longer than two years, and in repotting or basketing great care is necessary to disturb the plants as little as possible. P. cristata should be hung up if convenient close to the roof glass, but it must, nevertheless, be carefully protected from bright sunshine, the foliage being rather thin in texture and easily damaged. It is also subject to the attacks of red-spider, which soon spoil its appearance if allowed to go on unchecked. A moist atmosphere, then, and frequent spongings with clear water are important points to be looked after. It is a widely distributed plant, growing naturally in many parts of South America, and was introduced in 1834.

Stanhopea oculata.—The flowers of this Orchid vary considerably, those of some of the best forms being very showy and worth a place in any collection. A plant in bloom now has two spikes, each bearing five handsome flowers upwards of 5 inches across. The ground colour of the sepals and petals is a clear yellow, and there are many bright purple spots, especially upon the former. The lip is white with crimson spots in the centre, the frontal portion spotted with purple. Being a native of Mexico it requires less heat than most of the other species, and may, in fact, be accommodated with the warmer section of Odontoglots or with the Mexican Lælias. Otherwise the treatment may be similar to that recommended for Stanhopeas generally, but not being quite so robust as some others it must not be allowed quite so much root-run.

Epidendrum cochleatum.—This quaint old species often blooms during this month, and is even at the present day worth a place if this grotesque-looking kind of Orchid is liked. In habit it is not unlike one of the labiata section of Cattleyas, and the flower-spike is produced from a sheath at the apex of the bulb in the same way. This bears several blossoms that vary considerably in colour, but the sepals are usually some tint of greenish-yellow, the outside of the concave lip being reddish-purple, inside white or pale yellow. It is one of the easiest of Orchids to grow, and never fails to bloom profusely, being in this way unlike E. fragrans, a somewhat similar species in appearance, but of different colour. It is a very old species and a native of Trinidad, Jamaica, and Mexico.

Dendrobium chrysanthum.—This pretty species has but one fault and that is the short time the flowers last in good condition—usually only from ten days to a fortnight. They are produced along the newly-formed growth, which often attains a length of from 3 feet to 4 feet. The golden-yellow blossoms with deep maroon eye-like blotches have a very fine appearance, and the fact of their being delicately scented is an additional recommendation. A frequent mistake made with this fine Dendrobe is tying the growths up to stakes, this spoiling the natural habit and giving it a strained and ungainly appearance. Let them hang loosely and naturally and the growth will be stronger and the beauty of the plants greatly enhanced.

Nicotiana affinis.—The most fragrant flower at eventide is this fragrant Tobacco, and large plants about the shrubbery borders assist very materially in brightening their surroundings and producing a welcome fragrance that pervades the air at this season. It is a beautiful plant that gives little or no trouble, and is very useful in the garden.

FERNS.

NEPHROLEPIS.

All the Nephrolepis are very effective, and, with ordinary care, there is little difficulty in having nice healthy young plants. Most of the species are readily increased from the spreading stolons or rhizomes, which will take root, and from which young plants spring up wherever they find suitable material to root into. In most cases it is not necessary to make any special provision for increasing the stock, but where they do not come freely enough a plant may be plunged or planted out in a bed of Cocoa-nut-fibre-refuse. This will ensure an abundant supply of young plants, which may be taken off as soon as they have made two or three fronds. The Nephrolepis should be potted in a light, porous compost. A little peat may be used, but the compost should consist mainly of good fibrous loam, and as the plants do not root deeply it is essential that plenty of drainage should be used. Such sorts as N. Duffi, N. davallioides, and the beautiful N. rufescens tripinnatifida succeed best in rather a high temperature, but the other sorts may be grown in an intermediate-house, and the fronds will be of better substance and more serviceable than when grown in too much heat. Grown in a moist, shady position they will make longer fronds; but in a more exposed position they make better shaped plants, which are more

Nephrolepis Duffi.

useful for decoration and stand exposure much better.

N. rufescens tripinnatifida is one of the handsomest Ferns in cultivation; the beautiful feather-like fronds attain to fully 3 feet or more in length. The side pinnæ are each from 3 inches to 4 inches long. The fronds grow nearly erect, arching over just sufficient to give the plant a graceful appearance. This Fern requires stove treatment, and must be grown on freely from the time the young plants are first started. Young plants should always be growing on to succeed the older ones, for after they get to a certain age they get too dense, and do not develop such fine fronds. This also applies to

N. davallioides furcans, another beautiful variety. There are several distinct forms of this, but none appear to be an advance on the original type.

N. ensifolia, a type which may be recommended where plenty of room can be given, especially for hanging-baskets, for which purpose it is admirably adapted, the long, drooping fronds attaining to fully 6 feet in length.

N. exaltata is one of the best kinds to grow, free, and pleasing in growth. It will succeed well in a warm greenhouse.

N. acuta is supposed to be synonymous with this, but that which we grow as N. acuta is quite distinct. It has rather long fronds, with a smooth, even surface; the stipites are very dark, and the surface of the fronds has a peculiar bluish metallic shade.

N. pectinata is a pretty form, having long, narrow fronds.

N. philippinensis somewhat resembles this, but differs in the pinnæ being recurved and more deeply serrated on the upper edge. The fronds are also of a deeper green. This succeeds better in a cool-house than most of the species.

N. pluma, a deciduous species with very pretty pale green fronds, which grow erect, may be recommended, as also the variety Bausei, which has deeply serrated or, rather, lobed pinnæ.

N. Duffi is a curiously distinct species, with narrow, branching fronds, which are slightly tasselled at the apices. I have never seen fertile fronds of this distinct Fern, even among old plants growing from 2 feet to 3 feet high.

Most of the Nephrolepises vary somewhat in character when raised from spores, and it is probable that some of the so-called species are only variations of the same type. H.

GARDEN PESTS.

Strawberry plants attacked (*T. M.*).—Your Strawberry plants are attacked by the grubs of the Rose-beetle or green Rose-chafer (Cetonia aurata). It is useless to try and kill these grubs with any insecticide, their vitality is so great. I do not know that any experiments have been made with them, but they so much resemble the grubs of their near relative the cockchafer that it is by no means easy to tell them apart, and it has been found that they cannot be killed by any insecticide when in the soil; but a very heavy watering with 1-10th of gas liquor to 9-10ths of water or liquid-manure, or soap-suds, may make them shift their quarters, and digging in flowers of sulphur, soot, or fine ashes, or sand soaked in paraffin-oil, will prevent them passing from one plant to another. Digging them up with a small fork or spud is the best way of getting rid of them. —G. S. S.

Oak-tree dying (*G.*).—Your Oak-tree is attacked by the English Oak Phylloxera (Phylloxera punctata). When the leaves fall we should rake them up and burn them. As soon as the insect makes its appearance next year spray the leaves well with ½ lb. of soft-soap, the extract from ¾ lb. of Quassia-chips, and 10 gallons of water; or 1 pint of soft-soap, 2 quarts of paraffin-oil, mixed together in 1 quart of boiling water very thoroughly, and added to 10 gallons of water; or spray with ½ oz. of Paris-green or London-purple, kept well mixed in 10 gallons of water. These mixtures must be applied to the undersides of the leaves. This insect belongs to the same genus as the Phylloxera of the Vine.

Caterpillars on Cabbage (*Incline*).—Picking the caterpillars off by hand is by far the most effectual means of destroying them, but it is a tedious method. Syringing with ½ lb. of soft-soap, the extract from ½ lb. of Quassia-chips, well mixed in 7 gallons of water, is useful. Your cultivation of the plants was not in fault. Moths or butterflies—I cannot say which without seeing the caterpillars—have laid their eggs on the Cabbages, and have hatched into caterpillars. The insects on your Celery you may kill by syringing with the mixture just mentioned. They certainly are not harmless to the Celery.—G. S. S.

Rose-leaves curled (*Linda*).—The Rose-leaves you sent were so flattened and crushed one upon another in the post that when they reached me it was impossible to tell whether they had ever been curled. I cannot find any trace of an insect, but the leaves look as if they were beginning to show signs of mildew. This would account for a certain amount of curl.—G. S. S.

Pear and Cherry-trees attacked (*Violet*).—Your Pear-trees and Cherry-trees are attacked by the grubs of the Pear saw-fly (Eriocampa adumbrata). The grubs are generally known as "slug-worms," on account of their resemblance to small slugs. This insect will not attack your other trees. If you cut down the tree which you say is dying, you can put in a Rose or Clematis with perfect safety. One great difficulty in using an insecticide to kill this insect is the fear of making the fruit taste of it. Strong soot and lime-water, or 1¼ lb. of soft-soap, and the juice from 3 oz. of Tobacco, mixed in 5 gallons of water, will kill the grubs if applied twice, with an interval of one day. Though your Cherry-tree may be a large one the grubs are probably on the lower branches. The grubs leave the trees as soon as they are full grown and make their chrysalides in the ground. A layer of gas-lime, lime, or sand soaked in paraffin-oil, laid on the surface, would probably kill the grubs when they reached the ground in order to bury themselves. After a bad attack it is a good plan to remove the earth from under the trees to the depth of about 3 inches, and to burn or bury it deeply, so as to kill all the chrysalides. Any time during the winter will do for this operation.

Fly for name (*E.*).—The fly you sent is a specimen of the hoverer or hovering-fly (Syrphus pyrastri), a most beneficial insect in gardens, as their grubs kill enormous numbers of green-fly.—G. S. S.

Maggots (*Semper*).—The creatures you sent are "rat-tailed maggots," the grubs of one of the drone-flies, belonging to the genus Eristalis. They are perfectly harmless, and so are the flies, to vegetation. They usually live in mud or water, so how they came on to the dry earth that you found them in I cannot imagine, unless you watered the Tomatoes with water out of a tank.—G. S. S.

Slugs in garden.—It may interest your correspondent, "Mary" (1376), of last week, to hear that in my garden here, which is enclosed in walls, and is about 100 feet wide by 200 feet long, more than half of which is taken up by lawn and greenhouses, I have caught over 9,200 slugs and snails since May, and this is independent of any killed by the gardener.—C. H. A.

Zinnias dying suddenly (*E. E. J.*).—We cannot find that your Zinnias are attacked in any way by insects. They are infested by a fungus on the stems, but whether the fungus is the cause of the death of the plants or only attacked them when in a moribund condition we cannot say. Probably death is due to fungus.

Apple-leaves eaten (*R. Waller*).—The insects attacking your Apple-tree are the caterpillars of the Eyed Hawk-moth (Smerinthus ocellatus). It is by no means an uncommon insect on Apple-trees, but they are not often in sufficient abundance to do much mischief. The best way of getting rid of them is by picking them off by hand.

Caterpillar (*E. Ward*).—The insect you send is the caterpillar of the puss-moth (Cerura vinula), a common insect on Poplars. It is now apparently preparing to become a chrysalis. We cannot return specimens, but it is not at all rare.

Hawk-eyed moth caterpillars.—Would "Morris," who sent these lately, kindly send his address?

Browallia (Streptosolen) Jamesoni.—It would perhaps be difficult to name a plant of shrubby habit suited to the cool greenhouse that could equal this in its great freedom of flowering or the rich profusion with which its blossoms are produced. In the brilliant orange-red masses of flowers it is also one of the most striking of summer-flowering plants. Large plants would make a most effective bed. A good example of what may be accomplished in about a year with this plant was on view at the last Temple show, when Mr. Bennett Poë exhibited a group of it in large pots, each plant fully 3 feet high and freely flowered. The only precautions needed are firm potting, to thereby ensure short, firm-jointed growth, and one or two timely stoppings in the early stages, after which the plant should have its own way. When well exposed in the open the flowers are more richly coloured than when under glass.

FUCHSIAS FROM SEED.

Even if no particularly striking results in the way of new varieties occur in raising Fuchsias from seed, still it is work worth doing, because the peculiar enjoyment obtained from growing and blooming seedling flowers is of such a nature as to constitute what I think may be safely termed one of the chief pleasures of gardening. Some care is necessary in order to secure as far as possible good varieties of the Fuchsia from seed, and not only should good varieties be selected for seeding purposes, but these must be fertilised, so as to obtain in the foregoing the certain qualifications or characteristics of a desired order. Having, therefore, selected the plants from which it is intended to take seed, they should be carefully watched as the flowers expand, and all imperfect blossoms removed, those alone being retained which are quite true to character. From the flower intended to bear seed all the anthers should be cut away; then, by means of a fine camel-hair brush, the pollen should be collected from the flowers to be used for fertilising purposes and laid on the stigma of the parent, tying a piece of thread or some such mark about the flowers to identify those which have been fertilised. A bag made of thin muslin or some such material should be used to cover the fertilised flowers, or bees and other insects will spoil the work of the operator. The seed will ripen just as well outdoors as indoors, but unless means be taken to protect the seed-pods the birds are apt to take them. Like other fruits, the seed-pods of the Fuchsia will fall off the branches when ripe—sometimes before they are ripe—and I remember it was the practice of a good raiser of Fuchsias when a pod fell immediately to press it in the palm of his hand and carefully pick all the seeds out of the pulp with the point of a penknife, and then spread them out on a clean sheet of writing-paper, leaving each seed at a little distance apart from its fellows. Then for an hour or two the seeds were placed on a shelf in the sun, and covered with a piece of glass to keep them from being blown away. After they were dry the seeds were placed in a wooden or paper box, with a little dry silver-sand about them to preserve them till wanted for sowing. It is not difficult on the whole to obtain Fuchsia-seed, but it is much better to sow twenty seeds obtained from carefully-fertilised flowers than three hundred selected indiscriminately. The time to sow the seed will vary according to the means of protection at command; if it be a mild, open winter the beginning of January is a good time, or if then the weather be wintry and ungenial it may be delayed until February; but, generally speaking, the earlier in the year it is sown the better. The seed vegetates best when grown in a propagating-house, heated on the tank system, using for the seed shallow pans filled with a light well-drained soil, which should be flattened down to a smooth surface about ¾ inch from the top of the pan, and on this level surface the seeds require to be placed thinly, and these should then be covered with ½ inch thickness of fine light soil—sifted leaf-mould and silver-sand will answer admirably. The pans should then be plunged in the hot-bed up to their rims, after which water should be applied with a fine syringe to slightly moisten the surface of the soil. Those who have not a propagating-house should delay the sowing for a few weeks until they have a frame heated by manure, plunging the seed-pans in the same way; but in the case of a manure-bed great care is required in covering at night, in giving air, etc., for if there has been any carelessness in making the bed, or the pans containing seeds have been put into the frame before the bed was properly ready, the seeds will germinate quickly, but will damp off as fast as they appear above the surface of the soil in which they are sown. For three weeks or a month, under the most favourable conditions, the best plan is to keep the surface of the seed-pans just moist, not wet, and frequent examinations should be made to see that no insect pests are at them. When the plants have put forth a second pair of leaves above the seed-leaves the strongest should be pricked out into small 60-sized pots, using a light compost for the roots. This gives room for the plants remaining in the seed-pans to grow, and some Fuchsia cultivators are of opinion that this is the time when the seedlings least feel the check of removal. When the seedlings are potted the pots should be plunged in a moist bed, as it tends to keep the roots damp and dispenses with the necessity of giving much water overhead, from the excessive use of which the young plants frequently damp off at the surface of the soil. Heat, moisture, and shade are required at this stage of the young seedlings' growth, and on no account should they be allowed to receive a check, for their early and successful blooming entirely depends upon their treatment at this stage. As the plants make growth the leading shoot should be neatly tied to a stake, and when the small pots become filled with roots they should be shifted into 48-sized pots, and in them the plants may be flowered. There is a wonderful charm in watching the opening blossoms of seedling plants, even if they do not exhibit qualities above mediocrity, but they frequently show characteristics of much value, particularly if due care has been taken to select proper parents. Seedling Fuchsias, if of a good strain, generally grow freely and flower profusely.

H. B.

CACTUS DAHLIAS.

Since the advent of the Cactus Dahlia—as represented by D. Juarezi from Mexico—there have been most distinct advances from point of colour, and also in the habit of growth. Juarezi, which is the undoubted type of a good Cactus Dahlia as a flower, is not of itself a good habited plant by reason of its excessive growth, this predisposing it to hide its flowers in the dense array of foliage; thus when grown under the ordinary condition of Dahlias it does not produce a good display. Juarezi is still grown by those who exhibit, and also by others who have succeeded in overcoming in some measure its mode of growth.

The true form of the Cactus Dahlia.

To succeed well with Cactus Dahlias the soil should not be heavily manured. Too much manure will be conducive to a rank growth, such as will not in most cases result in a profusion of flowers. A moderate amount of manure only should be used, and this had better be well incorporated with the soil during the winter or early spring months. It is possible to manure too heavily in the cultivation of both show and fancy Dahlias, but it will not often result in such excessive growth as in the case of the Cactus section. Full exposure to the sun is a decided advantage in securing a sturdy habit, whilst at the same time the plants should be grown at a good distance apart. If grown in lines and staked in the usual manner, 5 feet from plant to plant is quite close enough; this will allow of none too much room for proper development. Those who grow for exhibition allow as much as 6 feet apart each way when in beds. For ordinary uses this is too much, as it leaves the ground between each plant quite bare for some considerable time.

Personally, I much prefer to grow these and the decorative Dahlias, which must not be confounded with the true Cactus varieties, as fence plants, or by training the growth flatwise, as with Raspberry-canes in rows. I find this is a much better plan for displaying the flowers, as it is also for thinning out any superfluous shoots. A temporary fence for the plants can be easily provided by allowing one stake to each plant as a start, afterwards inserting four more between each one in either one or the other direction, preferably so as to allow the intervening alleys to run as nearly as possible north and south. Tarred string fixed throughout in sufficient quantity to allow the tying to be done easily should be provided, after which the tying is an easy operation, the fan shape of training being adopted so as to cover all possible space. Wire fences have, however, all in their favour for this method of cultivation, no provision in the way of stakes being needed, whilst in such positions there will be an abundance of light and air playing on the plants from both sides to their distinct advantage. Thus secured, too, there is no danger, or but little injury, from high winds to either foliage or flowers. An excellent effect is produced by training in this way; even Juarezi itself is seen to much better advantage.

Until well established and growing freely watering must be closely attended to, and afterwards, whenever the weather is dry. To starve the plants in withholding water will not give good results. A mulching is beneficial, most decidedly, upon light soils, being, too, a means of saving in watering. When the first flowers begin to show colour a moderate application of fish-guano will be a great assistance—not too strong a dose, or its effects will tend towards too leafy a growth. Thinning the shoots, more especially superfluous shoots, from the base or centre of each plant should be carried out freely and without fear, whilst the lateral buds should also be removed when extra large flowers are needed, as for exhibition.

Propagation is the same as for other Dahlias, cuttings being preferable to the old stools in nearly every instance (Mrs. Peart is an exception, in which old stools yield the best blooms). As in all other Dahlias, the earwig is the most troublesome insect to contend with, the usual modes of capture being adopted. I have noted in the after treatment that when well rooted in small pots (singly, of course) a shift into 6-inch pots is a decided boon, so as to secure a strong plant by the end of May, when planting out is usually safe after gradually hardening the plants off in cold-frames.

I alluded at the commencement of this article to the improvement effected both in the habit of growth and in the varied colours now to be seen.

The habit of growth is a decided improvement upon that of the old Juarezi, and it is earnestly hoped that we shall soon have all shades of colours represented by the splendid habit of Matchless and of Mrs. Barnes, both of which throw their flowers well above their foliage. In point of colour nothing better as a pure soft yellow could be desired than as it is seen in Lady Penzance, or the beautiful combination of light pink and white as in Delicata. The many pleasing shades now to be found leave scarcely anything to be desired. Growers should now direct their attention towards securing the better habit rather than anything else. Before passing away from the Cactus Dahlia in its now accepted form as distinct from the decorative Dahlia, with flat petals or florets, it should be noted that there are several of the latter that are well worth growing, and for which the same cultivation is applicable. J.

PHLOXES.

For adding colour to the hardy flower border the Perennial Phloxes are unsurpassed by any other class of plants in bloom at the present time. They are useful and very accommodating plants, for there is scarcely a garden in which they will not grow freely and flower abundantly. Their flowering season covers a good part of the summer, and many varieties are to be seen in bloom in the early autumn. Of late years there has been marked improvement made in the habit, freedom of flowering, size, and colour of the flowers. For these additional good qualities we are mainly indebted to that eminent hybridist, M. Lemoine, of Nancy. Phloxes may also be grown in pots for the decoration of the conservatory, as they come into bloom before the Chrysanthemum, and if judiciously blended with foliage plants the effect produced by their bold panicles of flowers of rich and varied colours is very pleasing. With the exception of very dry, sandy soil they are not at all fastidious, but they do best in moist, rich, and well-drained ground. It is not advisable to plant them in a position too much exposed to the sun, because if the summer happens to be very hot and dry the flowers are apt to burn, the colours run, and consequently fade early. Planted in a fairly shady position they will not only grow luxuriantly but flower profusely, besides continuing in bloom much longer than when exposed to the full blaze of the sun. Being surface-rooting plants, one or two good mulchings of manure early in the summer should be given, as they are greedy feeders. By so doing strength will be added to the plants and size and richness of colour to the flowers. In dry weather frequent soakings of water should be given, and if manure water is available so much the better. If the soil is at all dry it is almost impossible to give too much water. When the plants have grown about a foot in height they should be neatly staked to prevent the wind from breaking them off, as some of the varieties carry such immense heads of bloom as to almost break the plants down. Half-a-dozen shoots or so will be ample for each plant to carry, as the flowers will be of finer quality than would be the case were a dozen shoots permitted to remain. Each shoot should be allowed sufficient head-room to show its true character.

It is advisable to raise plants from cuttings yearly as the flowers are very much superior to those produced by old plants. Phloxes delight in regular transplanting. It is a mistake to allow them to occupy the same ground undisturbed for more than three, or at most four, years, as they degenerate if allowed to remain in the same soil for a longer period. The plants should be taken up and divided and replanted in other parts of the garden, but the best results are obtained from cuttings taken off about the end of July or early in August, and dibbled into a bed of light soil and covered with handlights or frames. They should be sprinkled overhead with a fine-rose can occasionally and mats thrown over the glass to protect them from the sun. It is a common practice with some growers to lift the plants from the open ground in spring and place them in a brisk heat to encourage young fresh growths, which, when they are a couple of inches in length, are taken off and inserted either singly in small thumb-pots or put round the sides of 4-inch pots. When rooted, each one should be potted into small sixties, and hardened off ready for planting out in showery weather towards the end of April. Plants are very readily raised from seed sown in cold-frames soon after it is ripe. If the seed is kept until spring it will be much safer to sow it in heat. With the aid of seedlings the floral display is greatly prolonged, as it is usual for them to commence flowering just as the plants raised from cuttings are getting over.

The following list is a selection, rather than a collection, of some of the best varieties in cultivation. It also includes some of M. Lemoine's latest improvements. Avalanche is a grand variety, with large white flowers and lemon eye; the habit is dwarf, compact, and very bushy. Sylphide is equally fine. The spikes are large, individual flowers of much substance, white, touched with pink. Eclaireur is magnificent; its large flowers are borne on huge spikes, colour purple-carmine, lighter centre; tall and vigorous grower. Etna, orange-scarlet, with deep maroon centre, tall and handsome. Another variety in the same way as Etna, but brighter in colour, is one of Lemoine's latest triumphs named Coquilicot. Its panicles are exceptionally large, the flowers broad, colour bright red, shaded with orange-scarlet, centre purple. This is unquestionably the richest-coloured Phlox yet raised; the habit, too, is first-rate. Belvedere is very dwarf and very free-flowering, colour rosy-carmine, deeper eye. Amongst dark purple-coloured varieties Pluton is perhaps the best. W. Robinson, rosy-salmon, darker eye; the spikes are freely branched, and the flowers of more than average size; tall and vigorous. Amongst rose-coloured varieties Berlioz is a gem; it is of dwarf habit and very free-flowering. Aurore is of a pleasing shade of salmon, with crimson centre. The huge panicles carry large flowers of good shape; it is a vigorous and tall grower. Eugenie Danzinvilliers is very distinct and exceptionally free-flowering, colour rosy-lilac, with a large white eye. Flambeau is a noble variety with large massive, fiery-scarlet flowers, crimson eye. The Queen is one of the best of the pure white-flowered section. The spikes are large and the flowers possessed of much substance. Pont Biquet is well deserving of a place in any collection of hardy flowers. It produces very freely immense spikes of deep purplish-crimson flowers; vigorous grower. Evenment is a very attractive variety with bright salmon-coloured flowers. Beranger is a dwarf and very free-flowering variety, the huge trusses of flowers being of a lovely shade of salmon-pink, with a deeper centre. Stanley is a kind that rarely exceeds 18 inches in height; it is very bushy and free-flowering; colour violet and rose. Le Vengeur is a vigorous grower, and produces fine trusses of rose-pink flowers. As a late-flowering variety Claudot deserves a place. The moderate-sized flowers are borne on strong, almost erect panicles; colour pink, deeper eye; stands drought well. Beatrice is a charming, free-flowering variety of dwarf habit; flowers large, deep rose, white centre. William Ramsay is conspicuous for its enormous spikes of deep violet-coloured flowers. Ajax.

CHRYSANTHEMUMS.

EARLY CHRYSANTHEMUMS.

Already there are several pretty varieties of the early Chrysanthemums developing their flowers. Early Blush is a very old variety, and during the cooler weather of late its pretty little rosy-blush pompon blossoms have been welcome. Flora is another of the very early pompons. Its golden-yellow flowers, freely produced on a dwarf and bushy habit, render it invaluable for market, for decorations, or in the hardy flower border. A pretty plant is Little Bob, wrongly named by some growers Scarlet Gem. The colour of the blossoms is best described as bright crimson-brown, and when at its best is effective. The flowers are rather small, but freely developed, and the plant is very dwarf and bushy. A few plants of this variety massed together make a handsome clump. Blushing Bride, and its pretty bronze sport, called Bronze Bride, the former a pleasing blush-lilac flower, are two pompons of large size. Two distinct displays are given by these plants, the growths from the base making a pretty picture after the whole stem has been removed. The first of the Japanese to bloom this season was Mme. Marie Masse. This is indeed a remarkable plant, and typical of what a border plant should be. The flowers are large, the colour being a pleasing shade of lilac-mauve. It is one of the most free-flowering sorts grown. The habit is dwarf and branching. M. Dupois is a small yellow Japanese sort, which has commenced to flower, and promises to keep up a fine show. The habit is not so good as the last-named, yet sufficiently good to appreciate. Harvest Home is very effective; its flowers are of crimson and golden-yellow colours. All interested in these plants should secure it. R.

Lifting Chrysanthemums to flower in unheated greenhouse (*Amateur*).—These are grown in immense quantities in the open for market, and when the buds are well advanced and before they begin to show colour the plants are lifted and replanted in large greenhouses, with a little fire-heat to dispel damp and keep the frost out. Your proposal to stand the plants on the ground and sprinkle the soil over the roots is hardly likely to succeed. You are quite right to cut round the roots before lifting the plants, and it is a good plan to cut one side of the plant one day, and after a few days have elapsed to cut the other side. In this way the check experienced is not so much felt. When selecting varieties for this purpose it is best to select those of a robust habit of growth, such as the well-known Source d'Or, for instance.

When to commence feeding Chrysanthemums (*Anxious*). — As your plants received their final potting during the proper recognised period they should long since have made plenty of roots, and consequently used up much of the good properties of the soil. In addition to this important fact, the buds of the majority of the plants should by this time be retained, and, if you are to be successful in the end, you should commence to feed your plants when the buds are seen to be swelling rapidly. A word of caution is very necessary. Don't be too liberal in your food supply. Commence first with weak doses—say, twice a week—increasing the quality as the weeks go by. The food may be varied. Where animal manures can be obtained by all means use them, as they are comparatively cheap, and a variety may be thus supplied. Cow-manure, horse-manure, and sheep-manure are each safe foods to use if placed in a sack and allowed to soak in a tank or tub of water; they should be stirred occasionally to effect the distribution of the manurial properties. A certain quantity of this may be placed in each can of clear water and well stirred round before using. Never water with this solution when it is darker in colour than pale brandy. If you have not the convenience for storing animal manures use any of the patent manures that are advertised, but never increase the quantity beyond what is there laid down. Peruvian guano is an excellent food for Chrysanthemums, but half an ounce of this to a gallon of water will be quite enough. An occasional watering with soot-water is highly beneficial.

Pansy v. Viola (*E. Jerrois*).—You ask how can you tell a Pansy from a Viola? This is a question often asked by many gardeners, both amateur and professional. The Latin name Viola is the name of a genus, and this embraces all kinds of Pansies, including fancy, show, German, and French types of the flower. It also includes the more popular continuous flowering plant, the Tufted Pansy, sometimes called Viola. Pansy is the English name for the plant, and the confusion of the terms has arisen through calling the same plant by the names of Pansy and Viola. It is foolish to give the name of the family to one variety. All Pansies are Violas and *vice-versâ*.

Zonal Pelargonium King of the Bedders.—This variety is a distinct acquisition. It is freely used in the beds in front of the Palm-house, Kew, and appears to partake of all the good qualities that go to make a good bedding Zonal Pelargonium. The trusses are of immense size, and the individual pips are large also. The colour may be best described as deep rich crimson. The constitution seems very robust.

TREES AND SHRUBS.

Hedge round kitchen garden (*Nidum* and *Beginner*).—Quick makes a nice and cheap hedge. Myrobalan or Cherry Plum (Prunus Myrobalana) forms a good hedge in less time than the common Thorn. It also grows freely in poor soils. The oval-leaved Privet grows quickly and forms a dense hedge, but it is a hungry plant, and soon impoverishes the soil. Yew, Holly, and American Arbor-vitæ can also be recommended. Hornbeam, common Berberis, Box, and Euonymus are sometimes employed with excellent results.

Trees for avenue (*Nidum*).—The undermentioned trees would answer your purpose admirably. The Lime is one of the very finest avenue trees. It thrives well in nearly all positions. Acer colchicum rubrum is also very fine and deserves wider cultivation. The Plane-tree (Platanus) is very enduring. It is an ornamental tree of the first order, and thrives everywhere. The American Scarlet Oak is very handsome, the leaves turning a rich scarlet and crimson in autumn. The Horse-Chestnut also makes a capital tree for the purpose, especially if the soil is strong. It is very attractive when in flower. Liquidambars, Acacias, and Cedars are first-rate subjects for planting as avenue trees.

Echinacea purpurea. — This showy Cone-flower is among the most desirable and striking of border perennials for late summer. The peculiar colouring of its flower-heads is somewhat scarce among hardy subjects, and for this reason also the plant is worthy of every encouragement. Where it can be afforded from 2 feet to 3 feet of rich sandy loam, this Echinacea will not only develop its best qualities, but will make a most imposing group into the bargain. Unfortunately, it is not so readily increased as are many Cone-flowers, which spread rather freely by rhizomes, and seeds are only sparsely produced at the best, the latter vegetating but very indifferently. But in spring with renewed growth it may be divided with care, and every growth bud that can be severed from its woody rootstock with roots may be relied upon to make a fair-sized plant if put out singly into good soil at once. This method of increase is far better for the safety of the plant than potting, while the after labour is reduced to a minimum.

Tufted Pansy Bridegroom. — Last year this Pansy was much admired, and now, after another season's trial, it stands out as a first-class bedding variety. The blossoms are of medium size and borne freely. The colour of the flowers is quite distinct from any other sort, and may be described as clear pale lavender, with a small yellow eye. One of the most effective flowers at the season.—D. B. C.

Tufted Pansy Mabel.—This is a charming rayless flower of good size, though not overlarge. It is of oval form, bluish-lavender in colour, deepening towards the edges. The centre is white, with a neat yellow eye. The blossoms develop freely enough on good footstalks, while the habit of growth is compact. This plant was raised by Mr. A. J. Rowberry, and received a certificate at the last Viola conference. As a bedding sort it should be in demand.—D. B. C.

Dahlia Flambeau.—This is an effective Dahlia. In the Royal Gardens, Kew, a bed of good size is planted with it. At a distance the effect is very striking, showing how valuable these plants are when placed in their proper position. The flowers are of the brightest crimson, of good size, and the plant is of bushy habit.

Plumbago capensis as a bedding plant.—A circular bed planted with specially-prepared plants of this subject is somewhat unusual in this country. Its lovely pale blue blossoms, freely produced and standing out from among the pale green foliage, form a pleasing contrast to the many other flowering subjects in the garden at this season. A charming little bed of this plant is now in beauty in the Royal Horticultural Society's gardens at Chiswick.

Phlox Coquelicot.—A variety of the herbaceous Phlox, with flowers of the largest size, and in colour the most intense salmon-scarlet. One of the handsomest forms we have seen.

GARDEN WORK.*

Conservatory.

It will soon be time to think about the early bulbs. Roman Hyacinths should be potted and plunged for five or six weeks. Freesias also may be potted now, and allowed to come on quietly outside, but not to be plunged. Early-flowering Chrysanthemums are flowering outside, and if flowering plants in pots are scarce, well-grown plants of Mme. Desgrange and others will be useful. Some of the most effective plants now will be well-grown plants of the beautiful variegated Grass (Eulalia japonica variegata). To make a show in the conservatory the plants should be specimens in 7-inch or larger pots, 4 feet to 5 feet high, and as much through. Smaller plants are useful for grouping with Ferns. Size is only a question of potting on in good stuff in a warm-house (intermediate temperature is the most suitable). If Coleuses are grown, strike a few cuttings now in peat, as young plants keep better than old, and they occupy less room in winter. Tree-Carnations should now be in the flowering-pots. They must have some good loam, and some gritty material mixed with it, if at all heavy. The best loam is usually rather heavy, and for most things will bear an admixture of lighter material. Pot Lilies of the candidum and Harrisi section as soon as they come to hand, and plunge in Cocoa-fibre in cold-frame. Bouvardias should have the last shift into 5-inch or 6-inch pots, according to size. They do best for the present in a pit freely ventilated. Solanums will now be in the pots they are to occupy during the winter. We plant the greater part of our stock out, and always have plenty of berries, but they come rather later than when the plants are kept in pots, but they are just right for the decorations. Arum Lilies for early blooming should now be in the flowering-pots and growing freely. For late blooming they do as well planted out, but there is not much saving in the planting-out system, as if they are to grow freely they must be supplied with water, and the plants usually, when treated liberally, make such a lot of roots that larger pots have to be used, or else the roots reduced. Pot up both Solanums and Arum Lilies by the middle of September.

Stove.

Gloxinias started early are now going out of flower, and should have less water to induce ripening. Very soon the pots may be laid on their sides under the stage in a cool-house, or in a cold-frame with the lights on. Saintpaulias are now coming into flower, and very pretty they are, and will continue blooming all the autumn and early winter. The same treatment given to Gloxinias will suit them, and they are propagated in the same way from seeds and leaf-cuttings. When Allamandas have expanded all their flowers, keep them rather drier at the root to ripen wood. The same remark applies more or less to all the summer-flowering climbers. The winter-flowering plants must, of course, be well nourished. Among the latter, Passiflora princeps is a bright, showy thing, flowering freely in the stove in winter, the flowers being produced in racemes or bunches at the ends of side shoots. During the bright weather we have discontinued fires; but the nights are getting colder, and small fires at night will soon be necessary. Poinsettias should not be allowed to starve in small pots, or the bottom leaves will lose colour and fall off, and the beauty of these plants is to have good foliage down to the pot. As soon as the roots have occupied the soil liquid-manure may be given. Less shade will be required now. A movable blind is best.

Early Peach House.

Keep the leaves green as long as possible by using the hose and very free ventilation, even to the removal of the roof-lights, if possible. Modern houses are not built that way, but where the lights cannot be taken off open the ventilators full width, and leave them open night and day. Young trees making too much wood may have the extremities of the roots carefully lifted and some loam and old mortar-rubbish worked in. Manure should never be used in making Peach-borders. A few crushed bones and a little artificial manure will be useful, but nothing likely to clog up the soil should be given. Rich top-dressings on the surface can be given when the trees are bearing freely and require help. See that the roots are in a moist condition, as a very dusty border is difficult to moisten, and extreme dryness is one of the causes of suckers coming round the main stem.

Grapes Cracking.

Irregular watering is a common cause of cracking. The skins of the berries are tightened by drought, and then comes a flush of rain, or the water-pot is used more freely, and the skins are unable to stand the pressure. Some kinds of Grapes are more liable to crack than others. Madresfield Court and Lady Downes sometimes crack when exposed to drought early in the summer. It is a good plan to let the lateral growth extend a little when the Grapes begin to colour, and ventilate freely night and day.

Cucumbers in Frames.

Keep the growth regulated by frequent pinching. Cut out an old shoot wherever convenient. Top-dress if the roots are close to the surface. Shut up early after sprinkling. To ripen late Melons in frames it may be necessary to put a lining round the beds to infuse a little more warmth into them.

Window Gardening.

Give liquid-manure to window-boxes outside. Prune Myrtles into shape after flowering. Cuttings will root now under handlight or bell-glass. Fuchsias and Tuberous Begonias may have weak liquid-manure to perfect late blooms. Plumbago capensis makes a pretty plant now for the window, trained round stakes or wire trainers.

Outdoor Garden.

No garden is properly furnished without Starworts or Michaelmas Daisies. Drought may reduce their height, but will not check their flowering. Some of the varieties are too late for a small garden, especially in windy districts; but the following are comparatively dwarf sorts, and will give satisfaction: Amellus major, Amellus bessarabicus, ericoides, lævis, longifolius (Lady Trevelyan), turbinellus, Novæ-Angliæ rubra, grandiflorus. The last is a tall, late-flowering variety; very handsome. They are usually kept in pots by the hardy plant nurserymen, and when so obtained can be planted any time; but if purchased out of pots I should prefer spring planting. They are now coming into flower. With us they are flowering earlier this year, and those who would prefer to select their own plants should visit some good hardy plant nursery and see them in flower. "Geranium"-cuttings are scarce in some gardens, and it is not always desirable to cut the beds about so early; but late cuttings will not do so well. Cuttings taken in August and September will strike with certainty, and will be quite safe in a house where the frost is just kept out. My experience is that in making new gardens the arrangements for bedding out, as it is termed, are on a much more limited scale than formerly; but more attention is given to hardy plants, especially those which are bright and showy and that will yield flowers for cutting. The present dry season will afford useful object lessons to intending planters, showing the necessity to thoroughly prepare the sites before planting. In preparing new beds and borders for Roses, Carnations, and herbaceous plants make the soil deep, and manure it well

Fruit Garden.

Many kinds of Pears require gathering and storing for autumn to complete the ripening. Jargonelles can sometimes be eaten off the trees; but, as a rule, they finish better when gathered a few days before they are likely to drop, and placed in a cool room. The same treatment suits nearly all fruits, except Grapes. Melons are best cut a day or two before quite ripe and laid on the shelf in the fruit-room. Peaches, Figs, Apricots, and choice dessert Plums treat in the same way, though both the last named are frequently good off the tree direct. In gathering fruit for travelling it will not do to let it get ripe before packing (Grapes and Pines excepted), or they will be too ripe when they arrive; and soft fruits, such as Peaches, soon spoil. Great care is required in handling Peaches, as every finger-mark, unless the touch is gentle, shows on the delicate fruits. In gathering, let the fingers apply what pressure may be required at the back of the fruit. The practised eye can tell when a Peach or Nectarine is fit to gather by the appearance, without touching it. Discontinue watering Melons when they begin to ripen, and ventilate freely. Cucumbers do well without ventilation, but Melons in a close place would soon be ruined by canker, and the fruit would split and be useless. Where Grapes shank find out the cause and apply the remedy. Root lifting and placing them in fresh soil is generally effective.

Vegetable Garden.

The weather in our district still continues dry, though a few light showers have fallen in places; but when the earth is like a furnace a day's rain is required to make any impression. But when the change comes the progress among green crops will be rapid. I have seen but few white butterflies about, and the Cabbages are cleaner than usual. Artificial manures have not had their full effect this dry season, and will not have now. For vegetable culture a certain proportion of good farm-manure is essential, though certain crops may be helped by other things, including salt and soot. Fowl or poultry-manure, where it can be obtained at a cheap rate, is profitable to use. We have bought it at a poultry-farm near at 30s. per ton, and at this price it pays better than high-priced artificials. Used as a top-dressing and hoed in, the roots soon find it, and the result is seen in the health and vigour of the plants. The autumn seed sowing will pretty well be over now outside. Spinach, Onions, and the last sowing of Turnips should now be in. Lettuces for standing the winter may still be sown; also Endive for late use. As soon as rains come to soften the ground, earth up all green crops. Celery will be earthed up as required. Clear off exhausted crops, and trench vacant land.

E. Hobday.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 30th.—Finished harvesting spring-sown Onions. For the most part they are tied in bunches and hung to the rafters in a cool shed. Repotted Roses intended for forcing in good loam and old manure, with a sprinkling of bone-meal. Planted out Coleworts after Potatoes. Planted a border near wall with Lettuces and Endives. Put in more "Geranium" and other cuttings of bedding plants. Sowed Endive and Bath Cos Lettuces. Thinned Turnips, and hoed between the rows. Sowed Cauliflowers in cold-frame.

August 31st.—Sowed Chervil, Radishes, and Mustard and Cress. Watered Celery twice a week with liquid-manure. We are using it weak—about ½ oz. to the gallon of water. Salted a walk that was rather weedy. It was clean enough in spring, so was not done. Gave liquid-manure to Mushroom-beds under the shade of a wall. They are bearing freely now, and require a good deal of moisture. Gathered early Apples and Pears to ripen in fruit-room.

September 1st.—Finished thinning the young wood of Gooseberries and cuttings. Birds are getting troublesome among the fruit. Netted up several trees of Williams' Bon Chrétien and Marie Louise Pears. Looked round the place to find wasps' nests with a will to destroy them first dark night. They will be taken with squibs made of sulphur and gunpowder, the end lighted and thrust in the hole, the smoke being kept in with a turf. Gas-tar poured down the hole will do.

September 2nd.—Finished planting Strawberries in rows 2 feet apart, and 18 inches apart in the rows. Made all firm about the plants, and mulched with stable-manure between the rows. Planted out Pinks out of handlights. Filled a frame with cuttings of choice evergreens. Gathered seeds of a collection of Hollyhocks and anything else which is choice. Put in a lightful of cuttings of Iberis gibraltarica. Cut down a lot of old "Geraniums," chiefly West Brighton Gem and Henri Jacoby.

September 3rd.—Planted clumps of Wallflowers in border where annuals have ceased to be effective. Put in cuttings of Myrtles and Oleanders. Shortened back leaves of Tomatoes in cool-houses to let in the sunshine. Tied Chrysanthemums. Budded Manetti-stocks. Earthed up more Celery. Sowed East Lothian Stocks, white and

scarlet. Shifted on Poinsettia pulcherrima and pulcherrima alba. Potted rooted cuttings of Dracænas of various kinds.

September 4th.—Moved potted trees from orchard-house, from which the fruit has been gathered, to the open-air to complete the ripening. Pot-Vines, also, have been taken outside in a sunny position. Potted on Gesneras and Saintpaulias. Removed plants from conservatory which have ceased to be effective, and filled with late-flowering Lilies, Tuberoses, Campanula pyramidalis, Cannas, etc. Shifted on seedling Campanulas for next year's blooming. Looked over wall-trees to remove stray shoots which had broken early and nailed in leaders.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1442—**Shady plants for small garden**—What are the best plants to grow on the shady side of a small garden?—T.

1443—**Sibirica Scilla and Crocus.**—Will you kindly tell me if Scilla sibirica and the white Crocus Mont Blanc will flower at the same time if planted in a pan, to be grown in a greenhouse in which the frost is just excluded? Also, if the white Crocus and the Mammoth Yellow one will flower at the same time?—M. A. T.

1444—**Haricot Beans.**—1, Will it answer for me to plant the above on a patch of ground—strong, shallow, stone-rush soil—after Winter Vetches, fed off by sheep at the end of May or beginning of June? 2, When will Haricot Beans thus planted be ripe? 3, The probable yield on the eighth of an acre? 4, Probable selling price per peck? 5, Would Haricot Beans be injurious to give animals as food? 6, What are the disadvantages of them, as I do not think they are generally planted?—Young Market Gardener.

1445—**Wasp-destroyer.**—Could you inform me through your paper of any firm that could supply me with a wasp-"destroyer" after the following directions? I once had one, and would like to have another of the same. It was made of strong tin, after the style of a watering-can, with a long pipe. It was enclosed all round. It had a handle at the side which turned a fan inside. It had a receiver at the top with a lid; this was for Tobacco-paper and sulphur. By turning the handle at the side it sent the fumes out through the pipe into the wasps' holes. It is a very old sort, but I think the best of the kind I have seen.—An Inquirer.

1446—**Plants for pool-side.**—I have in my garden a fair-sized pool of water supplied from rain-water drain and a fountain (hard water). The pool is half filled with weeds and white and yellow Water Lilies. The sides are banked up with stones, and extend 1 foot above level of water. I want a variety of spring and summer-flowering plants (perennials) to grow between and over the stones—not too large—such as King cups, etc. And is there not a perennial Forget-me-not? I should also like one or two really fine flowering plants to grow in the centre of the pool-water—2 feet to 3 feet deep. Please suggest, and state whether I shall obtain seeds or plants?—Nil Desperandum.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1447—**Ants on Peach trees** (*W. G. S.*)—Place a circle of sawdust at base of the trees a few inches from stem, and saturate twice a week with petroleum.

1448—**Tomato diseased** (*F. Hawkins*). — Your plants are suffering from "spot" Pick off all bad fruits, dress the plants with sulphur, and give more air. Keep the house drier.

1449—**Cannas from seed** (*Amateur*).—They may flower this season yet, as they are growing so well. Your treatment appears to have been so correct that we really cannot give a definite reason for their not blooming.

1450—**Treatment of Grapes** (*Reader*).—Remove all second-crop bunches of fruit, and shorten the laterals back to one leaf, thus admitting light to the side shoots, this aiding the plumping up of the buds for next season's crop.

1451—**Planting cordon fruit-trees** (*E. P. S.*). —Why not stretch single wires, 9 inches apart, to train the top of the cordon trees to? This would answer just as well as the wire-netting, and look better in winter, and would be easier fixed.

1452—**Treatment of soil** (*Incline*).—A good idea; but keep the manure near the surface. It will then give the whole of its soluble properties to the roots, whereas, if placed deeply now much of this would be washed down before the roots could absorb it.

1453—**Growth on Pelargoniums** (*E. C. Kenny*). —We can give you no reason for this. It is merely one of the freaks of Nature, and as the plant is otherwise doing well, there is not much danger of harm accruing from a small quantity of this abortive growth.

1454—**Using Pine-pit** (*Devon*).—You could grow Melons, Cucumbers, or Tomatoes. The latter would be the most profitable crop. Flowers would succeed (say Gardenias) planted out in the bed with Stephanotis, trained under the roof, if access is had to the pit by a door at the back.

1455—**Propagating Petunias and Verbenas** (*Sweet Pea*).—Both Petunias and Verbenas are easily rooted from cuttings. See our issues for March 13 and 27, where illustrated notes are given. Remove Chrysanthemums to the house by the end of September. Your heat will be ample.

1456—**Daffodils in Scotland** (*W. C. S.*).—We see no reason why the Daffodils you name should not succeed in Scotland, especially if growing in sandy soil, with manure liberally added. If the soil is at all retentive, trench it 18 inches deep, and plant each bulb 4 inches deep in October in sand.

1457—**Cucumbers dying** (*L. H. Powell*).—If the plants are healthy the cause of the fruit dying is too much moisture at the roots, and too heavy a crop. Withhold the water supply for ten days, except syringing the plants, and thin the fruit to one at a joint. If they do not improve, search the soil for grubs about the roots.

1458—**Tomatoes not colouring well** (*W. C. S.*). —The want of regular colouring in the Tomatoes is owing to a check the plants received at some stage of their growth. Most likely a period of dull, sunless weather, combined with a heavy crop. At such times of unfavourable weather do not give stimulants quite so freely; it has the effect of gorging the plants.

1459—**Plants in cold-pit** (*C. D. O. Hutchins*).—We are doubtful about your success with Verbenas. Could you not give them the additional help of a hand-glass, or fix up a portion of the frame warmer, such as the heat from manure, during severe weather? We saw several Verbenas last spring that had stood in the open all winter; but they are far from safe, even in a cold-frame.

1460—**Planting Daffodils** (*A. Morrison*).—The Narcissi best suited for planting as you require would be P. R. Barr, Horsfieldi, Emperor, Empress, grandis, Sir Watkin, J. B. Camm, Dean Herbert, James Walker, Barri conspicuus, Portia, Michael Foster, Gwyther, Princess Mary, Queen Bess, Stella, M. Magdaline de Graaf, pulchellus, Nelsoni major, and poeticus ornatus.—Mrs. Robert Jocelyn.

1461—**Treatment of Madonna Lilies** (*Christie*). —The bulbs had better now be surfaced with soil, covering them to the depth of ½ inch. Next year, when the Lilies have finished blooming and before the stems have died down, take up, separate the bulbs, and replant at a depth of 4 inches. It is advisable to lift the bulbs before the stems have died down, as new roots are emitted almost immediately after flowering.—S. W. F.

1462—**Forcing Daffodils for market** (*W. C. S.*). —Daffodils would succeed in your Tomato-house. You ought to plant in November; December is late. The best varieties are Old Double Daffodil, poeticus ornatus, Horsfieldi, princeps, and Empress. The three last named are rather expensive, but the flowers sell better than the common sorts. The treatment is simple. Plant the bulbs in the ordinary soil, 9 inches apart. Good bulbs will give two and three blooms.

1463—**Peach-shoots** (*B*).—The young shoots of the Peach-tree have been attacked with black-fly, and now the older leaves are infested with red-spider. Both have weakened the trees, preventing the proper swelling of the fruit. The former ought to have been got rid of by dusting with Tobacco-powder at first, or dipping in Tobacco-water; the latter prevented by abundance of moisture at the root, and by vigorous syringing of the foliage when the first signs were visible.

1464—**Treatment of Lilies after flowering** (*M. H. Bell*).—Stand the pots out-of-doors after flowering, and withhold water gradually to assist the maturation of the bulbs in which the nutriment is stored for next year's crop of blossoms. When the leaves and stems turn yellow lay the pots on their sides to prevent the soil getting moisture. When the stems are quite ripe cut them down, and place the pots in a cold-frame. About November repot the bulbs, shaking off some of the old soil.

1465—**Fumigating with brown paper** (*O. E. Downing*).—Fumigation is often very injurious to Ferns. You should have used the prepared Tobacco-paper as supplied by all florists. Get a ninepenny sheet of "McDougall's," and you will have full instructions regarding quantity, etc. A gentle syringe with tepid water would be a safer method of attacking fly upon most Ferns, but you give us no idea of the varieties out of this immense family or group, so we can scarcely give more definite instructions.

1466—**Plants for south border** (*Christie*).—Rudbeckia Newmani, Japanese Anemones, Perennial Sunflowers, Montbretias, Chrysanthemum maximum, Pyrethrum uliginosum, Gaillardias, Campanula pyramidalis, and some of the Michaelmas Daisies, such as Harpur-Crewe, Archer Hind, diffusus horizontalis, and ericoides, as well as Golden Rod (Solidago ambigua), should make a show, though it is not to be expected that they will in a dry border reach the height and vigour they would attain in a moister situation.—S. W. F.

1467—**Treatment of lawn** (*Sand*).—Dress with loam each autumn and early spring, giving a laye rofabout an inch each time. It is a bad position for a lawn, but if you gradually supply more loam, and this of as stiff a nature as you can procure, avoiding the use of such drying manures as soot, you will soon have a permanent lawn. Apply in rather a fine condition, and dredge as soon as dry after a frost. Nitrate of soda, in moderation, would be a good artificial manure to use, but fresh loam, especially if saturated with stable or other drainage, should be ample.

1468—**Creepers for wall** (*Indian*).—Any of the following plants can be recommended for planting against a wall: Berberidopsis corallina is a very beautiful free-flowering shrub. Passiflora Constance Elliot is hardy and bears distinct and handsome ivory-white, sweet-scented flowers. The white and red forms of Lapageria would be found to answer, especially if the stems and roots are slightly protected during the winter. Cissus antarctica, Honeysuckles, Jasminums, Akebia quinata, Ceanothus, Fremontia californica, and Bignonias would also flourish.

1469—**Unsatisfactory lawn** (*C. C.*).—You started badly. The drainage was excessive for so near the surface, and lawn Grass needs quite a foot of good soil, instead of 3 inches only. Why use such indifferent turf? The fact of its being bad should have prevented its use, except as a layer over the ashes, covering this with good soil to a depth of 6 inches or 9 inches. Yarrow is a terrible weed upon lawns. Turn the sods over and cover with fresh loam and decayed vegetable refuse, sowing a good lawn mixture as soon as possible. Take care in removing all roots of Dock, Sorrell, Yarrow, etc.

1470—**Disqualifying an exhibit** (*H. Be*).—You are certainly in the wrong. The prize was evidently intended only for cottagers, not gardeners in any sense of the word. A railway porter, for instance, occupying a cottage would be entitled to compete. You were a cottager, it is true, but your calling is that of a gardener which therefore places you out of the running. The reason for framing the schedule thus is obvious; it is simply to make the competition as fair as possible. You would be supposed to have more knowledge about flowers, and other competitors would be at a disadvantage.

1471—**Best black Grape for show** (*Amateur* and *Subscriber*).—If the black Grape you require is to grow in the same house as Muscat of Alexandria we should recommend Madresfield Court. It is not a good plan to grow other varieties with the former. Far better give it a house by itself, as the treatment required is different to that of other varieties. If you want a good black Grape to grow elsewhere, Black Hamburgh is the best, either for home consumption or for profit; but it does not succeed along with Muscat of Alexandria. From your question it is difficult to say what your requirements are regarding the kind of vinery, and for the purpose which it is required, also. If you state more definitely what you require we will endeavour to assist you.

1472—**Sizes of exhibition-boards for Asters, Dahlias, and Chrysanthemums** (*Handicapped*). —The National Chrysanthemum Society have the following rule regarding the size of boards for exhibiting Chrysanthemums for the respective incurved and Japanese blooms as under: For twelve blooms, incurved, 24 inches long and 18 inches wide, with holes 6 inches apart from centre to centre, to stand 6 inches high at back and 3 inches in front. This size would suit the requirements of Dahlias and Asters. For Japanese Chrysanthemums a board for twelve blooms should be as follows: 23 inches long by 21 inches wide; holes 7 inches apart from centre to centre; height at back to be 8 inches, and in front 4 inches. All stands should be painted green.

1473—**Quick-growing Virginian Creeper.**—Which is the best sort of Ampelopsis to grow fast up a house at Brighton, and turn red in the autumn?—T.

*** *You cannot do better than grow a variety called muralis, which is very quick in growth.*

1474—**Destroying woodlice.**—I should like to know what will destroy woodlice, as they are very numerous in my cold-frame? They are destroying all my fruit as it is forming.—J. R. T. G.

*** *Lay down a few pieces of dry sacking or similar material. The insects will shelter beneath this, and may be readily caught each morning.*

1475—**Early vegetables in cold greenhouse.** —Can early crops of Potatoes, Peas, Beans, Tomatoes, etc., be grown upon the ground with a greenhouse erected over, no heat being used? I have noticed such structures in the Channel Islands, and such crops being grown; but there is much difference between those islands and my locality—Cheshire I should welcome information on above query, and also as to the proper construction of such a greenhouse. I believe the roof should slope almost to the ground. Would not Chrysanthemums do well in such a structure?—R. C.

*** *Although such structures are an undoubted help to early crops, the great uncertainty of our climate and coldness of soil until the summer is well advanced is so marked, that we cannot predict much success—certainly not sufficient to warrant the expense. The houses are made upon rollers or wheels, working from one square to another upon rails.*

1476—**Border Carnations.**—I am fond of gardening, but cannot afford it all for pleasure, so sell flowers to pay expenses. Now, I want some Carnations to be hardy for borders, free flowering, for cutting, non-bursters, and tidy growers, not straggling all over place. Kindly tell me of six best for an amateur? Would it pay best to get some good seed, or buy plants? I have some fine Margaret Carnations. Must they be raised from seed, or will cuttings do as well or better, so as to keep good sorts true? I shall be obliged if you will give me the benefit of your advice.—Romalcom.

*** *Raise the Margaret Carnations from seed each year. If you grow the following six Carnations, and layer each year as described in our issue for July 24, you will have variety and quantity of blossoms: Ruby Castle, Ketton Rose, Reynolds Hole, Mephisto, Lady Wantage, and Kelso Abbey.*

1477—**Storing turf.**—I am storing a quantity of turf to rot for potting. Would you advise me to put a quantity of hen-manure and night soil to rot along with it?—Beginner.

*** *Not too much chicken-manure; but night soil in moderation would be useful if not objected to on account of future smell.*

1478—**Asparagus.**—Is it the better way to cut down the green tops of Asparagus, or to leave them until they turn yellow? I think I have seen both ways advised—the first to spare the root the effort of developing seed, the

second because the green growth is of service in producing strong root growth and forming healthy crowns.—Alice.

**** *The cutting of the Asparagus tops in a green state induces premature ripening of the crowns, and as the future crop so much depends upon the manner in which the crowns develop and store up their power to give a full crop the following year, you will easily understand that allowing the tops to ripen naturally is the correct way to deal with this vegetable.*

1479—**A plague of ants.**—Having taken in your Gardening for some years, I have often seen answered a remedy for destroying ants. My case is this : I have them in all parts of my garden. They infest Marrow-beds and stop growth. When a fruit gets a few inches long it dies. On examination it is full of ants. The seed of Potatoes I find is eaten up by ants. Many bedding plants die from the same cause. The remedies I have seen, such as pouring hot water, etc., could not be done ; they are too numerous. Do you know any course I could pursue that would eradicate or reduce them in number? I shall be glad to have an answer in your journal when convenient. —C. Franklin.

**** *Place several shallow pans or saucers on the ground, partly filling these with treacle or honey and water. The drainings from stout and ale are also attractive, and the insects soon drown themselves. Another method is to procure some meat-bones, not too cleanly picked ; lay these down, and when infested with insects drop into boiling water. Drain the bones, and use them in the same manner several times. Ants are a great nuisance when so bad as appears in your case, and almost impossible to eradicate. You must persevere. Get at the nests, if possible, and pour boiling water into them.*

1480—**Crippled Lapageria blooms.**—I have two Lapagerias that are crippled in bloom this year. Will you kindly inform me what treatment I must give them?—One in a Fix.

**** *We think your plants have been kept too dry ; a saturated soil would have a similar effect. You give us no date to judge by. Syringe freely, and make the soil moist without being over-wet. Surface waterings that do not penetrate more than an inch or so are useless.*

1481—**Flowers for decoration for March.**—I am anxious to grow flowers for altar decoration for the month of March. I have a small garden, south aspect, no glass, except a common frame. Could you kindly advise me through your valuable paper?—C. W.

**** *We fear your wish is hopeless. March is so often cold and frosty. Snowdrops and a few early Primroses will be about all you could rely on, and these not in a cold season.*

1482—**Sowing Calceolarias.**—How should Calceolaria seed be sown for next spring? Also is a cellar under a dining-room too damp for this?—Anxious Beginner.

**** *Prepare a pan or shallow box by placing a little less than a third of drainage, then some coarse pieces of turf, and finally cover to a depth of 2 inches with a fine compost of leaf-soil, turf, and sand in equal proportions. Water well, sow very thinly, cover the whole with a sheet of glass, and stand upon a cool bottom, keeping the pan quite dark until seed germinates. You must then admit light gradually. Prick off as soon as the seedlings can be handled. Your cellar, if not too dark, would raise the seed, but the pan could not stay there afterwards.*

1483—**Covering water-tank.**—I have a water-tank, built over with a brick cover or arch, which looks very unsightly. It is due south, and warm, but gets a draught between the buildings. I am desirous of planting it with flowers. What kind of flowers will grow best without their roots penetrating through the brickwork and injuring it? Will you kindly name some, and where I am likely to get them?—Quacro.

**** *There are a great variety of Ivies. You could also plant the Escallonia macrantha. We have recently seen Roses, especially Crimson Rambler, Aimée Vibert, and William Allen Richardson, used in such a connection ; but these are not evergreen. You would scarcely improve upon Ivies, both for a permanent green or variegation, and as a rapid cover. The roots will not harm brickwork in any way.*

1484—**Plants under trees**—I have in my garden an empty space under some Fir, Holly, Willow, and Oak-trees I wish to plant, as it looks so bare. The soil is fairly light, clay subsoil. I thought of planting the Yellow Gorse. Will it grow and flower under these conditions? If not, please state what will do better?—Nil Desperandum.

**** *You would do better with the St. John's Wort (Hypericum calycinum).*

1485—**The Marquis of Bute's vineries.**—Were the Grapes, of which the Marquis of Bute has lately made such good wine at Cardiff, grown in the open air under partial protection, or in covered vineries?—W. W. C.

**** *The Grapes are grown out-of-doors unprotected.*

1486—**Growing Freesias in London.**—Ought I to be able to grow Freesias in an unheated (but very sunny) conservatory in South Kensington, where I succeed perfectly with other spring flowers, and, indeed, many summer ones too? I have made the attempt for four or five years, treating them as directed by various writers in Gardening, but although the "grass" comes all right, I have never seen a bud even. Frost is supposed to be kept out by oil-lamps, though there may be a degree or two in very hard weather. An answer to my initials will oblige.—W. B. W.

**** *Your house is admirably adapted for Freesias. Perhaps your bulbs have not been sufficiently large. Do not attempt to hurry them, and pot them up about the middle of September. If the "grass" grows well, we are inclined to the opinion that you do not feed or give enough water after growth is some 6 inches or so high. While in full growth they need much water in comparison to others of less succulent growth.*

1487—**Diseased Tomatoes.**—Enclosed please find two samples of diseased Tomato-leaves. The first crop is good. Should all the diseased leaves be removed? If removed the plants would be left without foliage towards the base.—J. H. B.

**** *Both of your samples are more affected by red-spider than disease. There is no reason why the leaves should not be cut off, so as to leave the whole of the stems almost bare. Loss of foliage, especially after the fruit is set, induces a quicker and more efficient ripening.*

1488—**Treatment of Arum Lilies.**—Will you kindly tell me how I must treat my Arum Lilies, so that they will flower at Christmas? I potted them two days ago, and put some in the greenhouse. May I give them liquid-manure, and what sort?—Eleve.

**** *Give plenty of water as soon as growth commences. Weak liquid-manures of any kind may be applied when the pots are fairly full of new roots. With such an early start you should have them in flower by Christmas in an ordinary greenhouse.*

1489—**Smilax**—I have a plant of Smilax which has never flourished. Will you tell me under what conditions it should be grown?—Renee.

**** *A warm and moist greenhouse atmosphere suits this best. It is not a good room-plant. You do not say how yours have been treated, nor in what position.*

1490—**Soil for Carnations.**—I should be much obliged if you would tell me what soil I should make up for growing Carnations in? They will not do at all in my garden soil, which is rather heavy and clayey, and, though I have added sea-sand, lime, and soot, still they will not flourish.—De Kaap.

**** *Sea-sand will not do for Carnations, neither will soot or lime when used in conjunction. Either of the latter alone would be good upon the stiff soil ; but if you prepare a mixture of loam, leaf-soil, and a little sand, or else burn some of your stiff loam and apply with decayed vegetable refuse, you should succeed.*

1491—**White Stocks**—Have any of your readers ever known of Bees fertilising Stocks from Wallflowers? Last year we had some beautiful double white Princess Alice Stocks on a Vine-border, grown from seed, with long branching shoots of purest white. Nothing could be more useful or beautiful for cutting. We saved seed, and they are nearly all Wallflowers, and what are Stocks are single. —Stockton Hall, *York.*

**** *There must be some mistake about this. You have got the seed mixed in some way.*

1492—**Palms sickly.**—Could you please inform me about the treatment of Palms? I have had two for about three months. The tips of the leaves are beginning to die. Could you please tell me the cause? They have been kept in a room, but not at the window ; it is a sunny room. Do I give them enough water? They are not watered every day ; but I have stood them in water once now and again —Palms.

**** *Your treatment is utterly wrong. Probably the soil is as dry as dust, and it is a great mistake to stand the pots in water. Sponge the leaves occasionally.*

1493—**Staking Carnations** (*F. H. A.*).—Nothing is better than a light Bamboo cane placed singly to each plant, looping to it the flower-stems all round.

1494—**Kidney Beans not fruiting** (*S. Western*).—We suspect drought at the roots is the cause of non-fruiting of Kidney Beans. Perhaps the variety is not good. Canadian Wonder is the best.

1495—**Best Raspberry** (*S. Western*).—Superlative is the best Raspberry, and end of October the best time to plant. Mulch the surface 1 foot away from the stem with half-rotted stable-manure, and cut the canes down to within 1 foot of the soil early in February.

1493—**Growing Apricots** (*H. Flewett*). — The treatment required for Apricots and Vines is of so diverse a nature that success could not attend the attempt. Why not plant Vines to cover the back wall and grow up on to the roof, where you have 6 feet clear space?

1497—**Winter Cherry (Physalis) in a pot** (*A. M. S*)—Plant the Physalis out-of-doors in a southern aspect, sheltered from north and east winds. This variety requires more exposure than the ordinary garden variety, Alkekengi.

1498—**Rose W. A. Richardson** (*F. G. N.*).—You will get fine blooms in quantity from the strong shoots if you have space to lay them in. Do this now, and remove 6 inches of the point of growth early in March to induce additional shoots to push from the nodes below.

1499—**Foxglove seeds, etc.** (*A. Randall*).—Sow the Foxgloves and Columbines in an open position in the garden at once, covering the seed with sandy soil. About the middle of next March they will be ready to plant out where required to flower. Sow the Poppy seeds thinly the first week in April where they are to flower.

1500—**Treatment of lawn** (*W. Schvester*).—If you require the lawn for immediate use lay it down with turf from the paddock, if it is tolerably free from such weeds as Plaintains, Thistles, and Dandelions. Making a lawn by sowing the best of Grass-seed is slow, but you are sure of having good turf for the waiting.

1501—**Pruning Pear-trees** (*G. C. Beale*).—Prune away at once from the Pear-trees all lateral growth from where it started. In November cut the original shoot back to one or two eyes. From this eye spurs will eventually form, and most likely give fruit. Your suggested treatment of the Morello Cherry-trees is quite right.

1502—**Tomatoes diseased** (*Patience*).—Cut off all fruit in the least affected by the black spot, as well as any leaves similarly diseased. In bad cases pull the plants up and burn them. Where only slight, you may prevent the spread of the disease by keeping the internal atmosphere as dry as possible by the aid of fire-heat, if you have hot-water pipes, and a free admission of air on dry days.

1503—**Grapes unsatisfactory** (*C. S.*).—Keeping the greenhouse hot in winter is one cause of the unsatisfactory state of the Grapes. Fumigating Vines does not injure them provided it is properly done. The toughness of the skin of the berries is due to the variety, and so is the scarcity of the bunches. We suspect the internal atmosphere has been kept too moist and warm during the ripening stage, hence the premature decay visible.

1504—**Christmas Roses not flowering** (*Non*).—They should blossom either in the sun or in shade if the plants are healthy and of a good kind. Helleborus niger maximus and altifolius are the best varieties. If the plants do not make free growth take them up the first week in March, trench the ground deeply, and plant in sandy loam, road-grit, and a little peat. Water well during dry weather. Mulch the surface with horse-manure.

1505—**Zonal "Geraniums"** (*A. N. S.*).—These of almost any variety will blossom in the winter if the plants have been prepared for the purpose, and not without. The cuttings should be rooted in January, the plants grown on sturdily, not allowed to flower until six weeks before they are required. From June first the plants should stand out-of-doors in a sunny position until the middle of September. Five-inch pots are large enough to grow them in.

NAMES OF PLANTS AND FRUITS.

**** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

**** *Several parcels of plants for name have been received with no letter inside, or anything to denote from whence they came, and several correspondents have sent parcels apart from letter. Unless the rules are adhered to we cannot notice communications.*

Names of plants.—*Sweet Pea.*—1 is a French Marigold ; 2 was far too withered to recognise. They are probably both annuals, and can be raised early in April to bloom the same season.——*F. J.*—Tradescantia virginica (the Spider-wort). It is not a Lily-wort, but belongs to the order Commelinaceæ.——*E. T. S.*—Zephyranthes carinata.——*J. Reynolds.*—1, Adiantum Pacotti ; 2, Pteris cretica albo-lineata ; 3, Pteris cretica ; 4, Begonia fuchsioides ; 5, Please send fertile frond ; 6, Begonia Weltoniensis. —— *C. Parsley.*—The name of your flowering shrub is Leycesteria formosa ; the white flower is Bouvardia jasminiflora ; the spotted leaf, Begonia maculata ; and the spike, Phytolacca decandra (the Virginian Poke Weed). In future you must attach numbers. It is much easier for yourself and us too.—— *Dianthus.*—The Old Clove Carnation, undoubtedly. There is no red form of the Clove, but there are brighter forms resembling it now, as Uriah Pike. Gloire de Nancy is the White Clove. Get the "Carnation Manual" (price 2s. 9d., post free), from Messrs. Cassell and Co., La Belle Sauvage, Ludgate-hill, London.——*May.*—The Guelder Rose (Viburnum Opulus). This is not, of course, the kind that one sees so frequently in gardens. It is the variety sterilis ——*G. C.*—Escallonia macrantha ; but it should flower more freely. Perhaps it will bloom well yearly now it has commenced.——*A. E. Reynolds.*—Campanula isophylla, a charming basket-plant, easily grown. It is not a native of New Zealand, but of Corsica. One of the best basket and window plants one can have. The white variety alba is pretty too.——*K. W.*—The Spiræa is S. Thunbergi ; the other plant, Linaria dalmatica.——*James Wyatt.*—1, Centropogon Lucyanus ; 2, Cornflower ; 3, Soapwort (Saponaria officinalis fl.-pl.) ; 4, Potentilla atrosanguinea ; 5, Sedum carneum variegatum.——*The Knowl.*—1, Withered ; 2, Ophiopogon Jaburan variegatum ; 3, Diplacus glutinosus ; 4, Tradescantia zebrina ——*Alltyfirm.*—Eccremocarpus scaber.——*Drewitt.*—Roses : 7, Chas. Lefebvre ; 8, Marquise de Castellane ; 9, Not recognised ; 10, General Jacqueminot.——*R. C. G.*—1, Anthurium Scherzerianum ; 2, Spiræa Bumalda ; 3, Lantana var. ; 4, Sempervivum Haworthi ; 5, Tropæolum speciosum.——*Mrs. White.*—There is no question as to the identity of 1 and 2. The names given are correct ; 3, Wood Sanicle (Sanicula europæa).——*A. Gates.*—Soapwort (Saponaria officinalis). ——*J. H. O.*—1, Double Perennial Sunflower (Helianthus multiflorus fl.-pl.) ; 2, Variegated Larger Periwinkle (Vinca major elegantissima) ; 3, Tecoma radicans ——*S. A. G.*—Agathæa cœlestis.——*E. Tomlinson.*—The name of the plant is Chelone barbata.——*H. R. H.*—The specimens when they arrived were unfortunately much shrivelled, and you have not numbered them. The more slender plant is apparently Bletia hyacinthina and the other Tecoma radicans, but we should like to see this again.—— *J. R.*—1, Pteris tremula ; 2, Asplenium bulbiferum ; 3, Pteris serrulata cristata ; 4, Send, please, fertile frond ; 5, Cyrtomium falcatum ; 6, Apparently one of the Convolvuluses, but should like to see flowers.——*C. Hibbert.*—1, Rose Mrs. J. Laing ; 2, Perle des Jardins ; 3, Glory of Waltham ; 4, Bouquet d'Or.——*R. Weatherill.*—From the leaf we think your plant is a Datura. If so, the blooms will be 8 inches long, pure white, and hang downwards. It is deliciously perfumed, and flowers during the summer. The compost you have it growing in should be slightly altered. Reduce the peat to one half its present quantity and add half-decayed horse-manure instead. Greenhouse treatment, with abundance of water at the root when growing freely.——*Penprisk.*—Datura meteloides.

Names of fruit.—*C. S. Robinson.*—The Plum sent is De Montford, an excellent early dessert variety.——*H. Wallace.*—The larger Apple is Lady Sudeley ; the other we cannot recognise from specimen sent.——*W. Cowley.*—1, Juneating ; 2, Dutch Codlin (very poor). The fruit is attacked with Codlin-moth. See Gardening, August 14, pp. 346, 351.

Catalogues received—*Bulbs and Strawberries.*—Messrs. Andrieux-Vilmorin and Co, 4, Quai-de-la-Mégisserie, France.——*Select Roses, Bulbs, etc.*—Messrs. Dicksons, The Nurseries, Chester.——*Bulbs.*—W. Clibran and Son, 10 and 12, Market-street, Manchester.——*Flower-roots.*—Messrs. Dicksons, 1, Waterloo-place, Edinburgh. ——*Choice Bulbs.*—Messrs. Dicksons, Hull.——*Dutch Bulbs.*—Messrs. Herd Bros., Penrith.——*Bulbs.*—Messrs. Pearson and Son, Chilwell Nurseries, Notts.——*Tuberous-rooted Plants and Bulbs.*—Wm. Bull, 536, King's-road, Chelsea, S.W.——*Bulbs, Camellias, Azaleas, etc.*—Messrs. Wm. Paul and Sons, Waltham Cross, Herts.——*Caladiums, New Dahlias, and Tuberous Begonias.*—Messrs. J. Laing and Sons, Forest-hill, London.

A variegated Carnation (*F. R. Hayes*).—The leaves are distinctly variegated, and it is rather a pleasing kind. No doubt there have been such instances, though we do not remember to have seen so decided a variegation as your plant displays. Keep it, by all means ; but, as variegated plants are generally weak, the probability is that outside the plant will collapse in winter.

Odontoglossum citrosmum.—Would the sender of the photograph reproduced on page 373 kindly send his name? This has been unfortunately lost.

BIRDS.

Distinguishing sexes in Goldfinches (*Inquirer*).—It is somewhat difficult to distinguish between a cock and hen Goldfinch, it depending more upon comparison than on actual difference in the plumage of the sexes. The cock birds are, however, as a rule, more brilliantly coloured and larger than the hens; but this test only applies where members of the same race of Goldfinches are compared, as Scotch and Irish birds are smaller and duller in plumage than the English, while the hen of the Spanish breed is more brilliant in colour, and is larger than an English cock. You will be able more readily to judge the difference in the sexes by their musical performances than in any other way.

POULTRY AND RABBITS.

Ailing Fowls (*J. A. F. H.*).—Your Fowls are suffering from scaly legs, a condition of the skin which is due to a deficiency in the secretion of oily product, so that the skin dries up and becomes like scales. The best treatment is to rub the parts daily with equal parts of vaseline and zinc ointment. In severe cases a mixture of 1 oz. of sulphur, ½ oz. of oxide of zinc, 1 drachm of oil of tar, and 2 oz. of whale oil, will be found suitable, and should be applied daily. Sometimes it does much good to well scrub the legs with a hard brush and warm water. To be successful in such cases early attention is desirable.

BEES.

Quieting Bees.—Will you repeat the carbolic and glycerine and water recipe for quieting Bees given some weeks ago?—Marn.

*** In subduing Bees carbolic acid solution is now often used in place of smoke. A goose-quill is moistened with the solution and passed around and within the entrance of the hive and over the alighting-board. The quilt is then raised, half at a time, and the feather passed over the tops of the frames; the Bees are then in a sufficiently subdued state to allow operations to commence. In removing sections a piece of cheese-cloth is soaked in the solution, wrung out, and spread over the case containing the sections; this causes the Bees to run down into the hive, leaving all clear for the operator. The solution is made by mixing together 1½ oz. of Calvert's No. 5 carbolic acid and the same quantity glycerine, and adding 1 quart of warm water. This solution requires to be well shaken before being used.

LAW.

Undefined boundary.—How can I ascertain the exact boundary of a plot of land sold ten years ago? There are no pegs in the ground nor any buildings near. It is building ground and we wish to fence it in this autumn and make it into a garden.—Working Man.

*** As there are no fences and the ground is not staked out you must refer to the deed of conveyance executed at the time of the sale. That deed will pretty certainly set out the exact area of the plot, and should also set out the boundaries with exactness; but if the description is not clear, or if you experience any difficulty in comprehending the terms and descriptions used, your better plan will be to call in a local surveyor, who will probably be able to ascertain the exact boundaries for you.—K. C. T.

FOOD FROM GARDEN, ORCHARD AND FIELD.

Unsatisfactory bottled Beans.—About a week ago I bottled whole some Kidney Beans in dry salt, according to the directions given on p. 338, in Gardening of the 7th inst. The salt is now becoming liquid and sinking to the bottom of the bottles. Will you kindly tell me if this is as it should be? Also, if tin biscuit-boxes are suitable for preserving vegetables in in the above manner?—F. Picton.

*** Your Beans are quite as they should be. The heat melts the salt in this case, and it melts just the same if not boiled. No, certainly not. You cannot put up either fruit or vegetables of any sort in biscuit-tins. At almost every grocer's in the country as well as in London glass bottles suitable for pickles and jams at ninepence the dozen can be bought.—B.

Tomato catsup.—Peel and cut up a dozen medium-sized Onions and put them into a ½ pint of vinegar to boil until tender, with six Chilies, a dozen Cloves, a dozen Peppercorns, and a teaspoonful of salt. When the Onions are soft, put in two dozen ripe Tomatoes, sliced; let these boil quickly until quite thick, then put in a pint of vinegar, let it boil five minutes, then pass it all through a sieve, put into dry, wide-mouthed bottles, tie a wet bladder over and keep in a cool, dark place.—B.

Vegetable Marrow jam.—Choose all the small Marrows, as these are free from seeds, and much less watery than the large ones—in fact, if the Marrows were always used while small they would be much nicer and less wasteful. Peel the Marrows and slice them into a preserving pan, with two Lemons to each pound of peeled Marrow. Give the Lemons a good pressing and rolling with the hands on a table, then cut the peel as thin as possible, cut away every particle of pith, take out the pips, and slice the Lemon with the peel into the pan with the Marrows. Allow ¾ lb. of brown sugar to each pound of Marrows and Lemons mixed, with two sticks of bruised Ginger and a dozen Cloves, both tied in a piece of muslin. Set the pan over the fire and bring quickly to the boil, stirring constantly after the sugar has melted and it is well boiling. As soon as a little dropped on to a plate jellies, pour into dry pots, jars, or bottles. Cover at once with paper, well pasted over the jars; store in a cool, dry place.—B.

Compote of fresh fruits.—I shall be much obliged if any reader can tell me how to preserve Plums, Damsons, and other fruits in the way they do them on the Continent. A compôte of Plums or Pears is served daily as a matter of course in Germany at both luncheon and dinner, and this is invariably sweet and in good condition.—J.

*** The compôte used in all the best houses in Germany consists of so-called "arrack fruits," and in our household we are never without them all the year round, as they are very handy and the method of preserving them is very simple indeed. The vessel best adapted for the purpose should be made of china or earthenware, but must be well glazed and should be of considerable depth. The fruits are not boiled or heated in any way, but remain raw and fresh and of a delightful flavour. A bottle of good arrack rum (white rum) or other kind of spirit is poured into the vessel, and then follow the fruits one kind after another, according to their season of ripening. First come Strawberries, which are very suitable indeed, then Cherries which have been freed from their stones, then Peaches, Nectarines, and Plums (all without stones), and, last, good Pears from which the skin and the kernels have been removed. Raspberries, Gooseberries, and Currants are not very suitable. With every pound of the raw fruit a pound of sugar is put into the preserving-pot until 8 lb. or 10 lb. of fruit are thus preserved. After that quantity, every additional pound of fruit should have only ½ lb. of sugar, as otherwise the compôte will be too sweet. At the beginning of this very simple process of preserving the first lot of fruit should be stirred with a silver spoon to prevent the sugar from encrusting the bottom of the vessel. If a very large quantity of fruit is to be preserved in the same vessel, it may also be necessary to add more of the arrack rum (or other spirit). The vessel must be well covered to exclude all air.

TENTS! TENTS!—Suitable for Gardens, Cricket, or Camping-out purposes. 40 feet in circumference, pegs, poles, mallet, and lines complete (with tent bag included). These tents are white, and have only been used a little by Her Majesty's Government, and originally cost over £6 each. I will send one complete for 25s. Can be sent on approval. N.B.—I have a quantity of tents from 15s. to 20s. each, but the tents which please my customers are those I send out at 25s. each. Carriage paid. Price List of marquees (any size) post free. **I do not require payment till you have received and approved** of the **tent** from—H. J. GASSON, Government Contractor, Rye.

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Tenders under seal should be addressed and sent to the Clerk to the Board on or before the 4th September next.

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GARDENING ILLUSTRATED.

No. 965.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* SEPTEMBER 4, 1897.

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ROSES.

SILVER MEDAL ROSES.

It is always one of the first questions at the meetings of the National Rose Society exhibitions to enquire for the medal blooms.

Last year there were ten varieties, two securing a brace of medals each. It was the same this year, and, with the exception of Kaiserin Augusta Victoria, the varieties were quite distinct. As all of them are of exceptional merit, I will give a brief description of each, and to make up a dozen varieties propose including the two which won twice last year. These were :—

Maman Cochet, decidedly the best all-round Tea Rose for many years ; a Rose of exceptional merit throughout, and which cannot well be placed in the wrong position or for a purpose it cannot fulfil. The colour is a deep salmony-pink, with a decided shade of carmine in its younger stages.

Her Majesty is also a grand Rose, a tremendous grower, and when established will flower very freely. It has one defect, and that is its tendency to develop mildew early. A pretty, clear satiny-pink of immense size and substance.

The ten winners of 1897 were :—

Mrs. John Laing, a double winner, one of our very best deep pink Hybrid Perpetuals ; a Rose that is good in all seasons and weathers, and cannot be dispensed from any garden.

Muriel Grahame, the other double winner, is quite new, only being sent out last spring. This is a sport from Catherine Mermet, and this fact, combined with it securing two medals during the first season after introduction, is sufficient guarantee of its good qualities. It is a pale creamy-blush sport, changing to almost pure white with age, and quite distinct.

Niphetos has long been known as our best pure white Rose, and was sent out as long ago as 1844. Mr. Merryweather's bloom at Norwich was the finest I have ever seen.

Comtesse de Nadaillac does not grow very vigorously, but it is a free flowerer and always produces a good bloom from every bud. A deep salmon and coppery tint, sometimes flushed with pale carmine. An indescribably pretty Rose, and one which lasts a long time.

Horace Vernet is a grandly shaped bloom, but not of sufficient vigour in most gardens. It grows with Mr. E. Mawley (the hon. secretary of the N.R.S.) in grand form at Berkhampstead, and did with the same gentleman years ago at Croydon. I believe some of the same plants from Croydon are still thriving at Berkhampstead. It is a good example of Roses for various gardens, and never does well with me except as a maiden. A deep crimson, heavily shaded with dark velvety-maroon.

Mme. de Watteville gives us a uniquely-coloured flower ; soft creamy-blush, with a faint flush of pale salmony-yellow when young, and beautifully edged with carmine. One of the very sweetest-scented Roses grown.

Mme. Cusin is another free grower, and every bud is useful for the coat or vases. It is a pale violet-rose, sometimes tinted with a yellowish-white, and very sweetly-scented.

Kaiserin Augusta Victoria grows well and is a free bloomer. Every flower is of good size and grand form. A pale lemon-yellow, and one of our very best Hybrid Teas.

Earl of Dufferin has one grave fault—the flowers are too pendent to show well in the majority of cases. It is a good grower, a grand Rose for standards, and gives us a heavy, well-built-up flower of deep crimson-scarlet with maroon shadings.

Lady Mary Fitzwilliam is well known as a free bloomer and very dwarf, but robust, grower. The flowers are of great size for so small a plant, opening early and late, and borne upon a very bold, stiff stem. The colour is soft creamy-white, with a flush of pale carmine. P. U.

ROSES FOR CUTTING IN AUTUMN AND WINTER.

In order to furnish a continuous supply of Roses under glass in autumn and winter, Tea-scented varieties should be selected, and they are best grown in large pots, being then more easily managed than when planted out. It is a point of importance to understand that rather large plants are necessary to give satisfactory results, as small ones only produce a limited number of blossoms and then go out of flower. The plants that I have found most satisfactory are those that should occupy 12-inch or 13-inch pots, and these, if healthy and well treated, will yield a large number of flowers when Roses are scarce. If the plants have to be purchased I would rather start with young ones than with old and often exhausted ones that have been indifferently managed. If one could begin early in August, with plants in 6-inch pots that have several branches, and require more root-room, one might in a year or two build up thrifty specimens. Such plants as those just alluded to should be shifted at once into 8-inch pots, choosing for compost a good, fibrous loam and a moderate quantity of coarse sand. If the loam is inclined to be heavy, use one-third peat for the purpose of keeping the soil open. It is important to provide thorough drainage, but it should not be so bulky as to occupy much room in the pot. After the plants are potted let them have the shelter of a cold-pit or frame in order that they may be easily shaded from bright sunshine for the first ten days. After that the lights may be removed and the plants freely exposed to the open air. The plants may be transferred from this pit to a cool, airy house early in September, and, except to keep them regularly supplied with water, they will not require any further attention. In all probability most of them will furnish a few flowers during the autumn. If blooms open in the cool-house well and good, but the first season they must not be subjected to any extra heat in order to cause them to open their flowers, for the plants must rest during winter, preparatory to making strong growth in the spring. They must have plenty of light and air in winter and be kept from severe frost. In the following spring a light, airy position must be found for them in a greenhouse temperature. They must not be pruned, unless it is to shorten back to half their length any long, strawy shoots. If pruned like Hybrid Perpetuals they will be many years before they attain a good size. Assuming that they have been managed according to the directions just given, and that about a couple of dozen plants have been prepared, a third of the number should be introduced into a house heated to about 8 degs. hotter than the temperature of an ordinary greenhouse in the middle of October ; and if the others are introduced into the house in succession, at intervals of a month, a continuous supply of flowers may be obtained all the winter. In future years a slight increase in the temperature during December and January may be required, but that is a point which each grower must decide, according to circumstances. A most important part in the culture of these Roses is the

Summer management.—They must have a good rest at this time, and they must not be disturbed at the roots during summer or autumn. If they want larger pots, or top-dressing, it should be done early in May, so that the roots may have plenty of time to get established in the new soil before the plants are turned out-of-doors for a season. As to resting, they must be taken out of the house about the middle of June, and the best place for them during the summer is on a warm, sunny border facing the south. They must stand on a hard bottom to keep out worms, and to secure a play of air and sunshine around branches and roots, and thus obtain a firm and well-ripened growth. Any flower-buds they may have on them at this time should be removed, and water should be given carefully to the roots, just sufficient to keep the soil fairly moist. If the roots are kept just quietly active, the young growths will become very hard by the end of the summer, and then a fine crop of flowers should follow in due time during the autumn and winter. B.

Rosa Wichuriana —This is a creeper to arrest the notice of the most casual observer just now. The profuse foliage fairly glistens, and the deep green foil close to the ground shows up the clusters of ivory-white, small single flowers of surpassing sweetness. When the flowers are plucked the reddish stems add to the effect of the bouquet. There are many uses for a free, creeping Rose of this class, but nothing is likely to profit more by its introduction than the rock-garden. Rock-gardens, where deep seams of good rich soil have been provided, and which are exposed to plenty of sunshine, are just the places for this ground rambler. To tie up the growths at all would be wrong, I think. The shoots strike out at right-angles from the upright part of the collar, and the spaces between big stones soon become clothed in foliage and flower.—W.

Twelve standard Roses for own roots or Brier-stock *(X. Y. Z.)*—A dozen good standard H.P. Roses: Alfred Colomb, large, bright red ; Baroness Rothschild, light pink, large and handsome ; Mme Victor Verdier, rich cherry-red, large and full ; Star of Waltham, crimson, very effective ; Fisher Holmes, scarlet, good shape ; La France, pale

peach, deeper centre, free bloomer; A. K. Williams, rich carmine-red; Mrs. John Laing, pale pink, large, fine form; General Jacqueminot, deep crimson, very fine; Captain Christy, flesh colour, deeper in the centre; Queen of Queens, pink, with pale pink edges, good form; Mrs. John Laing, pale pink, large, fine form. A dozen Teas and Hybrid Teas: Clara Watson, grand variety, with soft salmon-pink flowers; Grace Darling, creamy-white, flushed with pink; Catherine Mermet, delicate flesh colour; Mme. de Watteville, pale lemon, margined with pinkish-rose; Ernest Metz, carmine-rose, brighter centre; Viscountess Folkestone, large creamy-white, centre deep salmon-pink; Marie Van Houtte, yellowish-white, edged with rose, very free-flowering; Mme. Pernet Ducher, canary-yellow, very beautiful in a bud state; White Lady, creamy-white, free bloomer, vigorous habit; Rubens, white suffused with pink, a grand Rose; Hon. Edith Gifford, pale flesh, salmon-pink centre; Homer, shaded rose, deeper centre, very beautiful.

Souv. de Catherine Guillot (Tea).—This will rank with such Roses as La Capucine, Beauté Inconstante, L'Ideal, etc. The buds are coppery-orange, and the point and reflexed edges of the outer petals are a pretty mauve shade.—W.

Josephine Marot (H T.).—Roses good for cutting are always in request, and the above is a splendid addition to this class. Its white, rosy-tinted blossoms are very fresh and pretty, and its large, loose, shell-like petals give it a unique appearance.—W.

Mme. Abel Chatenay.—Another yea has proved (if that were necessary) the great value of this lovely Hybrid Tea Rose. It is a beautiful salmon aad carmine shade with a tinge of vermilion, a most enchanting blending of colours. It is semi-climbing in growth and I should think as hardy as an H.P. The perfume is delicious. —E.

THE KITCHEN GARDEN.

TOMATOES FAILING.

Several of my Tomatoes are going wrong. A little black spot appears on the leaf and spreads. I have a greenhouse 14 feet by 10 feet. I put a flue in it, but I put the staging clear of the flue. Will any reader kindly advise me as to a remedy for the above disease in my Tomatoes? Shall I cut the leaves off?—J.

*** Ought the leaves to be cut off the plants and when are questions that are put to me with greater frequency than upon any other detail connected with Tomato culture. My vocation brings me into contact with numerous amateur growers, and in cottage gardens Tomato-plants are to be seen here and there also, as it is in that direction where the great increase in the number of consumers of the popular fruit-vegetable is most observable. Directly two or three clusters of fruit are formed on the plants some well-disposed, but inexperienced individual advises trimming off the leaves in order that the fruit may have the full benefit of all the sunshine going. As a consequence all but quite the youngest leaves are stripped off, and nothing but the stumps and fruit are left. It is the visitors to the Channel Islands that are so keen on stripping off the leaves, and it is to them that this widespread blunder is to be attributed. They come back with glowing accounts of the crops of Tomatoes there to be seen, and are very positive that much of the success attending their production is due to the practice of early defoliating the plants. It is a pity that cultivators do not bring a little common sense to bear upon the subject. Novices are to be excused in the matter, but not so those men who must be aware that it is only fully-formed, healthy leaves that are capable of elaborating sap, converting it into food for the benefit principally of the fruit, yet it is these they too often strip off prematurely. Instead of cutting away the serviceable old leaves, they ought to reserve these and frequently cut away all superfluous young shoots, stopping even the leaders beyond the third or fourth newly-set bunch of fruit. All the strength of the plants will then be concentrated on the fruit, with the result of improving it in weight and quality. According to my experience—and I have conducted various experiments every season—the fruit ceases to make much further progress directly the leaves are stripped off wholesale; at any rate, they do not gain in weight, and the bulk is light-weighing and poor in quality.

This practice of early stripping off the leaves is not confined to plants grown in the open air, but is carried out still more extensively under glass. There is no justification for wholesale defoliation in either case, though some excuse can be found for a partial removal of old leaves as well as young shoots. Direct sunshine striking full on the fruit doubtless hastens ripening, and in the autumn nothing short of freely reducing the size of the old leaves will obviate this difficulty. As it happens, the most exposed fruit on plants grown in the open is the most liable to be injured by disease, and I have already had to gather some that derived no protection from the leaves in order to finish ripening them under glass—they were cracking badly. There will be no early wholesale defoliation of these plants, but in the autumn a rapid spread of disease will be anticipated by drawing them out of the soil, trimming off the leaves, and hanging them up in a warm, dry house for the best of the fruit to colour. What is not sufficiently advanced to become red enough for the cook to use in soup-making will be utilised principally for making into pickle.

In the case of plants thinly grown under glass I do not recommend the removal of a single healthy old leaf, for the simple reason that the best results attend their retention. When the plants are trained 15 inches apart up a roof, these would be thinly grown. More often than not they are either planted, or the leading growths are trained, less than 12 inches apart, and these I would consider crowded. Already a reaction has set in in favour of wider planting, growing Tomatoes thickly together often ending in the production of lighter crops than half the number of plants occupying the same space would give. It is, however, in the cross rows of plants grown in span-roofed houses by market gardeners where the most crowding occurs, and where there is usually the greatest necessity for reducing the weight of foliage. If the lower leaves are not reduced to half their original size they either blanch each other as well as the fruit, or else disease of a fungoid nature quickly overruns the whole of them, destroying their usefulness in either case. If, therefore, "J." has arranged his plants thickly to the extent of smothering each other, about one-half of each leaf may be cut off, one-third being enough if only moderately thick, while if they are quite clear of each other do not interfere with the leaves on the main-stem till they change to a yellow colour. He doubtless quite understands that no young side-shoots should be allowed to form on the main-stems, so that there are only primary leaves to reckon with, and he will do well to pinch out the points of each leader or plant beyond the last-formed bunch of flower-buds.

I have tried coating the fruit with sulphate of copper and lime mixtures, both in a dry and dissolved state, without any appreciable effect on the rate of removal of damaged Tomatoes, and the only remedy I can suggest is freer ventilation. Keeping the houses warm with the aid of fire-heat, leaving a chink of top air to prevent stagnation of atmosphere, and opening the ventilators wider as early as 6 a.m., admitting all the air possible during the hottest part of the day, are the best preventives of this complaint and of other injurious diseases undoubtedly of a fungoid nature. When the nights are cold "J." ought to get his flue warm, this extra heat hastening the ripening of fruit as well as checking the spread or warding off disease. The house ought to feel comfortably warm and dry. There must be no drying off at the roots for some time to come, but the watering and feeding should be done in the morning. W.

Ornamental Gourds.—It seems a pity that these really very interesting things should not be grown in a more decorative fashion than is usually the case. To show them off to full advantage it is needful to construct a rough sort of pergola over which the plants can be trained, or else have them run over upright and cross poles fixed to each other at intervals, either over kitchen garden paths or in some other places. I saw the other day a very fine and exceedingly interesting collection of these Gourds. They were partially on the ground and partially running over stakes, fixed along on either side, but whilst fruiting well, yet did not show off the fruits to advantage. There were the Pear-shaped, green-pointed with orange towards the stem, the yellow oval with protruding warts, and the bottle-shaped—indeed, so many that I noted but a few. Still, all were as pleasing as they were varied.—B.

MAKING ASPARAGUS-BEDS.

(In Reply to H. G. Gray.)

You can make an Asparagus-bed at any time, but you cannot plant it. By making we mean the formation of the bed, getting the necessary materials together, and the soil in readiness to receive the plants. As regards the width of the beds, this is immaterial as long as you allow the plants room. Large growers who have these beds on the level do not make a series of beds, but plant at 3 feet to 6 feet apart, and grow a row of dwarf vegetables, such as salads or Cabbages between. Beds being on the level are a nice size when from 4 feet to 6 feet wide, with two rows of plants in each, allowing a 2-feet alley between each bed, no matter what is the size of the beds. If you want good grass and have plenty of room do not stint your plants. We have seen plants 1 foot apart, but this is not good culture. Your land appears to be suitable, but the ground should be double dug or trenched. If the bottom is poor you must keep the surface-soil on the top, and place a layer at least 3 inches thick of rotten manure under the top soil, say, between or half way down. You ask what manures? Nothing is better than well-decayed horse or stable-manure, and if soil is poor, increase the quantity advised above. Three-year-old plants need care in planting, as being a fair size they are more likely to be injured in removal. We prefer younger, but have used four to six-year-old plants without danger when properly planted. On the other hand, so much depends on the season when planted, and the attention the plants receive afterwards. You do not mention when you think of planting, but certainly not now. Our advice is, plant at any time from the end of March to end of April. That is the season growth is beginning, and you will get much better results. We are aware some gardeners say they can plant Asparagus all year round. You do not want failures. We often hear of planters' successes, but not failures, and there are many. You wish to know depth to plant. The crowns should be covered at least with from 4 inches to 6 inches of soil after planting, as if the season is at all dry, the plants suffer if too near the surface. In planting you will do well to make wide drills. Place the roots out straight and well firm the soil after planting. In planting give at least 18 inches to 2 feet between the plants in the rows, as healthy three-year-old plants will spread 9 inches each way. With regard to varieties there are few. The best is Connover's Colossal. Argenteuil, a late, large, purple variety, and Giant Battersea, a green form, much grown in the market gardens around London. There are Continental varieties, such as the French Early Giant, said to be far superior to ours, but we think it is culture, as in France much labour is bestowed on the plants to get fine growth. With ample space, well-manured land, and abundance of moisture you will get fine growths from the three varieties named. Few plants will ab orb greater quantities of moisture when in active growth, and liquid-manure from stables is of great value in the growing season, as this contains salt, and is better than using salt. If latter is used it is best given from May to August, not in the winter months when top growth has ceased.

Earthing up Celery.—I am never in a great hurry to earth up the Celery, more so after a hot, dry summer, as, no matter how well the plants are moulded up, it must check growth. Of course, with early supplies it is necessary to mould up to blanch the stalks; but with these very early crops this does less injury, as the plants are lifted so soon. I have found the heads go much worse by heaping up large masses of soil before the plants have perfected their growth than from any other cause. For years I have left my late and midseason plants to the last moment before earthing up. In cool weather the blanching takes so short a time that there is no need to hurry and cripple the growths. The best way is to do the work gradually, giving a little soil at the base fortnightly; this allows of free growth, and also permits the moisture to reach the roots. By the late earthing up advised, the tissue of the stalk is more hardened, and the plants for late supplies are in better condition to stand severe weather.—G.

ORCHIDS.

DENDROBIUM PIERARDI.

D. Pierardi is named after M. Pierard, a Frenchman, who found it, and by whom it was introduced to the gardens of England. It is a common plant in India, being widely distributed throughout that country, but it is particularly common in the forests in the Sunderbunds of the Ganges, from whence it was originally imported. Hence, as may be supposed, it requires strong heat and abundance of moisture in order to produce strong growths, and I have frequently had this plant produce stout stem-like, pendulous bulbs some 5 feet and 6 feet in length. When fully grown the plant should be dried off and kept considerably cooler than during the summer. This will speedily cause the bulbs to swell up and the leaves to shrivel and fall, as the plant is deciduous and loses all its foliage before flowering. Early in the season the flowers will begin to show all along the stems. These, mostly borne in pairs, are of a creamy-mauve, or cream-coloured in some forms, the lip large, downy, and of a soft sulphur-yellow, bearing a few purple streaks at the base. The plant should be grown upon a block or in hanging-baskets, as, being a pendulous kind, it will not thrive if made to grow upwards. The baskets should be well drained, and be filled with good fibrous peat and Sphagnum Moss. The plants may be grown in the very hottest place possible to put them, always being kept well supplied with water during growth, but during winter a temperature of between 55 degs. and 60 degs. will be ample. There are several varieties of this Dendrobe, some of which are very inferior. One of the best is D. P. latifolium, which produces fine flowers rather more freely than is the case with the type. R. T.

Dendrobium Pierardi.

Calanthe masuca.—The evergreen section of Calanthes may be said to have been nearly eclipsed by the many hybrids and fine varieties now included in the deciduous group. Still there is room for both, and either in the Orchid-house proper, the ordinary stove, or a warm greenhouse, this plant is worth a place. The foliage is handsome when the plants are in good condition, and in addition it is one of the most free-blooming Orchids in existence, as for many months in the year the strong, erect spikes continue to produce their pretty lilac and purple flowers. This Calanthe is of easy culture and may be grown in large pots, filled to one-third of their depth with crocks, placing a layer of rough Sphagnum over this, and planting the roots in a compost consisting of equal parts of peat, loam-fibre, leaf-mould, and chopped Sphagnum, a little decayed cow-manure, plenty of crocks and charcoal being added to this. Though the plants do not need elevating on mounds, as is usual with epiphytal kinds, the base must not be kept much below the pot's rim, as if deeply buried the young shoots are apt to damp off. The water supply must be carefully managed at this time, but when growing freely a liberal supply is needed. Occasional doses of manure-water made from cow-manure and soot highly diluted are helpful when the spikes are pushing up, and at this time the roots should never become really dry. In winter very little water is needed, but no drying off is necessary. C. masuca is a native of India, and was introduced in 1842.

Pescatorea Backhousiana. — Though very little grown, this is one of the prettiest Orchids in the genus and requires careful treatment to grow it well. The blossoms are pure white in ground colour, the outer segments being faintly tipped with purple, the lip creamy-white, the centre yellow and lined with red. A Cattleya-house temperature suits this plant, but the foliage will not stand sunlight, so the plants should be grouped in a shady corner. The roots, though large and strong-looking, are easily damaged by excess of moisture or a too close or heavy compost. Sphagnum with a very little peat-fibre may be used for it, plenty of small crocks or charcoal being added, and a thin layer only is needed over abundant drainage.

CHRYSANTHEMUMS.

Securing the buds of Chrysanthemums (*Amateur Grower*).—We think your difficulty has arisen through a slight misunderstanding of the terms used in our issue of August 21st last. When securing, or, to use a better term, retaining the buds, the tiny growths referred to by "H. S." are the small shoots which form around the crown-bud at the time of its appearance. In some varieties the buds, and the shoots as well, are much better defined than in others, hence the reason for your perplexity to some extent. In the very early stages of the development of the buds and shoots you would experience a little difficulty in retaining the buds, but you only need to wait a few days for these to grow, when they each may easily be seen, and the surrounding shoots removed. You refer to the illustration in Mr. E. Molyneux's book on "Chrysanthemums and their Culture," page 61, but you must not take that as being representative of every type of the Chrysanthemum; the formation of the buds varies so much, and some of the buds of recent introductions in their early growth, to the inexperienced, very much resemble the shoots surrounding each one. The bud depicted on page 61 is representative of one form of growth only, and has no doubt assisted many in coming to a knowledge of what a crown really is. Some buds have long leaf-like growths adhering to them, and perhaps you may have been misled by their similarity to the shoots surrounding them. By a close and careful observation you will see, down in the heart of these leaf-like buds, a solid-looking growth which is none other than the bud itself in infancy. You had better, therefore, wait until the tiny shoots make sufficient headway for you to distinguish between bud and shoot, and when you are certain of this detach the shoots one by one until the bud alone is retained.

Hastening Chrysanthemums into bloom (*Herts*).—Your query raises several important points in regard to cultural details. You ask how you may hasten your Chrysanthemums into bloom if necessary, as for the last two years your plants have not flowered till a week after your local show. Now this is a failing with many growers, the question of "timing" the plants being very necessary with several of the best sorts, while with a large number of indispensable varieties the blooms are fully developed in time. To be successful in this particular, and have the flowers of the different sorts—both early and late—it is important that the peculiarity of each kind should be thoroughly understood. If the blooms are all wanted within a given period it should be easy to effect this. Early sorts may be made to flower later than their natural blossoming period, while late sorts can by the same rule be made to perfect their blooms earlier than is their natural inclination. You may ask how this is brought about? To this we reply, by the early manipulation of the plants generally during March and April, and sometimes in May. This matter, however, has often been dealt with in Gardening, and during the early part of the present year the uncertain sorts have been treated carefully, and their method of culture given in detail For this reason in another season it would be well to adopt the system just alluded to. Of course, it is possible to hasten the development of the flowers on any of your late plants, but at some expense to the flowers themselves. Blooms that have been hurried forward in heat invariably possess indifferent colouring, and in addition rarely develop into those full deep blooms which should characterise all high-class exhibition flowers. The buds of Chrysanthemums should always have a long season of growth, and this is continued if plants are housed in the ordinary way and cool treatment given to them. If, on the other hand, the plants are housed, say, during the first week in October, and fire-heat is given straight away, the buds become unduly excited into growth, and the flowers, consequently, develop quickly, and generally are very shallow instead of deep and full Then, again, the rapid change of atmospheric conditions—from the open air to a comparatively close and limited air quarters of a greenhouse or conservatory—is quite sufficient to get the plants into a very unhealthy condition,

and will ultimately end in disappointment. You cannot make a big flower out of a small and immature bud, this being only possible with those retained in good time, and consequently of a good size. We would suggest that you should house your plant a week earlier than usual, but only those which you know to be just a week or so later than you think they should be. Let the glass structure be freely ventilated, and if the house is a small one keep the plants as near the glass as convenient. This will prevent them becoming drawn and weakly. So long as the buds continue to get larger without any undue excitement so much the better. An occasional dose of sulphate of ammonia will still further assist in the early maturity of the buds; but be very careful in its use. A quarter of an ounce mixed thoroughly with a gallon of clear water will work wonders, and when watering just take the chill off the water by mixing warm water with it. This should be the rule always with those somewhat late plants. During damp and dull, sunless weather a little fire-heat may be given, just slightly at first, increasing the temperature as the weeks advance to 50 degs. or 55 degs. Take care to shade the fast-developing buds during periods of bright sunshine, or all your efforts will be wasted. Some sorts show colour in the buds much earlier than others, so that it is impossible for us to give you a date when to expect this. It is pretty safe for us, however, to state that a month before the show should, in many instances, be sufficient from the date of showing colour, while in some others quite a fortnight longer would be necessary for you to allow. The last week usually shows a very rapid development of the blooms. You will find it a great advantage to house the Japanese sorts separately from the incurved, as the latter develop so much quicker than the former, and they also prefer a cooler temperature altogether. Incurved flowers take from three to four weeks to develop from the time they first show colour. We think we have considered all the points raised in your query, and hope our advice may be helpful to you and other readers.

Phlox Purest of All is worthy of note. As the name implies, it is white. The pips are large individually, and the trusses large, the growth dwarf and sturdy.

THE TALLER BORDER PLANTS.

SEPTEMBER and the early part of October witness many of the taller herbaceous plants at their best, and a rather close inspection should be made at the present time with the view to make any alteration later in the season that may be deemed advisable and to strengthen any specially good things. In the latter direction it is gratifying to know that the block system of planting—*i.e.*, each variety in sufficient quantity to show it off to advantage—is rapidly gaining ground. With the best intentions and adopting the best style of planting, however, very few are able to fill a mixed border altogether to their liking at the first attempt, a border that is of large size in which there is great variety. Plants require to be seen together to form a correct idea of the most effective contrasts both in colour and size, and a little alteration is therefore often necessary. When beds of average size can be spared for particular families, alterations are not often necessary. The first planting may be regarded as a permanent affair until it is found advisable to thoroughly remodel the bed. As yellow is the predominating shade at this season among the taller plants, Starworts and Chrysanthemum maximum, leucanthemum with their varieties, also uliginosum, may be introduced in sufficient quantity to give the necessary variety in colour, whilst among mid-border plants of the present season are Statice, Senecio pulcher, early-flowering Chrysanthemums, Starworts of medium height, and the Japanese Anemones. Of the last there are three distinct shades in japonica and vars. alba and elegans. The type varies in shade in different seasons and on different soils; this year it is very vigorous and deeply coloured. It must be remembered that nearly the whole family of Sunflowers is more or less yellow, varying between primrose and a deep orange, with the exception of Echinacea purpurea and Helenium striatum. Before quitting the subject of the mixed border I should like to point out that one of the most important points to be considered, either in the first planting or in after construction, is to group the plants of different seasons well together, so that there is no long stretch of the border absolutely without flower at any one time right away from spring to the middle of autumn. As pointed out above, most of the taller or back border plants are late flowering, and the introduction of some of the taller Phloxes and Delphiniums will therefore be found advisable.

Border of tall-growing hardy plants. From a photograph by Mrs. Deane, Fairfields, Fareham.

FRUIT.

Piping for heating vinery (*Surrey*).—It makes all the difference in the number of hot-water pipes in a vinery whether the Vines are intended for early fruiting or late use. To have Grapes ripe in June or July in a vinery the size named, six rows of 4-inch piping would be necessary. To grow Muscat of Alexandria successfully and by itself, which is much the best way of managing this Grape, the same number of pipes would be necessary. For Grapes to ripen in September four rows would suffice. No matter what the number of pipes, they should be so arranged as to heat the house equally. In no way is this so easy as spreading the pipes over the greater part of the house. Presuming the border is inside, and 6 feet or 8 feet wide, the pipes should be so arranged as to cover the whole of the border. In arranging six pipes five of them should be flow-pipes, all starting at right-angles from the main, and terminating in one return pipe. For instance, the first pipe is fixed on the wall-plate at the front near the sashes, and the remaining five rows 18 inches or 2 feet apart. No pipes are required within 8 feet of the back wall, as the heat always ascends to the highest point, therefore to arrange pipes there is wasting them. By spreading the pipes over the house, as indicated, the Vines obtain the heat equally. When hot-water pipes are arranged in clusters of four or six, as is too common a practice, the Vines above receive too much heat, which generates red-spider too freely for the welfare of the Vines. Light iron girders laid on pillars at one side of the border, and built into the front wall—say 6 inches above the surface of the border—will carry the pipes economically, and do not interfere with the management of the border, such as top-dressing or manuring. In a vinery 24 feet long a rise of 2 inches in the pipes will provide circulation sufficient for the correct working of the hot water.

Propagating Gooseberries and Currants.—The strongest summer growths of these bushes make the best cuttings, and they may be taken off for the purpose directly the leaves begin to fall, which will soon be the case. When cut off the bushes, make the base of each cutting at once by severing it level and clean close under a leaf-bud. All the stem-buds from the bottom upward should be taken off, except the top four, but not in the case of Black Currants, when all may be left. The cuttings should range in length from 10 inches to 12 inches according to stoutness. Get them laid thickly into the ground as soon as made if it is not practicable to plant at once; but the sooner that can be done the better, as rods are so much earlier pruned. In planting, have good garden soil, and in digging chop down furrows vertically 4 inches deep. Stand the cuttings into these 9 inches apart. Strew in some sharp grit; then fill up firmly.—D.

Yorkshire Beauty Apple.—This variety is not greatly known or grown, and never comes into a list of select varieties; yet this season, when Apples generally are sparse, this one is cropping well almost everywhere. I have just recently seen some 50 standard trees of it literally loaded with fine, handsome fruit. These are on strong, stiff soil at Musley Lodge, Surrey. The trees have rather loose, free habit of growth, and do not fruit much until a few years planted. None referred to have been planted five years. Every tree has been propped up to enable the head to bear the fruit, which has also been judiciously thinned. In such a season as the present a crop of fine Apples is most valuable. The trees will do well with Manx Codlin, Stirling Castle, and Prince Albert for small gardens.

Apple Domino.—This early Apple is one I can strongly recommend. It is large and bluntly conical, prominently ribbed, with a greenish-yellow skin. The tree is a strong grower, and on either stock very free cropping. I have a bush-tree on the English Paradise-stock in this garden, and during the last four

years it has not failed to give a big crop. Even this season, when only a few kinds have any fruit, this is one of the best. Another recommendation to the fruit is that it keeps longer than most of the Codlins.—J. Crook.

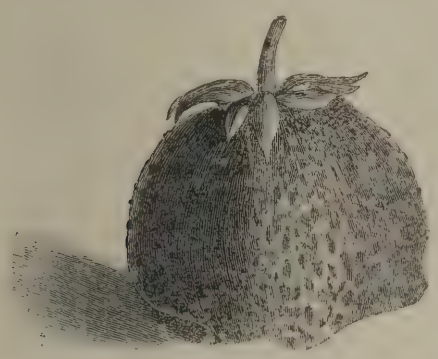
STRAWBERRIES IN THE OPEN GROUND.

With attention to cultural details the amateur can grow Strawberries as well as anyone, and when a few details are carried out the work is quite simple to enthusiasts or lovers of fruit.

British Queen is still one of the best Strawberries grown, whose flavour is its chief point; but this cannot be called a reliable amateur's fruit, as it is not at home in all soils, and not prolific; still, in gardens where the Strawberry thrives it should have a prominent position. As regards the culture, it is simple; but this I will refer to later, as it is a strong point if good fruits are needed. Probably no Strawberry of this country will find more favour than the newer

Royal Sovereign. This is a true amateur's variety. It will grow in any soil, is at home near large smoky towns, and will give a good crop from poor plants with indifferent culture If I could only grow one Strawberry this would be my choice; in fact, I call it the most profitable Strawberry of the day. Frequently one plant has been known to produce 10 lb. of fruit when given good culture. It is, in addition to its crop, of good quality, a robust grower, very hardy, and stands our variable winters without any loss of leaf or plant.

I have heard some object to Royal Sovereign on



British Queen.

account of its size. I do not think this is an evil. I am not a lover of fruit for mere coarseness, but here is a solid fruit of good colour and fair quality. I admit it is not a British Queen, but it will grow where the Queen would not, and if fruits are grown for profit, I should give this the preference to all others.

Dr. Hogg is also a large fruit of true British Queen flavour, hardier than its parent, deliciously sweet, and requires good cultivation. This, like Royal Sovereign, should be grown from young plants—that is, runners planted yearly—not allowing the plants to bear more than two crops of fruit at the most. I only take one plant each July, and treat these varieties as annuals. Dr. Hogg is much larger than the Queen, and is more robust. Those who study flavour, and who may have parted with the Queen, may with advantage give the variety, Dr. Hogg, a trial. The well known

President is a grand variety, though old. It is also known as Green's, but the more familiar name is President. It is a large fruit, handsome, enormous cropper, not fastidious as to soils, pale scarlet, a solid fruit, very heavy, with rich, fine flavour. It is excellent for main crop and good in all soils, as it retains its flavour where others fail. The

Elton is a late fruit of the Pine section, good, and one of the best for a north border or preserving; a brisk acid flavour, so different from others. The plant does not make gross growth, and may be planted closer than some kinds. It is not at its best till the second year, and should have a stiff soil, but is not fastidious if given good culture. The

Frogmore Late Pine is not unlike the Elton in quality. It is a very rich fruit, requires the best of cultivation, and is none too robust. It makes but few runners. I prefer to grow these Pine varieties different to the free growers—closer, and to stand two or three years, according to the soil and condition of the plant. I cannot call the Pine varieties—especially the

Elton.

Frogmore—a profitable amateur's Strawberry. They are not prolific, and, as they need the best culture, they are more costly. I admit, if the best flavour is the point aimed at, then grow the British Queen and the Pine varieties. Probably few amateurs have given

Laxton's Latest of All a trial. This is a seedling from British Queen and Helena Glade, two splendid parents. One possesses flavour, the other free growth and size. There is the true Queen quality about it. The fruit is late and luscious, and as it prolongs the season, it is, therefore, most useful. I have not named a variety of sterling merit—the

Vicomtesse H. de Thury; it is an early fruit, excellent for preserving, bright in colour, not at all large, but of excellent flavour. It is hardy, does well in town gardens, and bears an enormous crop. We now come to what may be termed

Autumn Strawberries.—These are quite distinct from the others, and are in most cases closely allied to the Alpine or Hautbois. There are now a fair number of varieties, and of late years they have found more flavour. A bowl of fruit in October is always appreciated. The quarter season varieties in the first place are obtained from seed. Seed sown in spring will produce fruit in quantity in fifteen or eighteen months, and after that the runners will continue the yield. These planted out each spring, say in March, will give fruit the same autumn, and the fruits are so delicious and distinct from the usual run of summer fruit that they are con-

Royal Sovereign.

sidered a great delicacy. The best of the autumn varieties are Sutton, Large Red, Improved White, and Royal Hautbois. Fruits of the two latter are large, long-tapering, and very prolific. These grow freely from seed and runners, The varieties need less space; 18 inches between the rows of plants, and the plants themselves 12 inches apart, being ample. They should get fresh ground every two years. By growing the Quatre Saisons and the earliest of the others, such as Laxton's Early or No. 1 and Royal Sovereign, Strawberries may be had from May to October.

It is useless to advise on the culture, unless care is taken to get good plants, true to name, from a true source. Plant as early in August as possible, in well-cultivated land, well manured and dug. Make the land firm at planting. Do not stint in the way of moisture when the plants are young. My advice is to grow young plants in preference to keeping old stock. Two years is ample, and three the most for the plants to remain in one place; and by giving new soil and growing plants young, much finer fruit is secured. My advice is, plant early in good material, and make a new bed at least every two years. I only leave the free-growers one year. I plant the end of July and fruit the next June, planting my old beds with Broccoli or Kale, not digging the land, but merely clearing away the Strawberries and drawing drills. Strawberries, like most plants, soon exhaust the soil. They need good culture, and this is best secured by frequent renewal of plants, fresh soil, and food.

W.

Treatment of an old Mulberry-tree.—Will you kindly advise me what to do in the case of an old Mulberry-tree, which some years ago was buried in a bank to the height of about half its trunk. This has caused the tree to fail,

Frogmore Late Pine.

I believe, and this year more than half has had to be cut away as dead wood. I propose to remove the earth down to the bottom of the trunk, but should this be done now or later, or when the leaves have fallen?—C. H. Aitken.

*** Your tree is doomed. As you have already cut away half the tree as dead wood, it is simply a question of time for the other half. It is bound to come sooner or later. If you decide to remove the soil from round the stem you had better do it when the tree is leafless and at rest, but we offer you no hopes of the tree ever regaining its usual vigour. The mistake could have been avoided if the soil had been kept from pressing against the trunk by means of bricks placed round the tree. The wind would then have had a chance of playing round it and drying up excessive moisture. Our advice is to grub up the tree.

Double Zonal Pelargoniums F. V. Raspail (Improved).—There is no doubt about this being a great improvement upon the older variety F. V. Raspail. The plant is comparatively dwarf and sturdy, and freely produces immense trusses of blossom of a rich deep scarlet colour. The individual pips, too, are very large. Quite recently I saw a fine batch of plants flowering under a window in a suburban garden with an eastern aspect, and this should be conclusive proof of its hardy and robust character.—B.

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TREES AND SHRUBS.

THE WISTARIAS.

A well-known and handsome climber is the Wistaria, which has light purple flowers. The white Wistaria is a counterpart, except in colour, of the type, and, as far as I am in a position to judge from young plants, equally free flowering. It forms a good companion to the type, and suggests what an attractive floral picture would result from allowing the two to intertwine and disport themselves among the branches of some sombre-hued tree, such as the Spruce. There is also a double-flowered variety of the common Wistaria, but I can never get its blooms to open in a satisfactory manner, though, judging by the descriptions of it circulated at one time, it should be a valuable climber. There is a North American representative of this genus—viz., W. frutescens, deeper in colour than the last-named (being of a bluish-purple hue), and otherwise valuable for flowering after the common Wistaria is over. Its flowers, too, instead of drooping, are borne in erect racemes. It is much less vigorous than the type, but may be employed for just the same purposes. W. frutescens is spread over a considerable tract of country in Virginia and Carolina, and, according to Loudon, was introduced in 1724; but at the present day it is far from being common. W. multijuga is said to bear very long racemes of blossoms, but I have not yet succeeded in flowering it, for though one plant of it grows freely it shows no signs of bloom, and as others elsewhere are in the same condition, it would seem to be a shy-blooming kind. There is a white-flowered variety of this announced in some nurserymen's catalogues. The ordinary purple kinds may be trained in many ways. A.

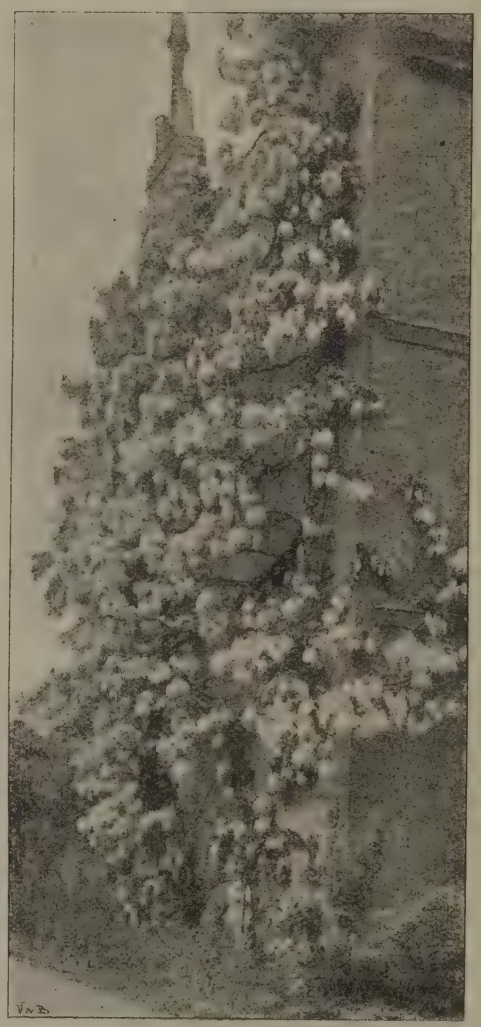
Specimen trees for lawn.—Would you kindly mention a few of the choicest of these (evergreens) for a stiff and rather clayey soil?—Springfield.

*** Amongst evergreen trees suitable for planting on the lawn the following list comprises some of the most beautiful and hardy trees grown. For general purposes the Holly in its green, silver, and golden forms is difficult to beat for producing fine effects. The Arbutus (Strawberry-tree) is very much neglected as an ornamental tree. Andromeda floribunda produces an abundance of wax-like blossoms from March to May. Quercus ilex (Holly Oak) and Q. laurifolia make beautiful specimen trees. Amongst conifers, Biota orientalis aureo, Abies canadensis (very graceful), A. Albertiana, similar to the last named, but of upright and much more vigorous growth. These are all really handsome trees: Picea Nordmanniana, vigorous and graceful. Cupresses Lawsoniana Silver Queen, one of the finest silver-coloured varieties grown. C. macrocarpa is of rapid growth and highly ornamental. The Sacred Cedar (Cedrus deodara) is perhaps the most beautiful of all ornamental trees. The golden English Yew (Taxus baccata aurea) is also very beautiful. Amongst Retinosporas, the varieties named filifera, plumosa, squarrosa, and obtusa compacta are perhaps the best. Thujopsis borealis should always find a place. Graceful, of rapid growth, and very hardy, it is without doubt one of the finest all-round ornamental conifers grown. Thuja occidentalis, Ellwangeriana, and T. o. Vervæneana are capital free-growing subjects even in stiff soils.

Althæa frutex (*Amateur*).—This popular old shrub may be generally depended upon to furnish a good supply of blossom regularly about this time of the year. Evidently your plant is not happy. It is not a lover of cold clay soil, especially if the position is a sunless one. The soil which it prefers is moderately rich and fairly moist, and fully exposed to the sun, as its wood becomes thoroughly ripened and better able to produce its annual display of blossom. We should certainly recommend you to lift your shrub in the autumn, shake the old soil from its roots, and plant it in fresh soil, and, if possible, a sunny position. The trees referred to at Kew, though planted in very dry soil, get a fair amount of sun-heat, which accounts for their blossoming so freely.

Flowering shrubs for borders.—"J.," in article, page 360, suggests "flowering shrubs of compact growth," for back for "mixed borders." A list of shrubs suitable for this purpose is desired.—W. M.

*** There is such a variety of shrubs of compact growth suitable for planting at the back of herbaceous borders that to mention every good thing would occupy a great deal of space. For the convenience of "W. M." and other readers of Gardening we may just briefly refer to a few of the best. The genus Spiræa affords many very beautiful examples. Some of the single-flowered Roses are very choice. Berberis of sorts, Cherries, Coluteas, and Escallonias are also very fine. Ligustrums, Exochordia Alberti, Cydonias, and Oleorias can also be recommended. Ceanothus azureus and C. Sceptre de Azure are first-rate. Genistas and Cytisus, Prunus, Loniceras, Daphnes, Choisya ternata, Hibiscus of sorts, and Staphylea colchica are well worth including.



Wistaria sinensis on wall.

List of flowering shrubs of compact growth (*X. Y. Z.*).—The following shrubs are perfectly hardy, good growers, and very free flowering: Olearia Haasti, carries numerous clusters of small, pure white, Daisy-like, sweet-scented flowers, which are seen to excellent advantage against the small, deep green leaves. It stands in the front rank of choice shrubs. Kalmia glauca is dwarf, bushy, and very useful for a variety of purposes. Prunus sinensis fl.-pl. is a grand shrub, with small, double, pure white blossoms, borne with such freedom as to completely hide the long, slender shoots on which they are carried. Spiræa Anthony Waterer is dwarf, very bushy, with fine heads of deep crimson flowers. Another Spiræa equally hardy and in its way quite as useful is one named Thunbergi. In this case the growth is loose and graceful. The small white flowers are freely produced. Rhododendrons comprise a great many extra good things. R. præcox is exceptionally hardy, of good habit, and bears its rich display of rose-coloured flowers in advance of most of its congeners. Philadelphus Lemoinei is a first-rate shrub where dwarf-growing subjects are in demand. Its white flowers are borne very liberally. Cydonia (Pyrus) Maulei, Veronica Traversi, and Berberis Darwini are also very fine hardy shrubs of compact growth.

WINTER FLOWERS.

Seasonable Notes.

There are many plants which may be induced to flower in winter, but while some only give a scant and ineffective supply of blossoms, others produce them in summer-like profusion and richness, and it is these which we wish to bring prominently into notice. Of the twelve months, December and January are those in which flowers are most valued; about Christmas and onwards anything in the form of a flower is welcome, and showy blooms are greatly appreciated.

Camellias.—What Rhododendrons are in our woods and pleasure-grounds in April and May, and Roses in our flower-beds in June and July, Camellias are amongst indoor plants about Christmastide and throughout the winter, and therefore their culture should be universal. Many of the newer varieties have larger blooms than the old sorts, but for supplying a large quantity of useful flowers, the old kinds have everything to recommend them. The old double white, for instance, is perhaps the finest Camellia grown. None can surpass it in purity, and none will produce more blooms when planted out in a bed. Many get their plants to make abundance of wood, and flower-buds are formed in plenty, but they fall off before they open, and many fine blooms are consequently lost. This misfortune is said to be caused in many different ways, but I attribute it to three. The first, dryness at the root; the second, aridity of atmosphere at the time when the blooms should be opening; and the third, indifferently ripened wood. Camellias dislike dryness in any form, and soon show their abhorrence of it. We all know that no half-ripened wood will bloom or fruit perfectly, and this applies forcibly to Camellias. We grow our plants in all the sunshine possible throughout the year, and the roots and atmosphere, especially in winter, are constantly moist. If we cannot syringe twice daily, through danger of damaging the blooms, we moisten the ground under them and the centre leaves, where flowers are not so plentiful as outside. In order that Camellias may bloom freely about Christmas they should be induced to make young wood in April, or about that season, and then the buds have plenty of time to swell up, mature, and open at the proper season.

Bouvardias should be grown in every garden to bloom in the winter. They are like Ixoras in miniature, but much more easily grown, and more profuse in blooming. At one time we had upwards of a dozen sorts, but now variety has no charm for us; we only value those which bloom best, and these we have found to be B. Vreelandi, pure white, and B. Hogarth, a very fine scarlet. Plants of these in 6-inch pots will produce from two to three dozen heads of bloom in December, and as each will measure from 3 inches to 5 inches in diameter they are objects of the greatest beauty; and, besides this when grown in a stove temperature, and induced to go on making wood, they keep on flowering in constant succession. We propagate young plants of them in March, grow them in cold-frames during summer, and keep the shoots well pinched in until September, when, in a little more heat, they throw up numerous shoots and lovely flower-heads in profusion.

Poinsettias are most brilliant in winter. The brightest bed of Scarlet Pelargoniums which anyone ever saw in summer does not excel a quantity of these placed together when fully developed. July is soon enough to put in cuttings of them. If taken and rooted in

March or April, the plants will be fully grown by August; then, as a rule, the bottom leaves fall off, and the plants do not improve. Late-rooted plants, on the contrary, cannot do this; they grow on until December, and they have a freshness both in foliage and floral bracts which early ones never possess. They require no special forcing to have them in perfection in winter. It would be almost an impossibility to prevent them from blooming at Christmas; very good plants of them may be grown in 6-inch pots. They will do with little more than cool-frame treatment until October, when an intermediate temperature will grow them on and bring them out well. The largest heads will be formed in a very warm place, but the most useful are those from an intermediate-house. Heads cut from great heat will not remain fresh and bright in rooms for more than two or three days, but firmer and cooler-grown ones will last a fortnight or longer.

Chinese Primulas—*i. e.*, those belonging to the Chinese class—are thorough winter flowers, and most useful they are, especially the double varieties. Their culture is so simple and their flowers so well known that I need not enter into any longthy statement here in their favour, but it cannot be too much known that everyone who possesses a greenhouse should have some well-grown and full-bloomed Primulas with which to decorate it in winter.

Cinerarias are charming during the dull season, and well worth all the attention required to make them bloom, and after all there is nothing in this worth speaking about, as it is simply a matter of sowing the seed early. Our January plants are the produce of seeds sown in April. They are kept in cool-frames until October, and then moved into a temperate conservatory to bloom. Insects are never allowed to injure them, and they are potted on from time to time until they get into 8-inch pots, in which they remain. Dwarf, bushy plants with plenty of bloom-stems are the best, and these can be secured by growing the plants in plenty of light and near the glass. Of

Begonias we like B. insignis best. This we grow on like the Bouvardias, and it makes a most beautiful winter-flowering plant. Through checking the leading shoots it is induced to form many side-branches until it becomes bushy, and then it forms itself into one elegant and drooping mass of light pink blooms. It is well suited for dinner-table decoration, or for that of the drawing-room. It is a plant from which one may cut basketfuls of bloom. Of all winter-flowering Begonias this is the one I can recommend with the greatest confidence. Plants of

Azalea Comte de Chambord. From a photograph by Mr. Mason Good, Winchfield, Hants.

it will bloom as freely in 2-inch and 3-inch pots as in 6-inch and 8-inch ones.

Calanthes (Orchids) are a very fine class of midwinter-blooming plants, and wherever there is a stove they should be grown. If started into growth in May, and grown on in pots or baskets in a stove temperature, they will develop bulbs which will produce from two to four spikes of bloom each, and these may be had in great beauty before Christmas. Here we have only the heat of an intermediate-house to give them, and they do not bloom with us in November as they do in many places; but they are fully out in January, and we find them most useful for all kinds of cut-flower decoration.

Eucharis amazonica is another gem in December; its delicate flowers, of the greatest purity, are unsurpassed by those of any other stove plant. This Lily-wort, we find, does best when undisturbed at the root for years; our best plant has not been turned out of its pot for three years. It is not so large as some we have seen, but it blooms uncommonly well, and in January often opens its fourth crop of blossoms the same year. During the time it is throwing up its flower-spikes and blooming it is put into the warmest place we have, and during that time it makes many fresh leaves. As soon as it has finished flowering it is placed in a cool-house for a few weeks, and then it is subjected to strong heat again to induce it to bloom; this it never fails to do if plunged in the Pine-bed where the bottom-heat is about 90 degs. and the atmospheric heat 65 degs. To have it in bloom in December I would recommend its being rested in October and plunged in heat in November.

Zonal Pelargoniums.—These are very showy in winter; even those which have been blooming in pots throughout the summer are in use then. The only way by which they can be got to bloom freely, and make a fine display in December, is to propagate young plants in May, shift them into 6-inch pots as soon as ready, and keep them in the open air from June until September. During that time they should not be allowed to bloom, and a sunny position ripens the wood and hardens it for winter flowering. The end of September is a good time to take them indoors, and a light, airy greenhouse or pit is the kind of structure in which they will succeed for some months afterwards. In winter we have had plants of Henri Jacoby bearing eight and ten massive trusses of the brightest hue. As a scarlet this variety has no equal as a winter bloomer.

Epacrises are lovely in winter and spring, and never fail to give satisfaction. They do not bear confinement in rooms well, but they

supply a very fine lot of cut bloom, and their long shoots, so beautifully furnished with various chastely-formed and coloured flowers, are charming for vases. They bear being cut down when in flower better than most plants, as this only encourages them to produce more shoots, which bloom in their turn, and ultimately give place to a host of others.

The Eranthemum pulchellum is a famous plant for blooming in December. It produces a multitude of flowers at the end of every shoot of a bright sky-blue colour. Spring-rooted cuttings flower in winter, and so do old plants, if cut back in early summer and allowed to form bushes in frames throughout the brightest months of the year.

Amongst Azaleas, the wonderful bright, small-flowering A. amœna is one the best of these to flower in profusion at Christmas, and it is most useful for cutting or pot decoration. Fielder's White is another Azalea which almost blooms naturally in January. Borsig forces well, is semi-double, and very fragrant; the flowers are pure white, and it forms a good companion to Stella, which is a very bright, free-flowering kind. Comte de Chambord, white, with upper petals spotted, is a good kind (see cut).

Roman Hyacinths, and various coloured Tulips of the Duc Van Thol section, and double Roman and Paper-white Narcissi, are about the only bulbs we can force profitably to flower in December. Many other good things might be named, were we going into winter flowers generally, but these remarks are strictly confined to subjects which may be easily grown, and which bloom profusely in December and at Christmas. G.

HOUSE AND WINDOW GARDENING.

DRACÆNAS FOR DECORATION.

Well-grown plants of Dracænas in proportionately small pots are always useful for decoration. Where the means exist for a proper and expeditious propagation of young stock it does not matter very materially if a few plants now and again are injured through being exposed, either in a colder atmosphere, such as the conservatory, for instance, or in one that is void of humidity, as in a room. Plants that have had hard usage can be very conveniently reserved for stock, for it will rarely happen that a Dracæna is killed outright. In this respect Dracænas have an advantage over many other plants which are more sensitive to a somewhat rough treatment; it will seldom happen that the stock of any one kind is lost with even ordinary culture. It does, however, often occur that but poor examples are seen where, with no extra pains, good or at least presentable plants might be had by careful management. It matters not what class of plants come under our observation; if we wish to excel in their culture and make them prominent features in our gardens, then we must study their requirements as to temperature, atmospheric moisture, soils, etc., and thus work out the problem of their individual needs. When this has been done successfully, cultivation is reduced to a far more simple matter, with the result of a saving in labour and anxiety as to the future.

Dracænas that have become very leggy, with no prospect of future usefulness, except in the case of a few which perhaps may still be in good health and adapted for grouping as standards, should in late autumn or early winter be set aside for propagation. Those having a healthy top may have that taken off and then struck in the propagating-pit in a brisk heat, whilst the healthy part only of the stem should be cut up for propagating from eyes; the fleshy roots will frequently make the best of plants, but are generally slower in making a start than the eyes. I usually like to have some of each. I have found them to start well into growth when simply plunged into or buried (more properly speaking) in Cocoa-fibre-refuse, which is kept always well moistened and at a high temperature (80 degs. to 85 degs. will not be too much for them). Dracænas may be propagated from the tops in jars of water, but it is not recommended where there is better means in a propagating-pit. The chief point to aim at is that of obtaining a quick start into growth, and afterwards maintaining the same until the young plants are fairly well established in small pots. Then, unless it is urgent to press them onwards, it will be better to subject them to the usual treatment of stove plants, and thus endeavour to get the plants into character without causing them to become drawn, and with foliage that is not enduring. A well-grown Dracæna at the end of the first twelve months of its life should have retained nearly every leaf it has made; it will by that time, and in the case of most sorts, be well coloured for its kind. When the plants have well filled their first pots with roots they should have one more shift given them, the best and strongest into 6-inch pots, the weaker ones into one size smaller.

This will carry them over the first year of their existence very well; in fact, better than if in larger pots, for if a Dracæna has a superfluous amount of soil about its roots when winter comes on many of them will decay or become unhealthy. I attribute this to the inability of the plant to assimilate the moisture in the extra amount of soil so quickly as it should do, and yet a goodly amount is needed if the plants are to be kept healthy and growing; consequently, a plant that has well filled its pot with roots will take up this moisture in a free manner, and reap the full benefit of the same. If the plants are required for decoration, whilst in a comparatively small state, see that every facility is afforded them of becoming well established before they are used at all; there will not then be so much danger of the roots perishing by the change from their growing quarters to an atmosphere that is not so congenial to their well-being.

Dracæna Godseffiana.

Insects.—Of insect pests the most troublesome are the white thrips, which, if left undisturbed for a little while, will sap the very life out of the foliage, leaving it of a sickly yellow colour. These thrips generally congregate in groups until they increase to such an extent as to cover nearly all the underside of each leaf. Fumigation with Tobacco-paper, not too strong, for three nights in succession will destroy most of them; but if time can afterwards be given to sponging each leaf carefully, then a good clearance may be made for a long time to come where a fairly moist atmosphere can be maintained. This insect is most troublesome when the plants are near to or, perhaps, just over the hot-water pipes; in such places it increases rapidly. Black thrips are also very destructive, and must be well sought after before they get too numerous; on the darkest coloured kinds this thrip is not so soon recognised unless a sharp watch be kept. Red-spider will at times attack the foliage, but it is mostly to be found on large-sized plants, for which it either has a preference, or it is that plants of extra size escape the beneficial effects of the syringe more than the smaller ones.

Sponging the foliage with soft-soap and water in which a little sulphur has been well mixed is about the best remedy. Green-fly, when found on Dracænas, is generally located on the leaves that are not expanded. The black-fly is, however, the most troublesome and likewise the most difficult to exterminate; this, too, will attack the unfolded leaves and very soon damage them. After a good fumigation it is a capital plan to make a mixture of soft-soap and Tobacco-water, of moderate strength only, and then with a camel's-hair brush the points where the fly congregates may be moistened, and each plant afterwards dipped into clear water. This operation should be repeated after a week or two to clear off any young stock. Slugs and a small species of snail are very partial to these plants, and will in a few nights do a lot of harm if they are not caught. They are not often trapped easily. Sometimes they take up their abode in the axils of the leaves, where they are not so readily seen or even possibly suspected. Baits should be laid for them at the base of each plant, and a close search made at night when they are feeding. In troublesome cases each plant should be examined carefully in the daytime, for the insects will at times be found around the exterior of the pots and on the surface between them. The search for these troublesome pests should be persevered in until they are exterminated, for it is annoying to see a well-grown plant disfigured just as it is attaining a useful size, with well-coloured leaves, for which sort they have a decided preference. As a remedy against the depredations of insect pests in general it is an excellent plan to have a bag of soot (that has been taken from a chimney, the fireplace of which has not had coke burnt in it so as to be impregnated with sulphur fumes) always kept in the water-tank. This not only acts as a preventive, but it is also a capital manurial agent,

imparting a darker colour to the foliage of young plants.

D. Godseffiana, the kind illustrated, is a native of Lagos, in Upper Guinea, where it was discovered in 1892. It forms quite a shrub a yard or more high, and with a little attention in the way of pruning or pinching it will make very compact growth, crowded from top to bottom with leaves. The colour of the latter is deep, glossy green, mottled with creamy-white. The flowers are small, greenish-white, and they are succeeded by red berry-like fruits, from ½ inch to 1 inch in diameter. Cuttings of the branches root readily. J. H.

OUTDOOR PLANTS.

NOTES FROM AN ARMAGH GARDEN.

Already several of our autumn-flowering plants are in bloom, and consequent on many of them being well established they are looking remarkably well.

The new Sunflower Miss Mellish has made rampant growth, overrunning its less sturdy neighbours with scant ceremony. However, we are inclined to regard this fault indulgently in consideration of the lavish supply of long-stemmed, semi-double, golden-yellow flowers which it will shortly afford. Another very handsome Composite—single, but of even a deeper shade of yellow and earlier in bloom—is Heliopsis scaber major.

Coreopsis lanceolata monstrosa is a charming flower for cutting—far finer than the type.

Meconopsis cambrica plena, the double form of the Welsh Poppy, has been in bloom for a long time. It has produced seed, some of which I have already sown.

Geum Ewani and G. Heldreichi have both flowered. Their colour is certainly beautiful, but very much like that of G. miniatum, the form of whose flowers I prefer. A very pretty variegated-leaved sport of G. miniatum has originated here; the ground colour is a soft yellow, closely dotted over with green spots and markings.

Platycodon Mariesi alba came into bloom in August. It has large, effective, bell-like flowers, white, beautifully veined with blue.

Erigeron grandiflorus albus is a plant which I have only recently added to my collection. I do not think it is as well known as it deserves to be. The flowers are large, Daisy-like, not pure white, but with a delicate tinge of lilac. It has been in bloom for a long time, and is well adapted for cutting.

Aster sibericus is an extremely neat Michaelmas Daisy of moderate height, coming into bloom at the end of August, the flowers somewhat similar to A. amellus. On the 23rd of March last I sowed seed of

Papaver alpinum roseum. During August some of the plants came into flower. Two were of a very delicate pale rose shade, one was pure white, and the others have not yet bloomed. They form admirable subjects for filling up vacant spaces in the rock-garden. Among

Grasses conspicuous here just now is a variety of Pampas Grass, which has formed a very ornamental tuft. It has not bloomed, but its graceful form, added to the lines of green and gold colouring, make it a very attractive plant. Eulalia japonica variegata and Eulalia gracillima are both effective and handsome Grasses. The former looks well as an isolated clump, the latter occupies an elevated position on a rock-garden, where its graceful form is seen to advantage.

Apera arundinacea (the Pheasant's-tail Grass), planted some time ago in sheltered spots in a rock-garden, has made good growth, and harmonises well with other subjects—with a Japanese Maple, which is in itself a beautiful object—this slender Grass, growing through and intermingling with it, has formed a very charming combination. The graceful, arching spikes of bloom afford very elegant sprays for vases and other decorations.

J. McWalters.

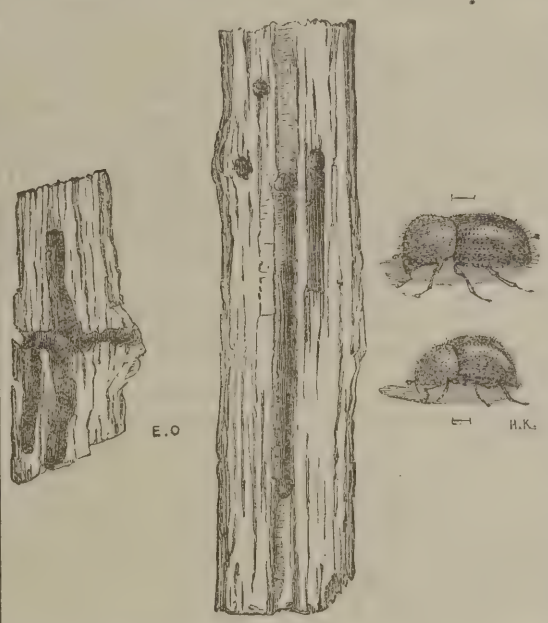
Œnothera prostrata.—This slender and prostrate Evening Primrose has, compared with its other parts, good-sized yellow flowers and plenty of them, and also affords a long succession. Just now, however, the plants have another pleasing feature, the leaves being a warm brick-red and in some cases almost scarlet. It is true such leaf colouring cannot be relied upon, but still, to those who value leaf-tints, it may be well to note the plants with a tendency thereto. I have had more than one, and very dissimilar, plant sent to me under this name. The true plant quite justifies its name, and never grows higher than 9 inches here.

Parnassia palustris.—This pretty little bog plant was in full bloom last week when I saw it on the Island of Mull. To grow it on a rock-garden the shady side should be selected, and the place for its reception should be prepared by making an excavation to be filled with peat and decayed vegetable matter, regularly watered.—W. H. L.

GARDEN PESTS.

THE APPLE-BARK-BEETLE (XYLEBORUS DISPAR).

This insect is another beetle belonging to that very destructive family to trees and timber—the Scolitidæ, of which I have already described two members, the Elm Scolytus and the Pine-beetle. This insect is quite as destructive to the trees that it attacks as those I have just mentioned are to Elms and Pines; but it is fortunately not so common as those beetles.



Apple-bark-beetle, showing its destructive work.

Until quite within the last few years it was considered a rare insect in this country, although comparatively common on the Continent. Besides Apple-trees, it also attacks Plum and Pear-trees. The insects are known in America by the name of shot-borers on account of the holes they make in the bark, which look as if they had been made by shot. The scientific name of dispar has been given to it on account of the great difference there is in the general appearance of the male and female, a point I shall again allude to later on. The beetles appear to select stems or branches about ¾ inch in diameter. They then gnaw a round tunnel or gallery nearly if not quite into the centre of the branch, and then work upwards or downwards for about 1½ in. in length, often boring along the pith of the wood. The females lay their eggs in chambers they form in the galleries. The eggs are said to be laid in a heap, and as soon as the grubs are hatched they make their way into the gallery, and feed on the exudations of sap from the sides of it, which form a white incrustation. At times the sides are coated as well with a fungoid growth, on which the grubs also feed. When the grubs are full grown they become chrysalides in the galleries in which they have spent their lives, and in due course the beetles appear. The grubs, and subsequently the chrysalides and beetles, are packed in the galleries one after the other as close as they can be. One observer counted no less than thirty in one piece of wood only 2 inches long. The grubs are hatched about the end of May, and are full grown in about a fortnight, and in the course of another ten days or so the beetles emerge from the chrysalides. They appear to remain for several weeks in the galleries, by which time their various parts have become quite hard and they have assumed their proper colour. The means of destroying this insect are decidedly limited. The best thing to do is to cut off the branches that have been attacked and burn them. If the stems of quite young trees are bored by these insects they should be cut down and treated in the same manner, and the sooner the better, as they will never be of any use, and are a source of infection to other trees. In order to prevent the beetles from attacking a tree the best thing to do is to coat the tree with some wash or dressing that will not injure the bark, and at the same time be distasteful to the insects. The American authorities recommend a coating of thick whitewash with some Paris-green in it, or soft-soap thinned down to the thickness of paint, with a strong solution of washing-soda in water. This soon dries if applied on a fine morning. The male and female beetles, as I have already mentioned, are by no means exactly alike; the male is only 1-12th inch in length, and is flatter and broader in proportion than the female, which is ⅓ inch in length, narrower and more cylindrical in form, and her forebody is larger and rounded, giving the insect a somewhat humped-back appearance. Both sexes are of a dark reddish-brown or nearly black colour, and are covered with fine, short hairs. The wing-cases of the male are rather redder than those of the female. The grubs are white, with the joints of their bodies very well defined. By the kindness of Miss Ormerod I am able to give the figures of the insects and sections of wood bored by them. G. S. S.

Rape-cake for wireworm (*A. Read*).—Any Corn or hay merchant would procure you some, even if they had not got it in stock. If you want to use it as a preventive, the ordinary Rape-cake is of no use. You must be sure and get the karachi or Indian cake which is made from Mustard-seed. The wireworms are very fond of the ordinary Rape-cake, and it is used to attract them from the plants by burying small pieces near them. Slices of Turnips, Mangold, Carrots, or Potatoes are useful traps. Each piece should have a small wooden skewer stuck into it, so that it may be the more easily found and handled. These traps should be buried near the Carnations, and you should examine them every morning.—G. S. S.

Rape attacked (*H. Bastow*).—Your Rape is attacked by one of the Turnip-flies or Turnip-flea-beetles. A strip of newly-painted or tarred canvas or sacking nailed to a lath will catch a large number of them, as they spring up when they are disturbed and are caught on the sticky canvas. Wetting the plants well with a mixture of ¾ lb. of soft-soap, the extract from ¾ lb. of Quassia-chips, and 10 gallons of water is very useful.—G. S. S.

Poor Rosa rugosa fruits.—I have carefully examined the hips from your Rosa rugosa and cannot find any signs of fungus or insect injury. The whole shoot seems to be not so luxuriant as it should be; the leaves are small and poor. Ripening fruit seems to take more out of a plant than anything else. Is the plant too dry, or is it in such poor condition that it is unable to ripen its fruit? I cannot suggest any other reason.—G. S. S.

Selection of Carnations.—In your issue Aug. 7, page 327, "J. D. E." keeps well within his own list, but fails to acquaint himself with those coming from the rural raisers which are making their mark and rising in the public estimation. No one who loves Carnations should be without the following, which I warrant will equal, if not surpass, the best of their colour named in issue above: Mrs. D. Dunlop, charming large white; Queen of Yellows, brilliant large yellow; Magnetic, rich, light coral-pink, waxy petals, splendid form, and does not fade. Add to these the older sorts which cannot be beaten—viz., Monarch, Gneist, Curtius, and Stambuloff, a few from list referred to by "J. D. E."—and a good selection will have been got.—Kelmore.

GARDEN WORK.*

Conservatory.

This is more or less a transition period. Summer flowers are going off and autumn flowers coming in. The early-flowering Chrysanthemums will make a great show if well done. Madame Desgrange is still a force in these late summer and autumn decorations under glass, and there are numbers of early-flowering varieties that will come in useful when the Fuchsias and Tuberous Begonias go off. All plants will require as much light as possible, and shade must be sparingly used. For this reason it will be necessary to reduce the climbing growth on the roof by degrees to meet the rapidly decreasing daylight. Most effective during the autumn are good clumps of Vallotas or Scarboro' Lilies. Plants outside should now be housed. I always think a month or six weeks outside ripens the bulbs better and increases the number of spikes. Valuable specimens of hard-wooded plants should now, if not already done, be returned to the house provided for them, but give free ventilation night and day for some time, so that the change from outside may not be felt much by them. It is generally necessary at this season to throw out anything which is old or showing signs of wearing out. Most growers are continually bringing on young plants to take the place of the invalids. Unless the specimen showing signs of decrepitude is a rare or valuable one, it is better to get rid of it on the rubbish-heap, and give more attention to younger plants coming. In many gardens there are too many of these dilapidated plants, which no amount of skill can bring back to condition again. They may linger on for some time, but these lingering plants distress a good plant grown, and, unlike soft-wooded, hard-wooded things, can be rejuvenated by cutting back. Early-flowering bulbs should now be in their pots Daffodils and Tulips, grown merely for cutting where quantities are required, may be grown in boxes. Those of 2 feet by 1 foot are a handy size for moving about, and they need not be deeper than 5 inches. Tulips grown in boxes may be taken out if required for filling vases in the rooms, without showing signs of removal. Market growers often do this with advantage, Tulips especially. The best forcing sorts are so cheap now it does not much matter what becomes of the bulbs after they have flowered. No fires will be required at present, but the apparatus should be put in order if any repairs are needed. Camellias must not be allowed to get very dry at the root, or the bulbs will drop. Habrothamnus fascicularis is a beautiful winter-flowering plant of semi-climbing habit.

Stove.

If heat-loving subjects such as Ixoras are grown fires must be lighted now; in fact, fires will soon have to be used under any circumstances where stove plants are grown. Do with as little shade as possible. Plants in flower will last longer in condition if a light shade is used when the sun is shining brightly, and we often have bright days in September; but shade now only weakens growth, and checks the ripening of the summer-flowering plants, such as Allamandas, etc. Caladiums are losing their freshness, and when the leaves begin to fade give less water. That pretty little Caladium argyrites is a charming drawing-room and dinner-table plant, and when started late may be continued in good condition through the autumn. The hybrid forms of Streptocarpus are pretty plants when well grown. I have recently seen some very effective plants in 7-inch pots. Both these and Gloxinias may be had in very fine specimens if pot-room enough is given and a fairly rich soil used, but the soil should be porous enough for the water to pass away freely, as thus stimulants may be given to increase the size of both flowers and foliage.

Ferns under Glass.

This is a good time for sowing spores. Sow in pans or pots and cover with glass. If really good loam can be obtained, after putting in the drainage fill the pots to within an inch of the top, and ram down firmly, give a good watering, and sow the spores evenly on the damp surface. They will grow, if the conditions are right, without any covering, but a little sprinkling of sand may be used. It is of does no other good it helps to keep the surface sweet. All watering should be done by dipping the pots in a pail or tank, so that the water ascends from below. Good spores will grow if kept in an equable condition as to moisture. Where failures occur it may generally be traced to dryness where the spores are bursting into growth. They must, of course, have a shady position, and a temperature not much under 60 degs. Though shade is necessary for Ferns in the early stages of growth, older plants which are expected to be taken indoors during the autumn or winter will be better without shade now. Whoever has much decoration to do in winter should grow a lot of the hardy Pterises, Nephrolepis exaltata, Adiantum cuneatum and elegans. A. decosa also stands well, but is not so popular as the smaller-fronded kinds. Cyrtomium falcatum is a useful hardy Fern. I have seen it stand outside on a rockery in a sheltered garden. Pteris Wimsetti is one of the best of the crested Pterises, and easily raised from spores. Though so very light as to be carried about by the movement of the atmosphere, Fern-spores will keep in a growing condition for a long time if kept dry. I do not know what the limit may be, but I have raised young plants of Adiantum cuneatum from spores which had been kept ten years. Microlepia hirta cristata is a very effective Fern, and makes a good specimen. Dicksonia tantarctica and Alsophilla australis are useful in a comparatively small state, but they must have plenty of water.

Mushroom House.

This house should be thoroughly cleansed and white-washed previous to making beds therein. September-made beds invariably do well, and several beds should be made up now. The manure should be had fresh from the stable where straw litter is used. There are two ways of doing the preliminary work. The most commonly practised is to spread the manure in an open bed to dry, turning it over every two or three days for a fortnight or so; the second way is to mix from one-fourth to one-fifth of loam with the manure. Leave it in a ridge-shaped heap till the heat rises, then intermix and make up the bed.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

Outdoor Garden.

Make arrangements for obtaining a stock of bulbs to beautify the beds and borders next spring. One of the brightest things in winter are the Winter Aconites, and they are cheap enough to plant in large masses on shelving banks under trees, where they may remain undisturbed for years. If the tree-roots are near the surface put on a few inches of good soil to give the Aconites a chance, and plant the bulbs about 2 inches deep, from 2 inches to 3 inches apart. Tulips, either in separate colours or in mixture, may be planted in masses; the early-flowering varieties may be planted towards the end of September, but the florist varieties and late Tulips generally will do well if planted the first week in November. White Lilies (candidum), if moved at all, should be planted at once. Narcissus of all kinds may be planted from this to the end of October. As regards depth of covering, they may go in an inch or two deeper in light land; from 3 inches to 4 inches is a good depth for the Narcissus family. Two inches deep will be enough for Scillas and Crocuses; the latter are very pretty on Grass, either in separate colours or in mixture. Seedlings of hardy plants that are still in the seed-beds, now that rain has fallen copiously, may be pricked out to get strong. Transplant rooted Pinks from frames and handlights. Dahlias and other plants requiring support must be neatly and frequently tied. Thin the buds of Dahlias to secure fine blooms. Continue the propagation of bedding plants. "Geranium" cuttings will be scarce this season, and late growths will be too soft to strike; but if the old plants are lifted before frost comes there will be plenty of cuttings in February.

Fruit Garden.

Expose Late Peaches on walls by removing a leaf or two if necessary, as bright colour is important. Young Peaches under glass which are too luxuriant may have the extremities of the roots lifted, replacing them in good loam Peaches do best in a firm border; there should be no digging among the roots for any other purpose. In making new borders for Peaches work in some old plaster or mortar, unless the soil is underlaid by chalk or limestone. Once get the trees into bearing and there will be no more trouble from over-luxuriance. Where possible it is a good plan to take the light off Peach-houses as soon as the Peaches are gathered and the growth finished. Some little thinning of the wood may be done at the same time if at all crowded. Where the roof is a fixture keep the ventilators open night and day till the leaves fall, or till the house is closed for forcing if not frosty; the more perfect the rest the stronger the buds will break and the more likely the blossoms are to set. Very few Peach-houses are altogether free from red-spider this season, and a good wash with the hose or engine will be beneficial. Finish potting the Strawberries for late forcing; stand thinly on ashes, and keep the plants free from weeds and runners. The plants must not be allowed to suffer from want of water, but if potted in the right kind of stuff the crowns need not be excited by liquid-manure till the blossoms are set. A little fire will be useful now in late vineries; it gives the necessary finish to both fruit and wood, and permits of a very free ventilation, except when raining. During a spell of hot weather the fires may be allowed to go out. It is useless attempting to keep Grapes in leaking houses. Either have the houses in proper repair, especially as regards paint, or cut and bottle the Grapes as soon as ripe.

Vegetable Garden.

Plant out Cabbages when the plants are large enough and then they get established before winter. For very early use plant a few on a south border 1 foot apart. They will not all turn in at once, even if a fairly true stock is grown, and as soon as the Cabbage is cut pull up the stems; this will give room for those coming on, and all may be cleared off before the plants in the open quarter are ready. If the land is in good heart the ground need not be freshly dug for Cabbages. On fairly firm ground the plants turn in sooner, and early in the year no one cares for large Cabbages. Break up the soil deeply with a hoe. Dig drills 3 inches deep and plant in the drills. Where the tops of Potatoes are ripe take up the crop; there is a good deal of supertubering this season, and where the tops are still green and the tubers grown out they must, of course, be left till the skins are set. Fill up every border in a good aspect with Lettuce and Endive. Thin winter Spinach to 3 inches or 4 inches apart, and use the hoe freely when the surface is dry. Earth up Celery in succession; the white should be done first. Trim away the small offsets which sometimes grow round the base of the plants. Sprinkle the foliage of Celery with something distasteful to the fly to keep them at a distance. Soot is useful in small quantities, equally distributed. A mixture of Sunlight-soap and Tobacco-liquor is also effectual if used in time and repeated once or twice. I am not in favour of much defoliation of Tomatoes, but the season is advancing, and a few leaves must be cut off now or shortened back to the front pair of leaflets. If Marrows and Ridge Cucumbers are to keep in bearing till frost comes the fruit should not be allowed to get old. E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 6th.—Put in more cuttings of various kinds, including bedding plants and hardy edging plants, such as Santolina incana, Euonymus radicans variegata, and Golden Thyme. Potted up a few plants of Alternantheras for stock purposes. Planted out more Lettuces and Endives on south border. Lifted the roots of Peaches under glass which are making rather too much wood. Put in cuttings of Violas. Lifted Marie Louise and other Violets, and planted in frames for autumn and winter flowering.

September 7th.—Carted in a lot of loam for potting, also a heap of cow-manure on a layer of loam and surrounded by the same to keep in the heap for twelve months or longer, till it gets mellow. Looked over Chrysanthemums daily to remove side-shoots, select buds of late varieties, especially incurves, and trap earwigs. A few spare tops that were put in as cuttings last month have rooted and been shifted into 5-inch pots. These will carry one large bloom and make useful room plants.

September 8th.—Moved Azaleas and other hard-wooded plants into the house. Thinned climbers in conservatory. Put in cuttings of various Irises and Honeysuckles. Potted bulbs of various kinds for forcing and plunged them outside in ashes. Tied and stopped Cucumbers. Gathered Williams' Bon Chrétien Pears. Earthed up Celery for succession. Sowed Radishes and Mustard and Cress. Replanted Box-edgings.

September 9th.—Put in cuttings of Roses under north wall; mulched between rows with leaf-mould. Planted Belladonna Lilies in front of a plant-house close to the wall; added peat, leaf-mould, and sand to the soil, and covered the bulbs about 5 inches deep. This is a lovely autumn flower, and no trouble, because of its permanency, if rightly managed at first. Made Mushroom-bed in Mushroom-house.

September 10th.—Pricked off Herbaceous Calceolarias. Removed laterals from late Vines. Covered inside borders with long litter to check evaporation and keep down dust. Commenced doing a little root-pruning to young Peaches on south wall by lifting the roots nearer the surface; watered the roots in and mulched with littery manure. Gathered various early Apples and stored in fruit-room. Cleared away old Peas.

September 11th.—Thinned autumn-sown Spinach. Looked over Tomatoes to remove a few leaves or parts of leaves to let in the sunshine to ripen the fruit. Potted up Solanums and Arum Lilies. Cut round Salvias and Eupatorium with the spade preparatory to lifting. Potted up Azalea pontica from reserve bed for forcing Potted a lot of Azaleas imported from Belgium, chiefly Deutsch Perle, for forcing.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1506—**Peas for flavour.**—Will you kindly state in your next issue the names of the six finest Peas for their flavour: also, what is the greatest quantity of Peas in one shell that has as yet been recorded?—A. F.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1507—**Changing colour of Hydrangeas** *(W. J. R.).*—In order to get the pink-flowered Hydrangea to produce blue flowers it is advisable to grow the plants in peaty soil, and water them with sulphate of iron during the summer.

1508—**Harrison's Musk** *(H. K. C. Law).*—The roots of the Musk are injured by some insect in the soil. One month before planting dig the soil deeply over, sprinkling with it fresh, unslaked lime; repeat again at planting time.

1509—**Tomatoes** *(Reader).*—Tomato-plants from the first should not be allowed to produce side-shoots; they should be kept hard pinched. The bloom comes out of the main stem of the plant. It is very wrong treatment to allow them to grow at all.

1510—**Conifers to form a screen** *(T. N.).*—The following conifers are useful for this purpose: Pinus Laricio and P. L. nigricans, Pinus pinaster, Abies pectinata, Pinus sylvestris, Pseudotsuga Douglasi, Cupressus Lawsoniana, C. Nutkaënsis, and Thuja gigantea.

1511—**Pruning Portugal Laurel** *(Iron-bridge).*—The Portugal Laurel may be pruned at almost any time. It stands the knife well. As your trees are bearing such a good crop of berries, it would be a pity to cut them now. Wait until the crop is over, and prune either in spring or summer

1512—**Myrobella Plum for making hedge** *(W. P. M.).*—It is a grand thing for making a good hedge in a very short time. It grows splendidly in exposed positions and in cold wet soils, and on dry hungry ground makes a much better hedge than many subjects used for that purpose. If regularly cut it becomes quite impenetrable.

1513—**Tree Ferns** *(K.).*—It is quite impossible to place names to the small pieces sent to us recently. It is quite difficult enough to make out the smaller kinds from such diminutive specimens, and when you give us such a task we must decline it with thanks. You do not give us the slightest idea of the plants, or any one thing to form an opinion upon.

1514—**Cutting down Guelder Roses** *(Balnacarron).*—The bushes may be cut down soon after flowering

and unless the wood is very hard they will soon break away again. Why not raise a stock of young plants? Cuttings of half-ripened wood put into gentle heat, or even placed in cold frames and protected from the sun, would soon root and form good bushy plants.

1515—**Conifers for a slope facing N.N.W.** (*G. F. A.*).—Any or all of the following conifers would suit your purpose: Picea excelsa, P. morinda, Abies Nordmanniana, A. pectinata, Pinus austriaca, P. Laricio, P. sylvestris, Cupressus Lawsoniana, C. macrocarpa, C. Nutkaënsis, Thuja gigantea, Abies Douglasi, and Sequoia gigantea Planting may be commenced about the end of September.

1516—**Potato** (*H. C. Stoke*)—Your Kidney Potato is without doubt an Ashleaf. There are, however, various selections in commerce, such as Wyatt's, Veitch's, Lincoln, and others, all very much alike, and yours is one of them. The Ashleaf is early, flesh slightly yellow, and exactly the shape of sample sent. Although over sixty years in commerce, it is still one of the very best flavoured. Yours is an extremely nice clean sample.

1517—**Transplanting late batch of Autumn Giant Cauliflower** (*S. S., Hants*).—It is difficult to say whether you would be successful with your proposal. We are very much inclined to believe that a lot of spring-sown plants could not be retarded until the spring, twelve months later; the chances are they would "bolt." Raise a batch of seedlings of an early Cauliflower and grow them on in the usual orthodox manner.

1518—**Apple Cox's Orange Pippin** (*T.*).—It depends very much upon the season as to the time for gathering this fruit. Mine is now ready, but at other times it will hang until the end of September. If this or any other Apple is gathered before being ripe the fruit shrivels. A good test of ripeness is to pick a fruit from the most shaded part of the tree, cut it open, and if the pips are brown all the crop may be safely gathered.

1519—**Scilla sibirica and Crocus** (*M. A. T.*).—It is as well to plant only one variety of bulb in a pan. Even Crocuses of different colours rarely bloom so exactly simultaneously as to be at their best on the same day, which is what is required if they are planted in the same pan. Scilla sibirica and Crocus would be still less likely to give satisfactory results in this direction than the two varieties of Crocus. The best plan would be to plant a pan of each.

1520—**Hedge of Gooseberries** (*Ebor*).—It is not likely that you will be able to get bushes of a bearing size trained in the way you propose. There is, however, no difficulty in starting with young trees to bring them into the form you want, as any nurseryman would make a suitable selection for you. Early Sulphur will probably make the best cordon form, as the growth is stiff; but others will not be difficult if you commence training the branches while they are young.

1521—**Gathering Pears** (*B.*).—It does not answer to pick Pears unripe, for they shrivel and are not worth much. On the other hand, it is not well to allow the late Pears to hang too long. Pitmaston Duchess is not a late Pear, and should be gathered as soon as the pips begin to get brown. Maréchal de la Cour is also an October Pear. Late varieties, such as Josephine de Malines and Knight's Monarch, should be gathered about the end of September; there is nothing gained by letting them hang later.

1522—**Tea Roses** (*J. W.*).—There are many Tea Roses as large as those you mention, but it is as well that you should know that many of the largest have a somewhat pendent habit—that is, the flowers droop when fully expanded, and what is wanted is that they should stand erect, as in the case of such varieties as Perle de Lyon. You will find the following good large flowers, and in most cases freely produced: Comtesse de Naidaillac, Jules Finger, Luciole, Mme. de Watteville, Mme. Jules Margottin, Sombreuil, and the Bride.

1523—**Melons splitting** (*J.*).—The most frequent cause of Melons splitting is a damp, confined atmosphere. When an indication of splitting shows itself the structure in which the plants are growing should be ventilated at night, and less water given to the roots and foliage. This treatment will invariably prevent any more fruit cracking. Then is the sudden admission of air after the frame or house has been closed for several hours that causes a contraction of the skin, and the more rapid the change in the internal atmosphere the more the fruit cracks.

1524—**Rock Cyclamen** (*Loveday*).—Hardy Cyclamens, though they do well in rock-gardens, are not exclusively rock-plants; neither are they alpines, though some grow in Switzerland. C. coum, C. europæum, and C. repandifolium are the most fitted for open-air culture in this country. The corms may be planted in October in a well-drained border, and a mulching of loose leaf-mould given, which should be allowed to remain until the following spring. The corms may either be taken up and replanted in October or left undisturbed.—W. F.

1525—**Plants for shady garden** (*T.*)—Try Gaillardia grandiflora, Delphiniums, Coreopsis grandiflora, Lupines, Lychnis chalcedonica, the Welsh Poppy (Meconopsis cambrica), Scabiosa caucasica, Double White Rocket, Antstemons, Lily of the Valley, Christmas Roses, the Double Periwinkle. Many annuals will do fairly well in partial shade—Blue Cornflowers, White Antirrhinums, and Scarlet Zinnias, for instance—while the biennial Lumbines and Foxgloves are seen at their best beneath overshadowing boughs, and grow most naturally under such conditions.

1526—**Pruning Apple-trees, etc.** (*Amateur*),—Both Apples and Pear-trees are pruned after the leaves have fallen, and also in the summer, if dwarfer trained. Large bush or standard trees have their branches thinned in the winter. Cherry-trees are also pruned in the winter, cutting back to a couple of buds of all shoots, and shortening strong shoots about one-fourth of their length. Remember that strong growths hard pruned only serve to produce strong growths again. You do not say what kind of tree your Cherry is. Such information should always be furnished.

1527—**Grapes splitting** (*R.*).—Gros Colmar Grapes are not so much tendency to split as some others have. The Vine is grown in a pot the cultivator has complete control over the roots and ought to be able to prevent any variety of Grape from splitting. It is caused by the roots taking up too much moisture—that is, if the berries are in perfect condition. The cure for it would be to withhold water as soon as the berries show signs of the skin cracking. Rust or mildew on the skin will also cause the berries to burst, as the skin on the diseased part will not swell at the same rate as the healthy part.

1528—**Gas-lime and wireworms** (*Novice*).—We are not sure that gas-lime is the best material to destroy wireworms, but farmers have great faith in it and use it extensively. They put on about 15 cwt. to the acre. A good coating of soot applied so that the rain may wash it in at once is excellent. The ground should also be frequently harrowed and rolled, which exposes the wireworms to birds, and the rolling may kill some of them. They do not like guano, and this, if washed in by rains, is a good remedy. We advise stirring up the ground frequently during winter, and a great many of the worms would be removed with the Potatoes.

1529—**Parsley unsatisfactory** (*Amateur*).—Parsley suffers from drought in poor soil, and a check sometimes leads to canker or insect attacks. Wood-ashes has good effect on keeping Parsley free from canker at the collar, and watering with soap-suds tends to prevent attack from insects. It is too late to sow again now, but it is possible if some of the roots were taken up, dipped in strong liquid-manure, and planted on a south border, they would start away in the fresh soil and make a lot of useful growth before winter. If the plants are cleared where they stand of all discoloured leaves, and well soaked with soot-water, a beneficial change will be effected.

1530—**Vines in pots** (*Arthur*).—Seven-inch pots are not large enough for Vines to fruit in. If they are strong the pots should not be less than 11 inches across the top; the weaker canes would do in pots an inch less. If the plants are in free growth at the present time they ought to be potted at once, but if the canes show signs of ripening at the base they ought not to be potted until next February. When the canes are well ripened—say, towards the beginning of September—they should be stood out-of-doors at the foot of a south wall and freely supplied with water during hot and dry weather. The pots ought to be protected from frost during the winter with leaves or partly-decayed manure.

1531—**Vaporising** (*Basil*).—If, as you say, your Grapes are ripening well why want to use XL vaporiser? The result may be to injure the Grapes, unless the vapour be used very weak, when, if you have aphis or red-spider on the Vine, weak vapour may do them no harm. Besides, the vapour may affect the taste of the Grapes, as ripening fruit is very susceptible just then. Would it not be wiser to get off your crop of Grapes as fast as they ripen, and then give the Vines two or three good fumigatings to destroy aphis, and again, though less strong, early next summer when the new leafage has become stout and will endure vaporising? Had your Grapes been green no harm would have been done them.

1532—**Summer-pruning Wall-trees** (*C. E. N.*).—Wall-trees summer-pruned should be gone over from middle to end of July. If done too early all the buds are liable to burst into growth. They should be cut back to about four buds. The extreme one will then make growth, and may be pinched back to one leaf. The dormant buds will then plump up and become fruit buds. The winter pruning should be cut back to about two buds only on each spur. It will be needful for you in the winter to cut back all but one shoot to a spur; indeed, you may do it at once, and then next summer take the course advised. If your trees are too vigorous, partial root-pruning may be needful. Do that in October.

1533—**Woodlice v. Mushrooms** (*J.*).—This is a very troublesome pest in the Mushroom-house, and cannot be easily got rid of. The best plan is cleanliness. In the summer time, when the house is not in use for the Mushrooms, have it well cleaned out; remove every scrap of rubbish that might give them shelter. My house is entirely fitted up with slate slabs on iron supports for the Mushroom-beds. If this troublesome pest appears in the winter it must be trapped by putting a bait of boiled Potato in a flower-pot laid on its side. A little dry hay in the pot will attract the woodlice. They go in to feed at night, and, feeling comfortable in the dry hay, they remain, and may be shaken out and destroyed next day.

1534—**Roses against a wall** (*W.*)—Your wall is not high enough for such a strong-growing Rose as Gloire de Dijon. A height of 20 feet suits it better. Instead of cutting back the strong shoots now, cannot you bring them down in a more horizontal direction? They will then flower next year at nearly every eye along the branch. If you cannot do this you must cut off the tops down to the height of the wall. At the same time, put in a plant of Marie Van Houtte by the side of the other, and in a year or two remove the one you now have. If yours is a good soil you will always have the same trouble that you complain of now, and Marie Van Houtte is nearly as free to bloom as our old friend the Gloire.

1535—**Vines, etc.** (*A Reader*).—Grape-Vines carrying bunches on their lateral or side-shoots should not have more than two leaves beyond the bunch at the most, the rest of the shoot being hard pinched. All other young growth should be hard pinched also now to give the crops all possible light. Red-spider may be destroyed by using XL vaporiser, and by shutting up the vinery full of moist air or vapour each night, but you may by so doing render the Grapes useless. The spider should have been destroyed whilst the Grapes were still green. After the Grapes are cut, then vaporise the house two or three times. If you start your Vines with a moderate heat in February next you should have ripe Grapes in July. Aralia Sieboldi wants no heat now, and very little (say, from 45 degs. to 50 degs.) in the winter.

1536—**Tomatoes falling** (*C. A. B. G.*).—We do not quite gather from your note and the sample of flowers sent whether you complain of the flower-trusses falling off bodily or the flowers falling separately. If the trusses of bloom fall off that would be very unusual, and must be caused by some woodlice, beetle, or other insect eating the stems through. If the plants are in bad health through overwatering and the leaves and stems turn yellow, then the falling could be accounted for. But if the individual flowers fall off, that is common when the air of the house in which they are growing is very hot and dry. The best remedy is to sprinkle the floor of the house occasionally, to give more air so as to reduce the temperature; and, not least, to tap the flowers over a sheet of white paper to catch the pollen, and then to use the pollen to fertilise the pistils of all the flowers.

1537—**Growing bulbs in a glass bowl** (*James Blinn*).—Bulbs of the Chinese Sacred Lily succeed remarkably well in bowls if planted in the following manner: Place 1 inch or 2 inches of clear gravel or pebbles in the bottom of the bowl, and on this arrange the bulbs with care. Pour in sufficient water to cover the pebbles and also to rise about ½ inch up the bulbs. As this is absorbed make up the loss from time to time. When completed the bowl should be placed in a cupboard to encourage root-formation, returning it to the light when once growth commences. Crocuses and Hyacinths may be grown in damp Moss in a similar receptacle. Stand the bulbs on a layer of this material and surround them with the same, pressing them moderately firm into position We have never tried Scillas, but see no reason why they should not succeed under the same treatment.

1538—**Onion-fly** (*Anxious*).—Prevention is much better than cure when we come to deal with this troublesome pest to the cultivator of Onions, for when the maggot has once got into the Onion there is no way to destroy it—in fact, it will destroy the Onion. Therefore, the first step towards prevention is to get out all Onions as soon as it is seen they are attacked, and destroy them with the maggots to prevent their getting out, and turning into pupæ in the soil The flies are produced from the pupæ in early summer, and lay their eggs on the plant near the soil; the larvæ soon emerge from the eggs, and bore into the ground close to the Onion until they reach its base, when the work of destruction begins. Soot applied to the ground is a good thing; this and gas-lime may be dug into the ground in autumn, and the soot may be applied in the spring when the plants appear above ground. Water the plants with a solution of paraffin at the rate of 2 ozs to a gallon of water. Trenching the ground deeply in winter buries the pupæ out of reach, and they die when deeply buried.—T.

1539—**Manure for Roses** (*T. W.*).—Looking at the liberal way in which you treat your Roses, we think you will act wisely if you discontinue the use of pig-stye-manure, as it is of such a strong character that it is likely to promote undue luxuriance, and then severe frost might injure the plant. With regard to disbudding, we think it is an advantage if you remove the surplus buds as soon as they are formed. So many people allow the buds to get quite large before they remove them that they cannot judge correctly whether it is a good plan or not. The following twenty-four varieties of H.P.'s we selected last year from a first prize collection of seventy-two as the cream of the lot: Alfred K. Williams, Ulrich Brunner, Alfred Colomb, Henry Schultheis, Earl Dufferin, May Quennel, La France, Marie Beaumann, Marie Finger, Mrs. J. Laing, Her Majesty, Duchess of Bedford, Gustave Piganeau, Comtesse de Serenye, Mrs. Jowitt, Charles Lamb, Merveille de Lyon, Frances Michelon, Mme. Gabrielle Luizet, Marguerite de St. Amand, Duc de Rohan, Duke of Edinburgh, and Fisher Holmes.

1540—**Carnations** (*H.*).—Your Carnations, having rather long summer shoots, evidently have in them some of the tree or winter-blooming strain, and they are not well adapted for border work. This long, loose growth, however, characterises so many of the newer varieties in commerce. As you do not want to layer them—although, late as it is, that would be the best course, but not necessarily removing them—in any case you should fork or loosen the soil about the plants, then bury the long bare stems in it, and cause the leaves to cluster round the stems of the plants. If the stems of the shoots be slit as for layers they will emit roots. Top-dress with some fine old pot-soil. So treated you will get fine clumps of shoots and bloom next year. If you cut them off to make cuttings the plants will be almost worthless and the cuttings may refuse to root. A neat little book on vegetable culture, inclusive of exhibiting, is A. Dean's "Vegetable Culture," price 1s., published by Macmillan and Co., London, and the best modern book on the Dahlia is that of Dobbie and Sons, Rothesay, Scotland, entitled "The Dahlia," but its price is not stated. Write to them.

1541—**Plants for pool-side** (*Nil Desperandum*).—You would find London Pride (Saxifraga umbrosa) excellent for growing among the stones overhanging the water. It gives a beautiful effect when in blossom, and is never unsightly. The common Mimulus, yellow and red, would also grow in great luxuriance, and only needs to be kept in check. The Water Forget-me-not (Myosotis palustris) is a beautiful waterside perennial. The three plants mentioned will grow and flower year after year by the water, and the trailing Muhlenbeckia complexa may be planted to hang over the bank. The large-flowered Saxifraga Wallacei also flowers well in positions overhanging the water, and the bright scarlet Mimulus cardinalis has a very distinct effect. As for a flowering plant to grow in the centre of the pool, one or two of Marliac's Water Lilies might be planted, Nymphæa Marliacea chromatella (sulphur coloured), and N. M. carnea (flesh-pink), or N. Laydekeri rosea (crimson). The only other "free-flowering plant" that might succeed in 2 feet or 3 feet of water would be the Arum Lily (Richardia æthiopica), but this will live only in the most favoured spots in England out-of-doors.—S. W. F.

1542—**Peaches under glass** (*M. E. B.*).—It is very difficult to determine the actual cause of your Peach-leaves turning yellow, except on full examination of the condition of the border in which the roots are. No doubt the cause is to be looked for there. It is possible that you overdosed the border with manure-water, especially if given recently, as the summer wood being formed, too heavy a feeding is not desirable. But you should open a hole on the border and judge as to the condition of the soil. If you find it stiff, clammy, and sour, no wonder the leaves turn yellow. In such case, the best thing to do is to remove carefully with a fork all the surface soil, then get up all the roots, preserving them, and covering up with mats. Then excavate the bottom soil about 10 inches in depth, remove it, and replace with good soil from the vegetable quarters, and one-third added of turfy loam; also add wood-ashes and some old lime refuse. Relay the roots about 6 inches below the surface, and when the soil is filled in add to the top a mulching of long stable-manure. If inside the house give also a moderate watering of water, and others at intervals through the winter. You had better thin your fruit at once, and perform what is advised so soon as the rest is ripe.

1543—**Climbers for Fir poles** (*X. Y. Z.*).—To hide the poles and run over the top bars eighteen plants will be necessary—*i.e.*, one plant for each pole. Any of the undermentioned climbers will answer well. On one pair of poles, Jasminum nudiflorum, yellow, winter-flowering, and J. officinale, white summer-blooming, would look well. Of Clematises, four capital varieties would be Jackmani, violet-purple; Mrs. James Bateman, pale lavender, deeply veined; Montana, very free blooming, rapid grower; Fair Rosamond, blush-white, red bar. Passiflora cœrula and P. C. Constance Elliot are very distinct and handsome flowering climbers. Amongt Roses, Aimée Vibert, William Allen Richardson, fulgens and Blairi No. 2, are capital growers, very free-flowering, and possessed of good hardy constitutions. The Virginian Creepers must not be passed over lightly. Ampelopsis hederacea and A. Englemani are quick growers and flourish everywhere. Amongst Honeysuckles, the scarlet Trumpet variety, Lonicera sempervirens, is very beautiful. L. brachypoda aurea reticulata should be grown on account of its rich foliage, which is beautifully netted with canary-yellow. It is of rapid growth, and takes kindly to nearly all kinds of soils. Cratægus pyracantha is a grand berry-bearing plant, and well deserves a place. Wistaria sinensis is a free grower and good bloomer. Akebia quinata, Bridgesia spicata, and Bignonia grandiflora are also hardy climbers.

1544—**Allotment disqualified.**—A railwayman who lives at a level crossing rents from the railway company a piece of land which adjoins his garden. He enters this land in an allotment competition in connection with the local horticultural society, and the judge, in making his awards, disqualifies him because the land is not part of an allotment-field and is so near the house. Nothing is stated in the schedule of prizes issued by the society that allotments for competition must be in an allotment-field. Was the judge right in disqualifying the competitor?—C. F.

*** *This is one of those questions that cannot be answered unless one has the rules of the show. If it distinctly states that the ground is to form part of the quarter set apart for the allotment, then the judge is correct in disqualifying you, not otherwise.*

1545—**Diseased Nectarines.**—I enclose two specimens of Nectarines from an old tree which appears perfectly healthy and in full bearing order, but every year when the fruit is about to ripen the mould appears and destroys all the Nectarines. It is against a high south wall, with narrow coping. There is a garden path 2 feet from the wall. Rats worked round the roots some years ago. I have had the tree carefully watered, mulched, and fed, and cannot account for the mould, which appears just the same in dry as in wet weather. I have enclosed a few leaves to help you in your judgment, and shall be much obliged if you can tell me the cause and suggest a cure.—W. F. Walker.

*** *We think it is mildew which attacks your Nectarines; they crack, and mildew causes decay. Our advice is to well ripen wood, not to allow too much growth, and in early spring syringe with a sulphur solution, and use dry sulphur freely now and syringe when fruit is cleared.*

1546—**Tomato—fruit or vegetable?**—Would you kindly oblige by telling me whether a Tomato is a vegetable or fruit in this week's Gardening?—F. N.

*** *It may be regarded as either. Of course, it is a fruit, but it may be shown as either a fruit or a vegetable.*

1547—**Growth on Stag's-head Sumach** (*M. E. M.*).—The crimson "growths" are the fruits, and very ornamental they are.

1548—**Agapanthus and Myrtles** (*Mrs. R. Brise*).—Do this in spring, as then growth is commencing and the plants will get established quickly.

1549—**Old Raspberry-canes** (*R. P.*).—Transplant Raspberries as soon as ripened and leafless. November is a good time; you would be a little too early yet.

1550—**Striking cuttings of India-rubber-plant** (*J. H.*).—If you refer to our issue for February 6 you will find full and illustrated notes upon this.

1551—**Rose-leaves eaten** (*H. A.*).—We cannot say what has attacked your Roses unless you send a specimen; then we shall be pleased to help you.

1552—**Ripening Tomatoes** (*J. T. Bird*).—Leave them on the plants as long as they change colour, then cut them and place them in a warm, dry room—say, hang them up in the kitchen.

1553—**Moving Strawberry-bed** (*R. P.*).—There could be no better time than the present, especially if you only transplant the best of this season's runners. If these are not quite ready, wait a while; but do not trouble about the old roots.

1554—**Radishes to show** (*Linden*).—We have often seen Radishes so shown, but should consider them better placed among salads. It is a difficult matter to draw the line between some fruits, vegetables and salads—the Tomato, for example.

1555—**Single-handed gardener** (*Yorkshireman*).—We should not disqualify you, but society officials take very curious views upon the point. You must show in the general classes if prohibited from doing so in the single-handed gardeners' division.

1556—**Shortening budded shoot** (*W. H. H.*).—Yes, it is a good plan to shorten after the bud is well set and growth partly matured. Neglect of this often results in breakage at the point where the Rose-bud was inserted, especially if the transverse cut was made deeper than the bark.

1557—**Border for hardy plants and Roses** (*H. Sutton*).—Please let us know a little about the nature of your soil at present and we will reply to your query. So many soils could be made amply rich enough for your purpose at little trouble and cost, whereas others would need quite different treatment.

1558—**Plants for conservatory** (*W. W.*).—Get Cinerarias, Primulas, Azaleas, Camellias, Ericas, Roses in pots, half-hardy Ferns, Spiræas, Deutzias, and heaps more that we could not possibly find space to name. If you read our calendar notes you will frequently find hints that may assist you.

1559—**Roses for conservatory** (*W. W.*).—All climbing Roses would thrive here, but among the best are Reine M. Henriette, W. A. Richardson, Climbing Niphetos, and Maréchal Niel. These give a good change of colour. We would prefer a deeper box than usually found upon window-ledges. Hide these with pieces of Cork-bark, drain well, and use a rich, loamy soil.

1560—**Sowing Hardy Annuals in autumn** (*C. T.*).—Shirley Poppies, Antirrhinums, Wallflowers (early), Sweet Williams, Canterbury Bells (early), Foxgloves, Silene pendula, and Sweet Peas. They would thrive best when not transplanted, but this often means a considerable amount of blank space during winter, and many gaps later on.

1561—**Pump for cesspool** (*Springfield*).—If the pump is to be a fixture and can be fastened to a block of wood against a wall, you can obtain a cast iron one through any ironmonger, with a 3-inch barrel, for about 24s.; a 4-inch barrel would cost 10s. more. If it cannot be a fixture, procure a portable galvanised iron one on tripod iron legs, with 10 feet india-rubber suction pipe, at a cost of about £3.

1562—**Artificial manure for flowers** (*Bunny*).—When preparing the soil in the spring for planting, sprinkle dissolved bones amongst it freely, and occasionally in summer, during showery weather, give a light sprinkle on the surface near the plants of nitrate of soda. For bulbs, add the former at planting time and again every spring. When growth commences remove a few inches of the surface soil so that the bones will be nearer the roots, returning the soil again.

1563—**Smilax** (*Balsamo*).—The border over the pipes would probably be too hot and dry. Give a rich loam, with a little sand and peat, drain well, and grow in boxes—those in which grocers purchase Raisins are well suited. Smilax needs a moist temperature of 60 degs. to 70 degs. to grow it well. There are many species and varieties, but we presume you mean the green-leaved one now so much used. Train them up pieces of string. When using these can easily be drawn out.

1564—**Propagating Scarlet Lobelia** (*A.*).—If you will please say which of the Scarlet Lobelias you mean we will reply fully. It is generally best to propagate these from seed in the autumn, the plants being stronger than when deferred until spring. None are quite hardy with us, but a sheltered and well-drained border will keep them through a mild winter in the southern counties. As regards the bulbs, withhold water gradually and encourage the bulbs to ripen. Keep in a dry place and repot at the usual season. They will not bloom so well a second year, and plant only properly-prepared bulbs.

1565—**Hot-bed in frame** (*A Reader*).—It is somewhat late in the season to make up a hot-bed in a frame. But if you have some weeds, leaves, and stable-manure in equal proportions, and make this up 3 feet deep and 1 foot wider than your frame, it would be most useful for winter protection of plants, and give you some excellent potting-mould later on. Next year use fewer weeds, and make up the bed by the middle of March, when you could raise the seedlings you name, and by the help of a new layer of manure around the frame could grow Cucumbers early. Well made up, such a bed would produce a steady heat for quite two months.

1566—**Cos Lettuces not forming** (*W. A. Sewell*).—Your Lettuce-plants were either from very old seed or had been checked by drought and delay in planting out. Hot and dry weather often causes the running to seed of which you complain. We presume you mean to blanch or bleach the Endive; this is secured by laying a light tile or piece of slate over the crown of the plant when about half grown. Probably your lawn is dry or overused at places. If so, you must water thoroughly, rest it a little, and apply a dressing of some manure. Many artificial manures are good and quickly absorbed. They leave no unsightly residue and would soon improve the appearance.

1567—**Cutting back Hollies** (*R.*).—The month of February is a good time to prune Hollies of any kind. There is but one reason why they may not be done at Christmas, or even earlier, and it is this, that the plants will look bare and unsightly during the period when evergreen shrubs are the most valuable—viz., during the winter. Hollies of any size are quite amenable to being closely pruned, and are very often more vigorous in growth afterwards, especially if the soil about the surface roots can be replaced with some fresh material, adding manure to it liberally. Liquid-manure given to the roots during the month of March is a capital stimulant to Hollies of any kind.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

*** *Several parcels of plants for name have been received with no letter inside, or anything to denote from whence they came, and several correspondents have sent parcels apart from letter. Unless the rules are adhered to we cannot notice communications.*

Names of fruits.—*T. W. H.*—We cannot name a late Apple from such poor fruit. Send later or when ripe. The Plum is a small fruit of Victoria.——*Gaultier.*—1, Oslin; 2, Lady Sudeley.——*C. Gibbs.*—You have sent much too early. Those kinds not named you must send again when riper; 2, Probably King of the Pippins, but too unripe to determine accurately; 3, Ecklinville Seedling; 4, Lord Suffield; 6, Dutch Codlin; 10, Carlisle Codlin; 11, Gloria Mundi; 12, Warner's King.——*E. P.*—Apples: 1, Emperor Alexandra; 2, Cockle Pippin; 3, Golden Pippin.——*A.*—Pear Beurré Clairgeau.——*Mrs. R. Brise.*—Pear Les Deux Sœurs.

Names of plants.—*X.*—1, Hemp agrimony (Eupatorium cannabinum); 2, Gaillardia hybrida; 3, Helianthus sp.; 4, Kindly send flower; 5, Polygonum bistorta.——*Monks Kirby.*—The Carnation is probably a seedling. We know no kind like it.——*J. Starkey.*—There are so many Cactus Dahlias that we cannot name from a single bloom. It would be better to send it to someone who has a good collection.——*G. F. Ashton.*—You did not say colour of flower, but the plant is probably the Chicory (Cichorium Intybus).——*Mrs. Usher.*—Allium pulchellum.——*F. J.*—Spiderwort (Tradescantia virginica).——*Gardener.*—1, Flame Nasturtium (Tropæolum speciosum); 2, Veitch's Virginian Creeper (Ampelopsis Veitchi); 3, Ficus repens; 4, Sedum Sieboldi; 6 Kalosanthes coccinea; 11, Pteris cretica albo-lineata; 12, Pteris serrulata; 13, Phlebodium aureum; 16, Pteris tremula; 17, Aralia Sieboldi. You have sent too many; six is the limit. Those not named you must send again.——*Chinley.*—We cannot name Pelargonium flowers; Kingston Beauty appears to be the kind, but send it to someone who has a collection. The same applies to the Fuchsia. The Fern is Pteris serrulata.——*T. Salter, Hastings.*—Escallonia macrantha, a favourite southern seaside shrub.——*Mrs. Orton-Smith.*—Roses are now very much out of character. We name the flowers. It would be better to send the others to someone who has a good collection to compare them with; 2, Gen. Jacqueminot; 4, Marquise de Castellane; 5, Ulrich Brunner; 6, La France; 8, A white Polyantha Rose.——*A. B. C.*—The Garland-flower (Hedychium Gardnerianum).——*J. B.*—1, Diplacus glutinosus; 2, Hebeclinium atrorubens; 3, Justicia carnea; 4, Habrothamnus elegans; 5, Sparmannia africana; 6, Please send in flower; 7, Eccremocarpus scaber.——*E. Haines.*—The flowers, unfortunately, had dropped to pieces.——*A.*—Rose Aimée Vibert.——*Alec.*—1, Quince; 2, Variegated Weigela; 3, Pyracantha (Cratægus Pyracantha); 4, Jasminum officinalis (White Jasmine); 5, Caper Sourge (Euphorbia Lathyris).——*Mrs. Dods.*—Panicum capillare.——*H. Pass.*—1, Deschampsia cæspitosa; 2, Argopogon geminiflorus; 3, Dactylis glomerata; 4, Trisetum flavescens; 5, Phleum pratense; 6, Molinia cœrulea——*A. W. L.*—Chinese Juniper (Juniperus chinensis).——*W. Smith.*—Doryopteris var. Send a proper specimen; the scrap submitted is much too small and out of character.——*H. C. L.*—The reddish flower is Hieracium aurantiacum. Kindly send the other again; it was much shrivelled.——*F. J.*—1, Asplenium bulbiferum; 2, apparently common Bracken Fern (Pteris aquilina); 3, Polypodium cambricum; 4, Nephrolepis exaltata; 5, Polystichum angulare; 6, Please send in flower; 7, Pteris serrulata cristata; 8, Selaginella denticulata; 10, Eupatorium Weinmannianum; 11, Veronica speciosa.——*M. B.*—1, Please send again; 2, Tecoma radicans; 3, Lychnis chalcedonica; 4, Anemone japonica; 5, Bocconia cordata; 6, Geranium armenum.——*Mrs. Stallard.*—Your plant is the wild Hop, Humulus lupulus. It will grow well in any good loam that is not too close and stiff.——*E. H. F. C.*—It is quite impossible to name definitely from a single leaf, especially when so poor a specimen.——*Meriden.*—Jasminum revolutum.——*T. S.*—Jasminum revolutum.——*Seravin.*—The Carnations were dried up. Send fresh bloom to someone who has a good collection, but it is getting late now; 5, Pentstemon, diffusus; 6, Chelone barbata.——*Malton.*—Evidently Clematis Jackmani, but we cannot, of course, say definitely unless we had flower.——*A. T. W.*—1, Marie Van Houtte; 2, Comtesse de Nadaillac probably, but the flowers much faded; 3, Mme. Lambard; 4, Probably Mme. Berard; 6, Mme. Laurette Messimy.

Catalogues received.—*Bulbs.*—Jas. Carter and Co., High Holborn, London.——*Bulbs.*—Messrs. Armitage Bros., Ltd., Nottingham.——*Bulbs.*—Dobie and Mason, Manchester.——*Bulbs.*—E. Webb and Sons, Wordsley, Stourbridge.——*Bulbs.*—Collins Bros. and Gabriel, Waterloo-road, S.E.——*Bulbs.*—Amos Perry, Winchmorehill.——*Bulbs.*—Frank Dicks and Co., Manchester.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

E. P. Watson.—"Cactus Culture" is the book, to be obtained from C. Uppott Gill, 170, Strand, London, W.C. Its price is, we think, 2s. 9d., post free.——*Cactus.*—Neither Hooker nor Humboldt have published anything, so far as we know, on Cactus hunting.

LAW.

A garden tenant's compensation.—I am a yearly tenant of a cottage and garden. I have built a small greenhouse, planted fruit-trees, shrubs, flowers, etc. Can I claim any compensation on leaving the cottage at the expiration of a notice to quit? I have no written agreement.—Army.

*** If the garden is occupied as a private garden, and not as a market garden, you can claim no compensation for any of the things mentioned except in the case of fruit-trees and fruit-bushes planted by you with the previous consent of your landlord given in writing. If such consent was given you may claim compensation for the fruit-trees and fruit-bushes under the Allotments and Cottage Gardens Compensation for Crops Act, 1887. You cannot remove any of the things at the expiration of the tenancy except the greenhouse, which may be removed if not affixed with mortar to brick foundation. Such a greenhouse as you would erect is pretty certainly removable by you.—K. C. T.

Claim by tenant of allotment.—Six years ago I took a rood of land on a yearly tenancy at the yearly rental of 15s. 9d., to be paid by two half-yearly payments; one of 7s. 9d., the other of 8s. I took the land as a market garden, and have cultivated it as such. I paid inventory for manure, and as the other tenant could not get his crops off before I took possession I allowed him to remove them afterwards. As I wanted more land I have taken another piece of another man, and so have

received notice from my landlord to quit on February 13th next or at the end of the current year of my tenancy. The notice is dated August 7th last. I have 1,500 spring Cauliflower Broccoli, which will not be ready until the end of April or May, 1,000 Rhubarb roots planted last year, and a large bed of Mercury. They are not willing to give me any compensation for these. Can I claim compensation for these matters? If so, what would be a fair sum to claim? Or shall I have to move them? I enclose copy of the rules and of notice to quit. The rules have been drawn up lately.—A. D.

*** The rules are made by a garden allotment society, and it may be presumed you hold the rood of land under them. But are you bound by these rules? They have been drawn up long after your tenancy commenced, and unless you have agreed in writing that they shall apply to your tenancy you are not bound by them. You say nothing as to this. Neither do you say whether you have signed any agreement or document relating to the tenancy. Now, the matter is most important, for the rules say that the tenancies are to be yearly from February 13th, and to be determinable by six months' notice given previous to February 13th. You say that your tenancy commenced on April 6th, and, if so, and you have not signed any agreement of tenancy nor any document making the rules in question applicable to your tenancy, you are entitled to a year's notice to quit, and the notice must expire with a year of tenancy—that is, on April 6th in some year. If the facts be as I have stated, the notice you have received is bad, and you need not quit. But did your tenancy commence on April 6th? Did you enter at the end of a year of tenancy in the ordinary way, or did you enter during a year of tenancy by arrangement with the then tenant, and was accepted by the landlords as their tenant? If you did enter during a year of tenancy, and took over the then tenant's interest, no arrangement made between you and him will be binding upon your landlords when you quit. If you will send the Editor a copy of any document or agreement you have signed it shall be considered; but you must refer to the page on which this answer appears. If the land is really cultivated as a market garden, and was so cultivated to the knowledge of your landlords previous to the 1st of January, 1896, you may claim compensation for the matters you mention under the Agricultural Holdings Act, 1883, as amended by the Market Gardeners' Compensation Act of 1895. It is impossible for an outsider to say what would be a fair sum to claim, as everything depends upon the growth and condition of the plants and beds at the time when you quit. Two calendar months before the determination of the tenancy—that is, on or before December 13—(if the notice to quit is a good one) you must give your landlord written notice of your intention to claim compensation under the Act of 1883, and the notice must state, so far as is reasonably possible, the amount and the particulars of your intended claim. If you do not agree on the amount of the compensation the claim will be settled by a reference under the Act. It is also open to you to claim under the Allotments and Cottage Gardens Compensation for Crops Act of 1887 instead of under the Act of 1883. The procedure under the Act of 1887 is much more simple and is far less expensive. You will find a full account of the Act of 1887, with all the information you need, on page 230 of GARDENING for June 19th last. Notice of the claim under the Act of 1887 need not be given until the tenancy expires, and it may be given afterwards. But compensation under it is given only for growing crops and not for the formation of beds. For instance, under the Act of 1887 you would be entitled to the value of a growing crop of Rhubarb if one was growing when you quitted. You would of course be entitled to the value of the crop as it then was (but not to the value of the crop when it should be ready for cutting); while under the Acts of 1883 and 1895 you would be entitled to claim for the Rhubarb-roots themselves and for such matters as Asparagus-beds. If you write again kindly write on one side of the paper only.—K. C. T.

Carnation Burn Pink.—This is also known as Duchess of Fife. It is a grand variety of capital growth. The flowers are rich flesh-pink, not over large, but do not burst their pods. It is first-rate in the open border.

BIRDS.

Treatment of Goldfinch *(B. B.)*.—This handsome bird, with its sweet natural song and great power of imitation, is one of the most interesting of our feathered pets. You should provide your bird with a large cage, as Goldfinches are lively birds and require much exercise; a round-topped Canary cage is unsuitable, a square, wooden top cage being the best. The food may consist of Canary-seed, the small summer Rape, and Hemp-seed, together with Thistle-heads, when ripe, Plantain, and Groundsel. Hemp-seed may be supplied more freely to caged Goldfinches than to many other birds, but care should be taken to decrease the quantity towards moulting time or the plumage is liable to become darkened, and the natural beauty of the bird lessened. To keep cage-birds in health it is important to supply them with coarse grit sand, as seed-eating birds especially require small stones in the gizzard in order to properly digest the food. The fine sand so often used to strew upon the floor of cages is of little use to the birds in enabling them to triturate their food. Fresh water for drinking must be supplied daily, and for bathing two or three times a week. The Goldfinch is fairly hardy in confinement, and will live a long time if properly treated. A variety of this species, very much prized by fanciers, and known as the Chevril Goldfinch, has a white streak extending from the base of the lower mandible down the breast, but in other respects resembling the rest of its race. Young Goldfinches till after their first moult are called Greypates; these are captured in large numbers by the bird-catchers, but very few survive in captivity.—S. S. G.

Parasites in Canary-cages *(Ralph Lavington)*.—These insect pests are a great plague to cage birds, and the sooner you can banish them from your cages the better it will be for the comfort of the birds. Their being of a red colour proves that they are preying upon your birds, as their natural colour is greyish-brown, but they are of a bright red when distended with the blood of their victims. They lurk in the cracks and crevices of the cage during the day, and sally forth at night to attack the feathered inmate, spoiling its night's rest and rendering it generally unhappy. Old wooden cages are more infested with parasites than others; but at the best it is difficult to keep them at bay wherever a few birds are kept. You had better scald your cages with boiling water, dry them before a fire, and paint the crevices with Fir-tree-oil. Or they may be put into a hot oven, care being taken that the wood does not become charred in the process of destroying the parasites and their eggs. As a further precaution, the birds might be dusted with Pyrethrum-powder; but as some of the mites may escape after all it may be ascertained if the birds are still troubled with them if a white cloth be thrown over the cages at night. If there are still any of the vermin present they will be found adhering to the cloth the next morning, and the operation should be repeated till no more are found. These red mites trouble young Canaries when in their first feathers much more than they do old birds, and if much infested when nestlings they seldom make strong birds.—S. S. G

1568—**Best Walnuts for pickling.**—Would you kindly tell me if Walnut-trees will grow exposed to the sea winds, about 300 yards from the shore? If so, what kinds would you recommend for pickling? The situation designed for planting is in the middle of an old road, apparently of chalk, which crosses a new garden. Could you give me some hints as to their culture, having regard to this road? And how soon would these trees come into bearing for pickling?—A SUBSCRIBER, *Sussex*.

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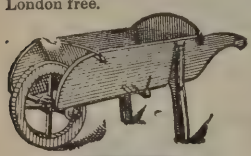

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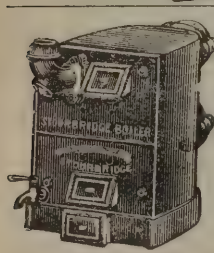

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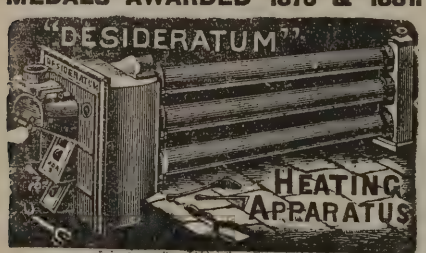

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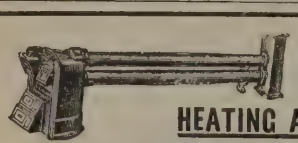

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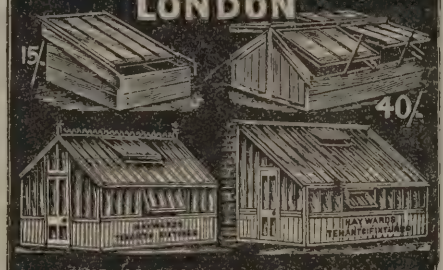

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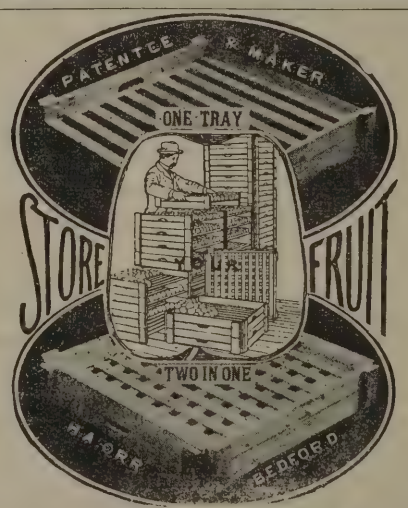

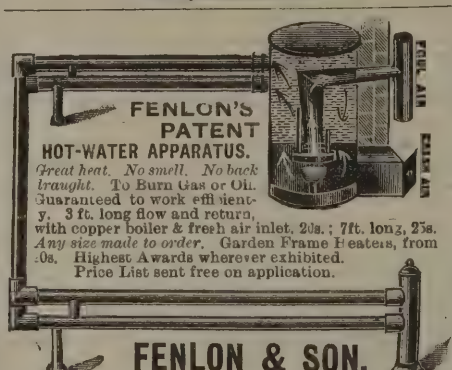
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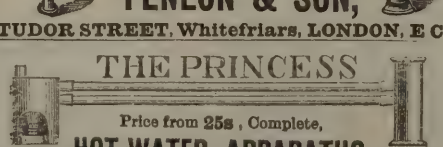

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GARDENING ILLUSTRATED.

No. 966.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* SEPTEMBER 11, 1897.

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INEXPENSIVE FLOWER-BEDS.

I HAVE recently written several articles in GARDENING on mixed borders under-planted with bulbs, and as they all required (in the first instance) a certain outlay of money, I should now like to write of some beds and borders which any beginner in gardening could easily procure at a small cost. I am going to write chiefly of flowers grown from seed; but I shall also mention a few which increase rapidly by division of root, as they give less trouble than plants which are grown from seed, and they have the advantage of being permanent. One of these not seen as often as it deserves to be is

LONDON PRIDE (Saxifraga umbrosa).—Planted in a mass it has a pretty and graceful effect in May and June, and there is no plant I know which increases so rapidly or is so easy to cultivate. All that is required is to take it up in the autumn and pull it apart, taking care that each piece has some roots attached to it. A clump which has been grown the previous year from a single plant will thus divide into a great many small ones, each of which will soon form a good clump on its own account. It is well if quick increase and growth be desired to give the young plants a few inches' depth of leaf-mould and soil, mixed in about equal proportions, to root in; but they will grow in almost any soil or situation. It does not root deeply, so quite a shallow depth of good top soil is all that is necessary to insure quick growth. It is not often used as a spring bedding plant, yet it is a pretty one, with its feathery spikes of pink flowers. The leaves are pleasing also in the way in which they completely carpet the soil beneath them.

DOUBLE DAISIES, too, are very quickly increased by division, and are really a mass of bloom when in flower in May and early June. Like the London Pride, one Daisy root planted early in the spring will, when taken up in the autumn, divide into several, and these planted at about 4 inches from crown to crown will make quite large plants by their flowering time, and they are best so divided and planted.

A bed in which London Pride has been planted all over the centre is very pretty with a row of red double Daisies all round it and an outer row of pink double Daisies round that. This forms a pretty mixture of colour in reds and pinks, and the Daisies make a nice low, compact edge to the bed.

The time to plant the bed is in October. In June, as soon as the London Pride and Daisies have gone out of flower, they can be taken out and planted in a reserve bed in the kitchen garden, where they will form sufficient growth to make four or five times as big a bed or many smaller ones by the autumn again; or they can be left where they are to bloom other years. If removed, the bed out of which they have been taken must be dug and leaf-mould and manure added to it. If Nicotiana affinis seedlings are planted in it, it will not only be pretty during the summer, but will give forth a most delicious scent during the evenings, when the lovely starry white flowers expand. These Nicotiana-plants are easily raised by anyone who has a greenhouse or frame. The seed sown late in February or early in March in a shallow box, in a mixture of leaf-mould, sand, and soil, comes up readily, and the seedlings should be pricked into another box and placed near the light. Like all seedlings, these must not be allowed to grow up into straggling, thin plants by overcrowding, and in May they may be placed out-of-doors in their boxes until required to be planted out. I need not say that they must at all stages be well watered and not permitted to get dry. There is no easier plant to grow though, and they make excellent pot-plants if pricked off singly into pots in the soil recommended for the seed to be sown in, and if they are kept pinched back at first to make them branch out into many side-shoots. They are one of the few plants which will flourish when in flower in a dark corner of a room; in fact, they are best away from too much light, as they more fully expand their flowers in the dusk. The old-fashioned

SWEET ROCKET is one of the flowers that grows readily from seed, and a bed filled with plants of the white variety of it has a good effect in the spring. They flower in May and during the early part of June. The seed ought to be sown out-of-doors early in June, and the young plants must be pricked off into a reserve bed as soon as they are large enough to handle. If they are pricked off into this bed at about 6 inches apart they will make good plants by October, when they will be required to be moved into the bed in which they are to flower the following spring. Into this bed I should plant them at a distance of about 9 inches apart. They grow from 2 feet to 3 feet high, and, planted at this distance, they ought to give a sheet of white bloom; but, as in the case of all seedlings, care during their earlier stages is needed if the after effect is to be all that is desired. It well repays the grower to sow seed in the first instance in a soil in which it is likely to germinate in a satisfactory manner and to prick off the young seedlings before they have become weak from overcrowding. The reserve bed in which they are planted ought to be made up to promote quick growth by the addition of a little sharp sand and sifted leaf-mould. During dry weather water ought never to be forgotten.

I do not say that such really easily-grown plants as the White Perennial Sweet Rocket cannot be raised without this care. Of course they can. They are one of those plants which cast their seed broadcast, and which, when once planted in a garden, are nearly sure to come up from seed in many other beds where they are not wanted. But these self-sown seedlings are naturally "scruffled" up in an early stage by a tidy gardener, and though they do seed themselves so readily, a good stock of young plants cannot be obtained without a certain amount of trouble. And I am one of those people who think it better not to grow a thing at all than grow it in a manner which does not give it every opportunity of being a success.

These Rockets are called perennial, but my experience goes to prove that as such they are by no means to be relied upon, though sometimes they will flower for several years consecutively.

WALLFLOWERS are too often grown for it to be necessary for me to say much about them. There is no spring bedding plant more effective or sweeter than they are. But they will not do equally well in all soils, and a very severe winter is fatal to them, therefore I do not consider them a really reliable spring bedding plant. There is a great difference of opinion as to whether seed ought to be sown late or early, and many gardeners prefer to sow the seed late. It is said that small plants withstand the frost better than larger ones. But no one can say that if the plants are small in autumn they grow to be as fine in spring as well-grown larger ones, nor that they give the same wealth of bloom; and, on the principle of having things at their best, I personally give the preference to the earlier sowing of seed and larger plants. But, like all other seedlings, and indeed much more so than in many cases, young Wallflower-plants must be pricked off at a very early stage of their existence. A tap-root is fatal to them, and the seedling which is once allowed to form one will never make a really satisfactory bushy plant afterwards. Wallflowers like to be well fed with manure, and the ground out of which they are taken after their flowering time is over must be liberally enriched before other bedding plants are put into it. There are few plants which so impoverish the soil in which they grow.

PANSIES are, of course, charming spring bedding plants, and if kinds are chosen in the first instance which flower well in the spring and summer, a long succession of bloom can be kept up. The kinds which are called Tufted are, perhaps, the most reliable, but nearly all of the best Pansies can be grown by anyone who cares to bestow a certain amount of time and care upon them. There are so many beautiful Pansies nowadays, and the tastes of different people vary so much as to colour, etc., that I think it is much the best plan for intending growers of them to go to some nursery and choose for themselves. If the nursery is near at hand, the best plan, of course, is to go in spring, summer, and autumn, and so discover which plants flower the longest and most freely and seem to grow and thrive the best. If they have no opportunity of doing this, there are lists given in GARDENING as to the best kinds to select.

To imagine that they will grow in any soil is the greatest mistake anyone can make. The beds in which they are to be planted must be properly prepared to receive them. That done, the rest is comparatively easy. The soil which suits them, and not only encourages quick growth but produces an abundance of fine flowers, is a mixture of leaf-mould, well-rotted manure, and loam, in about equal proportions, with a little sharp sand added to it. The drainage of the bed must be good and the soil be well dug to some depth, but this prepared soil need only be about 6 inches beneath the surface. That is all that is really necessary. Plant the young plants in it in the autumn at about 4 inches or 5 inches apart, and, unlike other plants, bury their crowns when you plant them. By doing this you will cause all

the side-shoots to root on their own account, and they will do it quickly and freely in the soil I have recommended. Instead of the plant only having one life to depend upon, it soon possesses a dozen. That is a consideration worth thinking of, and added to it there is the fact that by thus burying it it is much less likely to be caught by the frost or to die through drought than if above the surface. Another gain is this, when you take up your plants to remake your bed (which, if you wish to get up a good stock of any kind of Pansy, you must do every autumn or early spring), you will be able to divide each plant into a great many, as every little sprig which has a root attached to it, if torn from the rest, will grow and soon form a plant on its own account. This division of the roots is necessary where a stock is required quickly, and divided roots are better than very old plants. If a large stock is not required, the old plants will flower many years consecutively, and give a great display of bloom. In a prepared soil they could remain three years, at any rate, and all they need would be to have their leading shoots cut back after they have flowered and a little extra soil sprinkled amongst them when this is done. The side-shoots would then shoot up and give a second display almost as good as the spring one. It is best to cut off dead flowers, as if they form seed they curtail the blooming season considerably.

The way to produce the largest flowers is to take cuttings every autumn (taking the young side-shoots in preference to the stronger growths) and plant them in a mixture of sharp sand and leaf-mould under a frame. These will have rooted well by the spring, and I should always grow some thus; but they will not bloom as early as autumn planted or older plants, and therefore I think it best to keep some beds of old plants, and to have some divided roots for spring effect.

A complete novice will not find the growing of cuttings so easy as the divided roots; and it is, of course, the complete novice for whom I write. MRS. ROBERT JOCELYN.

ROSES.

Roses unsatisfactory.—I have a large number of the hardiest climbing Roses, obtained from the best house in England and planted last March. They have had every encouragement possible—watering, mulching, liquid-manure, etc.—yet hardly one is satisfactory. Nearly all are covered with mildew; three of them are dying off with leaves like one enclosed. Very few buds open before they wither, and the new growth is as bad as the old. Will they be any better after a winter? What more can I do to make them healthy, and must I cut down those affected in the way of the enclosed leaves?

*** Those who delayed the planting of Roses until March of this year are sure to be in considerable trouble. We had very dry and excessively cold weather at that date and onwards, and without established roots the plants were heavily handicapped. You can do nothing with them; but those which live will probably thrive much better next season. We would replace the worst with others during the coming autumn.

Malformed Moss Rose (*Schoolmaster*).—The galls on your Gooseberry are caused by the larvæ of one of the rhodites. Cut off the affected branches, or, if very bad, destroy and burn the plant. There is nothing remarkable about your Rose. Roses often produce the same, especially among the smooth-wooded Hybrid Perpetuals. Any trade fruit grower can supply the Gooseberry and Raspberry you name. Bunyard and Co, Maidstone; Cheal and Son, Crawley; or Rivers and Son, Sawbridgeworth. Either of these firms would supply the Clematis as well.

Roses.—I have some La France Roses, standards on Brier-stock, planted last autumn. They seem healthy and give plenty of blooms of good size, but very few of them of good shape. Would close pruning improve the shape, or is it likely that the soil is at fault? Mine is light, but good, and I feed the plants well. Grace Darling also does not do very well with me.—L.

*** There are seasons when neither of these Roses open or flower so satisfactorily as at others. In our own case both have been indifferent, but last year were good. Caroline Testout is far more reliable than La France and brighter.

TEA AND HYBRID TEA ROSES UNDER GLASS.

AN ordinary greenhouse, fitted with hot-water pipes, will well repay those who are in a position to erect such a place, for the beautifully clean blossoms, which a gentle heat will develop, are very valuable at this time of year and during the dull days of winter. The best results are doubtless obtained by adopting the planting-out system. There is less trouble arising from mildew, and the growth the plants will make would astonish anyone who has never tried this plan of growing Tea Roses. I will give for the information of your readers a short description of some houses I recently saw in a commercial establishment where the Roses are all planted out for market purposes. A range of houses, upwards of 150 feet each in length, was erected upon a piece of meadow land. There were no partitions between the houses, but they were so fitted that oiled calico could be stretched between each house if desired to accelerate the growth in any particular house. The land, as I have said, was pasture and lay rather high. This land was trenched about 2½ feet deep, and all the turf worked in with the trenching. The only manure used in the trenching was a fair proportion of bone-meal. The loam was of a soft, silky nature and rather stony. When all was finished, the plants (which were on seedling Brier) were put

Flowers of Tea Rose Marie Van Houtte.

out, and when I saw them they had been planted about three years, and such growth they had made I have never seen equalled—huge bushes 3 feet to 4 feet and as much through, with growth in some instances as thick as one's little finger. These plants were forced, so that a good crop could be obtained during the early months of the year. They were mulched now and then with short, well-decayed manure, and when water was required a good soaking was given. During the summer they were given a rest of about one month, the growths were thinned out, and a thorough ripening of the wood was the result. After this month of rest gentle heat was given, and the result was a quantity of fine flowers in September and October, which were found to be much in request. No side air was ever given; therefore very little mildew was seen. If flowers were not always wanted they were cut off all the same, which induced new strong growths. Even in a small way this method of growing Roses would be found of considerable value. It is ofttimes pitiable to see Roses in pots grown in a greenhouse containing mixed subjects. I would recommend that a house be devoted entirely to these lovely Tea and H.T. Roses. Have the top lights removable, so that the beneficial rains and dew can be given when required. Commence by planting good strong plants, and, as I said before, grafted or budded on seedling Brier. Some standards or half-standards would make a little diversity, while some of the climbing varieties would soon cover the upright posts or could be trained on to poles, but on no account have any on the roof to exclude the sunlight.

I append a list of some varieties suitable for this method of culture: Niphetos, Mme. Lambard, Catherine Mermet, Bridesmaid, The Bride, Papa Gontier, Kaiserin Augusta Victoria, Sunset, Mme. Hoste, Perle des Jardins, Anna Olivier, Souvenir d'un Ami, The Meteor, Maman Cochet, Mme. Abel Chatenay, Francis Dubrieul, Marie van Houtte (see cut), Clara Watson, Mme. de Watteville, La France, Duchess of Albany, Mrs. N. J. Grant, Caroline Testout, and Augustine Guinoisseau. Climbers or as standards: Maréchal Niel, Bouquet d'Or, Mme. Chauvry, Mme. Berard, Gustave Regis, W. A. Richardson, l'Ideal, Mme P. Cochet, Gloire de Dijon, Mme. Eugène Verdier, Henriette de Beauveau, and Alister Stella Gray. P.

Manure-water for Roses.—I planted several new Roses, mostly Teas, last autumn, and have been giving them manure-water on an average three times in a fortnight, about a quart to each plant. During June and July I gave weak manure-water (mixed with rain-water) from the farmyard; latterly, however, I have been giving them less frequently another fertiliser as a liquid. The Roses have grown well, but I have lately been told that I should have given these new Roses no manure-water at all, and that they will suffer severely during the winter from the extra stimulant. I should be very glad to know if my treatment was right or wrong? If the latter, then would it be advisable to give them protection, such as Bracken or straw, when the cold weather commences? I may say that the position is sheltered from all cold winds, and the soil well drained and conveniently suitable for all Roses.—CROSSPATCH.

*** You did quite right. We wonder why such treatment is supposed to injure the plant during winter. However, you may well cease now, so that the growth may have a better opportunity of becoming well matured and able to stand the winter. Some notes that are to appear shortly will deal with protection, etc.

Rose-shoot (*Enquirer*).—By all means keep the shoot straight until it is dormant. Bending it now would cause lateral growths, and you do not want these until next spring. Your friend is simply mistaken as to when the shoot should be secured in a more horizontal position. We hope you will have a grand show of bloom upon your promising shoot, and you should if it is ripened fairly well and then bent next spring. Do not prune, except to remove the few immatured eyes at the tip.

Rose G. Nabonnand.—Last autumn I purchased two plants of Rose G. Nabonnand, which I placed in 6-inch pots in a cold greenhouse. The plants have each made long rods of over 4 feet, but have shown no signs of flowering. Do you think the plants can be true to name, as I have always thought G. Nabonnand to be a very free-flowering Rose?—IVY.

*** Please send us a piece of growth and a few leaves in various stages, and we will reply respecting name. There is no freer bloomer than G. Nabonnand, and both in the open and under glass it is simply grand at present.

Rose growing.—I have a Reine Marie Henrietta Rose-tree which I bought last spring, and it has thrown out a shoot about 6 feet long from the bottom. It is in a greenhouse 24 feet by 8 feet. What am I to do with it, as I want it for button-holes in winter? Should be glad of advice.—SIDNEY LUCKEY.

*** Your plant is thriving well. By no means prune, and do not give much water after it shows signs of maturing growth. Next spring, early, it will carry deep red blossoms, very long in the bud, and produced from every eye upon the long rod now growing. More of such growth will be made next summer.

Pink Rose.—Would you kindly recommend me a good pink Rose, the same kind of colour as Countess of Pembroke, that would be suitable for planting amongst Madonna Lilies? I want a Rose that will grow freely and wildly through the Lilies, and blossom at the same time. Could a climbing Rose be made to suit my purpose best? A Hybrid Tea would be preferred.—ABBEY.

*** We do not think you could do better than use Mrs. W. G. Grant. It is a little deeper in colour, but wonderfully free flowering and a good grower.

TREES AND SHRUBS.

HYDRANGEAS.

There are about a dozen species of Hydrangea now in cultivation, at least half of which may be accounted useful hardy shrubs. As a greenhouse plant H. Hortensia (see cut) is known everywhere, but for cultivating out-of-doors it is only in mild-wintered localities, like Devon and Cornwall, that it is of any great value. With the exception of this species, however, and in a less degree of H. quercifolia, all the species mentioned in the following notes are quite hardy in the neighbourhood of London None of the Hydrangeas are natives of Europe, but, like so large a proportion of our hardy trees and shrubs, are represented in North America and in Northern Asia. They are all of shrubby habit and have opposite leaves, the flowers appearing in terminal corymbs or panicles. Plants have many different ways of attracting insects to fertilise their flowers, but in most cases where bright colours are the attraction each flower does its share in the general advertisement. In Hydrangeas, however, certain flowers are told off for that purpose alone. In every species in a wild state there are two kinds of flowers, the one perfect in all the essential organs, but comparatively inconspicuous; the other, which is generally on the margin of the inflorescence, being many times larger than the former, and, whilst devoid of stamens and pistil, has broad, conspicuous petaloid segments, which give the inflorescence its chief beauty. Cultivation has had the effect in the case of several species of changing a large proportion (or even all) of the small perfect flowers into the large sterile ones, and thus adding much to their showiness. This, of course, prevents the formation of seed, but as Hydrangeas are very easily increased by cuttings or layers, is no detriment. All the Hydrangeas like a free, open, and fairly rich soil, none of them being in any way difficult to accommodate. The two climbing species, H. petiolaris and H. altissima, should be grown on a sunny wall.

Amongst the most interesting species are the following:—

H. quercifolia.—This is a shrub rarely more than 2 feet to 3 feet high in Britain, but said to attain almost tree-like dimensions in its native localities, reaching in moist situations a height of over 12 feet. It is the most distinct and handsome of the American species, being noteworthy alike for the beauty of its flowers and foliage. The leaves are large, measuring 5 inches in length by 4 inches in width, and whilst of ovate outline in the main, are deeply lobed after the fashion of the American Red Oaks. The flowers are borne in large panicles. This is the tenderest of the American Hydrangeas and should be given a sheltered position where the soil is deep and moist. It is a rare plant both here and in the United States.

H. Hortensia.—This is the commonest of all the Hydrangeas in gardens, but is grown almost solely as a greenhouse plant. In the south-west, however, it is one of the most effective of hardy shrubs. The plant is too well known to require any description, but there are several other Hydrangeas that have been made varieties of it which are well worth bringing to the notice of those interested in hardy shrubs. To the cultivator they are chiefly valuable because they flower well when grown as purely hardy shrubs. Unlike the common Hydrangea, they blossom on the shoots that come from the axillary buds of the previous year's growth, and although the terminal buds may be killed in winter, this interferes but little with the crop of flowers the following July. The following four varieties are of this group: H. var. Lindleyi has the sterile flowers confined to the margin of the inflorescence, and they are of a pale rose colour, each 1½ inches to 2 inches in diameter, the whole corymb being sometimes 6 inches across. H. var. japonica rosea, flowers of the same colour, but smaller than those of var. Lindleyi, all of them being sterile. H. var. stellata is in itself a variable plant; a large proportion or all the flowers are sterile, the segments being narrow and pointed, sometimes slightly toothed; at first pale rose, they gradually assume a deeper shade. H. var. acuminata has flowers of a lovely shade of blue, but they are as frequently rose-coloured. H. Hortensia has the peculiar property of changing the colour of its flowers from blue to pink or *vice versâ*. The flowers come blue when the plant is grown on ferrugineous soil. These four varieties are all different from the ordinary H. Hortensia in the leaf being smaller and of a duller dark green. More closely resembling the type and better suited for the greenhouse are the three following: H. var. Otaksa, with sterile flowers at the outside of the corymb only. H. var. nigra (cyanoclada), with stems of a dark purplish-brown, and very handsome on this account. H. var. Thomas Hogg, a very beautiful plant with flowers of the purest white.

H. paniculata.—In the home countries this species shares with the hardier section of H. Hortensia the distinction of being the showiest of the genus. It is a robust, strong-growing, and quite hardy shrub, with short-stalked leaves, varying from 3 inches to 6 inches in length, and slightly hairy on both sides. The flowers are borne in erect panicles, only a small proportion being of the large sterile kind. On first opening they are almost pure white, afterwards assuming a pinkish tinge. The typical form is not so much in demand as the var. hortensis (or grandiflora). This has all its flowers sterile, and is in consequence much more effective than the ordinary form. It produces its huge pyramidal clusters in early autumn, and they remain in beauty for several weeks. I notice that in the United States this variety is nearly always spoken of as being inferior in beauty to the type and wanting in the grace and lightness of the latter. Possibly they both flower more profusely under the brighter American skies, and whilst the species itself becomes more striking than it is with us, the sterile variety becomes too lumpy and heavy. In England, however, it does not seem to have that defect, under ordinary treatment at any rate, and is, I think, to be preferred to the wild form from which it sprang. A native of Japan.

H. pubescens.—A robust and perfectly hardy species of erect growth. It has finely-toothed leaves, 3 inches to 5 inches long, with a few hairs on the veins. The flowers are produced in a flat corymb, measuring 6 inches across, the outer ones being all sterile and pure white on first opening, afterwards rosy. The perfect flowers are of a dull white. It comes into bloom in the latter part of June, and the blossoms remain on the plants till the early frosts of autumn. Given a sunny, sheltered position, this Hydrangea forms a really handsome shrub, although it has not the showiness of the two previously mentioned. It is said also to be wild in Japan, but this is doubtful.

H. Thunbergi.—One of the dwarfest of the Hydrangeas, and one of the most uncommon. The flowers are in corymbs 3 inches or more across. The sterile ones are blue or rosy, according to the soil in which the plant grows. A native of the mountains of Japan, and more botanically than horticulturally interesting.

W.

Hydrangeas in the garden.

The Venetian Sumach.—This shrub, Rhus Cotinus, also known as the Smoke-plant, is at present very beautiful, the rosy-purple feather clusters with which its shoots are smothered being most effective. The great recommendation is the lasting qualities of its display, which continues attractive for nearly two months. Large bushes are very handsome. An open situation where the plant has space to exhibit its characteristics to the best advantage is desirable, a site in a thickly-planted shrubbery being the worst that could be selected, as the plant, though perfectly hardy, is soon crowded by its neighbours and thus shorn of half its beauty and strength. Fine specimens of Rhus Cotinus are not so common as its good qualities would lead one to expect.—S. F.

Lobelia cardinalis (Cardinal-flower).—This handsome perennial is now at its best, lighting up the border with its rich crimson-scarlet spikes, and standing out so well above its handsome foliage.—D. B. C.

HOUSE AND WINDOW GARDENING.

ARRANGING DAHLIAS IN VASES.

EACH section of Dahlias seems to have its allotted place in indoor decorations, and for this reason it is well to consider where the different types of the flower may be seen to advantage. Most gardens possess a few plants of some form or other of this useful flower, and as they blossom so freely one is rarely at a loss to refill the vases and other receptacles, when their somewhat fleeting beauty is over.

The large double flowers of the show and fancy types are very handsome when at their best, and a bold effect may be made with a dozen flowers in a large vase. But in such a position they should be cut with long stems and a few pieces of foliage attached, with a bud or two to stand out from this to relieve the heavy character of the arrangement. Of course, plants grown for exhibition would be severely disbudded, everything going for size; and because of this fact it might be a difficult matter to secure additional buds. However, in most gardens sprays of the kind I have just described may always be had. The stems may be kept in position by inserting between them nice fresh pieces of green Moss. On no account bunch the flowers together, but instead arrange them gracefully, so that each bud, flower, and piece of foliage can give an account of itself. It is really surprising what a splendid vase may be arranged in this way, a dozen sprays giving a rich effect, suiting the arrangement for the drawing-room, sideboard, or as a vase for the hall. The fact that the blooms are cut with their own foliage adhering to their long stem is ample embellishment in the way of foliage. Small vases and specimen glasses, each to contain one specimen bloom, are seen to advantage on the mantelpiece or dotted about on the dinner-table, and in the numberless ways in which small utensils are now used. Avoid the compact or rather tightly-packed bunches that one often sees, where better taste should be shown. The Cactus and decorative types of the flower are each year becoming the more popular kinds for decorations, and deservedly so. The former type of the flower is very pretty and effective.

A table decoration composed exclusively of the Cactus Dahlias makes a superb arrangement. There are so many warm tints of colour, which, seen under artificial light, produce rich effects. The numerous small utensils associated with a decoration of this kind may be arranged in the simplest possible manner, and very quickly too. For a centre-piece, or any of the larger vases on the table, long stems with foliage and buds become a necessity; but these are easily fixed in position with a little Moss. A much better effect is obtained if each type of the flower be arranged by itself, the beauty peculiar to each kind being by these means better appreciated. For this reason I advocate the use of the Pompone and the single-flowered sorts. The former are always very pretty by themselves, and being so neat and so freely flowered too, the supply from a few plants seems almost inexhaustible. The singles, unfortunately, fall so soon, but for an evening's display they last well indeed, and make a pleasing diversion.

When arranging the colours the selfs may be associated together, and an opportunity afforded to make a change with some of the fancy-coloured sorts on another occasion. The yellow, orange, fawn, and crimson flowers are magnificent under artificial light, while the white-pink and light shades of colour are seen to advantage during the day. Flowers of lilac, rose, and magenta look well under artificial light, and either one of these colours by itself, with white for a contrast, is effective. D. B. CRANE.

Luculia gratissima.—This is one of the prettiest and sweetest of our November and December flowers; our plants of it are small and growing in 6-inch or 8-inch pots, but they are bushy, and on the end of each shoot a large cluster of buds has formed. As a lovely pot-plant for a room the Luculia has no equal late in the season, and its flowers are most valuable for cutting. In plant lists it is classed as a greenhouse shrub, but ordinary greenhouses are too cold for it; it succeeds best in an intermediate temperature, and may be grown in either this or a stove until the blooms open, when they will remain fresh for a long time in a favourable corner in a greenhouse or conservatory. Our plants do well in a mixture of half peat and half loam, with a liberal dash of silver-sand.—J.

NOTES ON FUCHSIAS.

FEW summer-flowering plants can compare with Fuchsias either for elegance of habit and flower or for long continuance of the period during which they may be had in bloom. I find it best to have a good quantity of old plants for early flowering; young plants struck from cuttings late in the autumn, and kept gently growing during winter in a temperature of about 50 degs., make fine flowering specimens by midsummer, and by the time these get exhausted the spring-struck cuttings will be good plants. But Fuchsias may be had in beautiful bloom two or three times during the summer by giving the plants a rest. Pinch off all seed-pods and flowers, and set them out-of-doors in a partially shaded situation, giving them a top-dressing of rich manure, and they will quickly start into growth and flower as freely as they did when first repotted. As to sorts, there are few that can excel Mrs. Marshall among old varieties; Avalanche, Sunray, Venus de Medici, and Mme. Cornelisson are also very pretty. But for size of individual blossoms some of the newer kinds are certainly a great improvement on these. There are many ways of training Fuchsias, but, as a rule, the less of artificial training they get the better. Provide just stakes enough to support the strongest shoots, and let the side sprays grow and flower, drooping naturally. The accompanying illustration shows the beauty of the Fuchsia grown as a basket-plant, and for this purpose it is thoroughly well adapted. One does not lose the natural charm of the plant by thus growing it. J.

Fuchsia in basket.

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MAKING BOTTOM-HEAT BEDS.

WITH reference to this subject, upon which I notice several questions and notes lately, the following entirely practical remarks may be of use. In the first place, slate is not a good material to lay over the pipes, where the heat is obtained by this means. For one thing, it is not a good conductor, and if thin enough to allow the heat to pass through it freely it will be constantly cracking, and give way altogether under any undue strain or heavy weight. If thick enough to stand well, only a very gentle warmth can be obtained above it, even with three or four rows of very hot pipes below.

Again, I would strongly advise anyone requiring a good, useful hot-bed not to cover the pipes with broken bricks, etc. Some inches of rough ashes or the like must be placed over these before the Cocoa-nut-fibre, or whatever is employed to plunge the pots, etc., in, and by the time the warmth from the pipes has penetrated such a mass of material it will be barely perceptible, and certainly useless for propagating purposes. I have known quite a narrow bed made in this manner, with two rows of 4-inch pipes little if any more than a foot below the surface, and yet even when well and constantly heated, the warmth of the surface was practically *nil*. This method may answer well for Cucumber-beds, where only a very gentle warmth at the roots is required; but I have proved it to be quite unsuitable for propagating, etc.

The best of all materials for the false bottom in such a bed is the ordinary galvanised, corrugated iron now so largely employed for roofing, etc. If supported by bearing pieces of 3-inch by 4-inch batten, or stout angle iron, placed 15 inches or 18 inches apart, this will carry any reasonable amount of weight, while it is also a splendid conductor of heat, lasts for several years (especially if given a coat of hot lime before using, and occasionally afterwards), and, lastly, is very inexpensive. It is easily fitted, and with 4 inches of Cocoa-nut-fibre laid on it forms a perfect propagating bed, but the fibre must be kept constantly moist—this is

important. In a bed of this description, and say 4 feet wide, two rows of 4-inch piping, well heated, will afford a genial bottom-heat for the fibre, and three rows a brisk heat of 80 degs. or so, sufficient for any purpose. The pipes, however, or one of them at least, should be a flow, returns not affording a sufficiently active heat, and to obtain the best results the iron ought not to be more than 8 inches or 9 inches at most above the pipes. The chamber beneath, too, must be made as "tight" as possible; even quite a small aperture will let out a lot of the heat and spoil the effectiveness of the bed.

For other than bottom-heat beds slate is a capital material, being perfectly sweet and semi-porous. Pot-plants standing on slate usually succeed very well. B. C. R.

INDOOR PLANTS.

NEGLECTED PLANTS.

THE SWEET LUCULIA (LUCULIA GRATISSIMA).

THIS plant is now seldom met with in gardens, but it certainly does not deserve such neglect, for it is one of the most beautiful winter-flowering warm conservatory or greenhouse plants in cultivation. It is particularly well adapted for planting out in a greenhouse border composed of a mixture of turfy loam and peat in about equal parts. So treated, large bushes will soon be produced, which when in flower will fill the house with delicious fragrance in November and December. It is rare to meet with a good specimen of this fine old plant in a pot, yet when planted out and under favourable conditions in good soil and in a well-drained border, it grows like a Willow. One great point to be observed in its treatment is to prune back well after flowering; if this is not done the plant rambles upwards and then it soon gets naked at the bottom and does not flower well. It often, in the case of strong plants, makes 2 feet or 3 feet of wood in one season, and the flowers are borne at the ends of the shoots; therefore, it is important to facilitate the ripening of the wood as much as possible after growth is completed in summer by full exposure to light and by reducing somewhat the supply of water to the roots during August and September. The Luculia also makes a very fine plant for covering the back wall of a conservatory, and there is scarcely any limit to the space it will cover if in good health. Liquid-manure made from soot and given clear during the flowering and growing periods will add to the strength and beauty of its flowers and impart a rich dark green tint to its foliage. The syringe, with clean soft water, should be used frequently to keep the foliage clean. About the same general treatment that suits the Camellia for blooming at Christmas will also suit the Luculia. A really good specimen of this plant in a pot is rarely met with, and I think the reason may probably be that the plant is usually encouraged to flower before a good foundation has been laid for the future specimen. And until it is well established in a good-sized pot, it seems rather impatient of being cut back; plants are therefore allowed to flower without being subjected to cutting, and it is somewhat difficult afterwards to induce them to become bushy. In commencing to form a specimen select a young, healthy plant, keep it growing on in a comfortably warm temperature, in what is called an "intermediate-house," if possible, and persistently pinch or rub out the leading buds until a good foundation is formed for the future specimen. Do not allow it to flower until this object has been attained, and the plant so treated will be longer lived in consequence. When potting is necessary give a liberal shift, and the drainage must always be in perfect order. Although when making its growth, the Luculia delights in liberal supplies of water, anything in the shape of stagnant water at the roots produces stagnation from which there is little or no hope of recovery. The best soil for this plant under pot-culture is two-thirds leafy-loam, and one-third fibry-peat, with a dash of finely-powdered charcoal. The soil for potting should be well broken up and rubbed through a coarse sieve without extracting the fibre from it. Pot firmly; loose potting encourages rapid growth, but this is often inimical to the formation of a good specimen. This Luculia may be increased by cuttings made of the young side-shoots, taken off with a heel, and placed under a bell-glass in a cool situation until callused, then plunged in a mild bottom-heat. It may also be increased by means of layers. H. B.

THE TROPICAL WATER LILIES.

THE cultivation of Water Lilies is so simple that in gardens of even the most modest pretensions some of these plants may be grown without much difficulty. Where space cannot be spared for a tank, a large tub or number of tubs may be used with satisfactory results for Nymphæas. In the Royal Gardens at Kew these plants are one of the most attractive features during the summer season. To my mind there is no more charming picture to be seen in gardens than a large, well-grown collection of Nymphæas growing together and intermingling their handsome flowers, rich odours, and variously-formed leaves; and if other aquatic plants are grown along with them, and a few graceful plants, such as Cyperus, Cannas, or Musas, are tastefully arranged here and there among the Nymphæas, they add greatly to the effect. In some gardens it is the practice to dry off the Nymphæas and rest them during winter, and where the tank is wanted for other plants at this season this practice may be adopted. It is, however, by no means a safe one, the tubers often succumbing to dry rot similar to that which attacks Caladiums; still, if the temperature of the water is gradually lowered, and the water gradually run off so that the decay of the foliage may not be too rapid, the tubers will then ripen, and may be taken out of the soil and stored in sand in a warm place, or they may be left in the soil and the pots placed under the stage in any warm-house where they can be watched, and a little water be given when the soil gets over dry. In March the tubers may be repotted in a mixture of rich loam, cow-manure, and rough sand, and placed in their positions for the summer. Large pots should be used, as Nymphæas are best let alone when once they have started into growth. A temperature of from 65 degs. to 75 degs. will suit all Nymphæas, though, of course, the cool or hardy ones will do in a lower one.

A white tropical Lily (Nymphæa dentata).

In writing of the tropical kinds in the "Transactions of the Massachusetts Society" some time ago, Mr. Goodall, of Pansy Park, Dwight, made some interesting remarks in reference to these water flowers. He said that they are divided for the sake of convenience into day-blooming and night-blooming species. The day-bloomers open their flowers early in the morning and close about the middle of the afternoon. The night-blooming varieties open after sunset and do not close until nearly noon of the next day if the weather is cool or cloudy. Each flower opens four times. The following are day-blooming varieties:—

NYMPHÆA ZANZIBARENSIS is one of the most beautiful and the most easily grown of the tropical Water Lilies. Its flowers are of a rich, deep blue, and when well grown will measure fully 10 inches in diameter. N. z. azurea is like the preceding in everything except colour, which is of a lighter shade. N. z. rosea varies in colour from a pale rose to deep rose, almost crimson in some specimens. All of the above varieties are very free-blooming, beginning when the plants are quite small and continuing until frozen up in the autumn. They are so hardy that they will stand a good deal of cold weather without material injury.

N. SCUTIFOLIA is also very easily grown, and bears an abundance of flowers all summer. These are from 4 inches to 6 inches across and of a light blue, shading to white in the centre. It is a native of the Cape of Good Hope, and is hardy south of Washington, D.C.

N. STELLATA, from tropical Africa, is a free-blooming and desirable species, with large, bright blue flowers.

N. GIGANTEA is a native of Australia, and is considered by many to be the finest of all. Its flowers are of the largest size, with numerous petals of a beautiful purplish-blue, shading to white at the base, and it has a mass of golden stamens. This species when well started grows freely and produces flowers in abundance, but is one of the most difficult of all to manage in the younger stages of its growth. The young plants have a disagreeable habit of losing their foliage, and the tubers then go to rest for an indefinite length of time. I have had tubers remain dormant two years in spite of all efforts to start them into growth.

N. ELEGANS is a pretty species from New Mexico and Texas, with small white flowers tinted with pale blue.

N. GRACILIS, from Mexico, has large white flowers resembling those of N. dentata, but the plant is of smaller growth.

The following are night-blooming varieties:—

N. DEVONIENSIS, a hybrid between N. lotus and N. rubra, raised many years ago by the Duke of Devonshire, is one of the most gorgeous varieties in cultivation. The flowers are of a brilliant rosy-red, from 10 inches to 12 inches across, and borne in abundance, a dozen or more often being open on a plant at one time.

N. RUBRA is a native of the East Indies; it resembles N. Devoniensis, but the flowers are more cup-shaped and of a lighter colour.

N. STURTEVANTI is a hybrid of American origin and a magnificent variety, but a poor bloomer. It resembles N. rubra in colour, but the petals are broader and the foliage is quite distinct.

N. LOTUS is a native of the tropics of the Old World. It grows in abundance in lower Egypt, and is the true Sacred Lotus of the ancient Egyptians, and was sometimes engraved on their coins. The seeds and roots when dried and ground were made into bread by them. The flowers are 6 inches to 8 inches across, with broad, white petals.

N. DENTATA (see cut) is the largest of all white Water Lilies, the flowers being from 10 inches to 14 inches across, and of a pure paper-white. It blooms very freely through the season, and is one of the easiest of the tropical Nymphæas to grow.

The Victoria Regia is, of course, the most splendid of tropical flowers, but far too large to grow unless a house can be given to it.

Campanula fragilis (or Brittle Hair-bell).—For hanging-baskets, etc., nothing could be more beautiful or useful than the Hair-bell under notice, especially as it blooms during the late summer. I was impressed with its value more than ever by going into a small conservatory at Seaton a few days ago and seeing some fine specimens growing in 7-inch pots. They were placed on a shelf at the side of the house and hung down 2 feet to 2½ feet from the pot. Nothing could be more vigorous or beautiful, especially as they were associated with brightly coloured subjects, such as Ivy-leaved "Geraniums," Fuchsias, etc. Had these plants been grown in hanging-baskets they would have presented a sight not often seen. Everyone who wants a plant for hanging down should grow this, for it will thrive in a cold house through the winter. It is best increased from cuttings in spring.—J. CROOK.

Tufted Pansy Archie Grant.—For late summer display this is perhaps the showiest as well as the boldest of these bedding Pansies. It is taller and stronger growing than many, and much less tufted.

OUTDOOR PLANTS.

SUGGESTIONS FOR LARGE BEDS.

ON large lawns or in various nooks and corners in large pleasure grounds one often has to deal with large beds, and they make a brave show if well done. If small coniferæ are not objected to, a few occasionally in beds will be acceptable. A bed that I saw the other day had seven Retinosporas 4 feet high, and nearly as much through at the base; clumps of Galtonia candicans occupied the central spaces between the coniferæ, and it was finished with Crimson Antirrhinum. A hint for a bed of similar size planted in the same way, but with somewhat different materials, would be Lobelia fulgens Queen Victoria in lieu of the Galtonia, and Gypsophila in place of the Antirrhinum. With reference to the coniferæ, it is quite possible to keep them well within bounds and yet to avoid undue formality by judicious pruning, removing leading shoots carefully where this is necessary, so that no cuts are visible—in fact, so to leave the leaves when the operation is finished that it would be difficult to say a knife had been at work. The fact that the majority of deciduous shrubs are spring-flowering naturally prevents one from utilising them for the sites under consideration; their foliage, too, is not calculated to form that pleasing contrast when associated with hardy flowering plants that is characteristic of Retinosporas, Thujopsis, and other coniferæ. An exception must be made in the case of bright-foliaged shrubs, such, for instance, as the variegated Maples and Prunus Pissardi, that act respectively as admirable contrasts to the hardy Fuchsias or the Sweet Tobacco (Nicotiana affinis) or scarlet and White Phloxes. Some of the taller annuals of an enduring nature may also be used with advantage in such beds, and if dwarf plants have been previously employed for the purpose, their successors will be all the more welcome. Let me recommend a trial of the new miniature Sunflower, var. Stella. The type is now generally known, but this variety, both in vigour, in size of foliage and flower (nearly twice that of the older sort), may be accepted as a most decided improvement. Plants from seed sown in the latter end of March are already 5 feet high (July 27) and flowering freely, and this on an ordinary herbaceous border with very little preparation. On a bed that had received a thorough doing (to coin a familiar word) the plants by the middle of July would be full of vigour and covered with their large starry flowers. Let me add a good word for Nicotiana colossea. A demand for one or two good foliage beds on a large scale is often made, and as house accommodation is not always sufficient for so-called sub-tropical plants, there was at one time a difficulty in supplying the demand. The problem, however, is solved by the acquisition of the giant Tobacco. If sown early—say, some time in the beginning of March—potted off singly, grown on briskly for a time, gradually hardened off, and then planted in good soil, it will grow away at an amazing pace and soon furnish the bed. No plant with such enormous foliage can be grown so easily. E.

Tufted Pansy Dido.—This is a pretty little flower of the miniature type of the Tufted Pansy, and is just now flowering freely in the trial of these plants in the Royal Botanic Gardens, Regent's Park. The colour is a deep shade of blue, and the flowers are borne on long foot-stalks. The habit is spreading and the flower is fragant.—D. B. C.

Flowers on fruit-tree borders.—Flowers certainly are a great adornment to fruit-tree borders. Fruit-trees are generally grown for their fruit, and nothing could more surely defeat that object than planting vigorous-rooting flowers to compete with the roots of the fruit-trees for the food that is only sufficient for one crop. A correspondent lately suggested planting Irises, to be followed throughout the season by a succession of similar plants. From long experience I can safely say that Irises, and many other equally gross-feeding herbaceous plants, will soon starve fruit-trees into such a condition that fruit-growing will be an hopeless affair. I am well aware that a large bare vinery and other fruit-tree borders are by no means ornamental in gardens, but if first-class fruit is required, the only way to get it is to keep the border sacred to the roots of the trees growing in it, and the ornamenting of such border must be done by plants growing in boxes or vases, so that the roots are kept separate.—J. G., *Gosport.*

AN IVY ARCH.

THE accompanying illustration shows the beauty of the Ivy when grown to clothe an arch in the garden. It is rare to see such an admirable example of its value in this respect as that represented in the illustration. A good strong-growing kind is best. Emerald Green is perhaps as vigorous and leafy as any, and when properly cared for the growth is even and luxuriant. Strong plants must be put in and the soil prepared by enriching it if poor. Trimming of the growth in March is also necessary to get such a result as we see here. The Ivy is not always well treated in gardens, and the results are evident in patchy, worn-out growth.

An Ivy arch. From a photograph by Mr. Algernon Baker, Beechworth Lodge, Cheltenham.

The Wild Baneberry or Herb Christopher (Actæa spicata).—This is one of those instances of a vastly improved habit and beauty when given the benefits of garden culture. In bloom in May, the spikes of white flowers on a good-sized bush are no mean object, but when the big berries assume their deepest colour, as they do now, few plants are more showy. The spikes of fruit are 3 inches to 4 inches long, and well held up above the big leaves. The variation of fruit colour is also a feature which enhances the worth of the species for decoration. At present I have the black, scarlet, and ruby-crimson-fruited sorts in good form. I used to grow the white-fruited kind, but lost it. I have had the coloured kinds several times sent me for the white. I have an idea that this berry-bearing plant formed in groups of the different colours would give rich effects in openings of the wild or woodland garden—say, groups 10 feet or 12 feet in diameter and at distances far enough apart to distinctly maintain their individuality, and yet not too far to allow all to be visible from several points of view.

ORCHIDS.

Lycaste tetragona.—This peculiar plant is not much grown, but now and then it turns up, and I recently saw a plant in bloom in an ordinary stove where few other Orchids were grown. In habit it is not unlike a Stanhopea, and this identical plant was labelled as such. The flowers are produced singly on small plants, larger ones having two or three on a scape. The sepals and petals are dull green with brownish blotches and bars, and the lip is white spotted with crimson and purple. These flowers last a very long time in good condition, and are, moreover, very fragrant, but it is questionable whether it will ever become a popular plant. Equal parts of peat and Sphagnum Moss, together with a good sprinkling of rough charcoal and potsherds, will grow it well. The pots may be of medium size and well drained, being careful to have all the particles of compost rough and open. It may be best grown in an intermediate temperature, and while the growth is active can hardly be overwatered, provided the plants are healthy and the compost as described. During the resting season give just enough water to keep the bulbs in good order, and a winter minimum temperature of about 50 degs. is ample. It is by no means a difficult plant to grow, and may be recommended to those who like quaint and out-of-the-common plants. It is a native of Brazil, and was introduced in 1827.—T.

Aerides japonicum.—This requires less heat than any other in the genus, and may be grown in the cool-house provided it is carefully attended to at the roots and the plants well ripened in autumn. The best way to grow it is in small pans of Sphagnum Moss suspended from the roof, and it should have the lightest position at command. It has the same habit as the larger growing kinds, but the leaves are only a few inches in length. The flower-spikes are, however, fairly large, the individual blossoms being dull white, with bars and stripes of purple. With regard to watering at the root, the supply must be ample during the growing season, but while at rest only sufficient to keep the foliage in good condition is necessary.

Cypripedium Harrisianum albo-purpureum.—This hybrid is extremely variable, and the present variety is one of the darkest and most beautiful of all. It is, unfortunately, rather rare in collections, a much poorer form having often to do duty for the true one. This has a very deep purple tint on the dorsal sepal, and the lip is of a beautiful vinous tint, as seen in C. barbatum nigrum. All the Harrisianum varieties are good and useful Orchids, free-growing, and blooming and thriving under the most ordinary cultural conditions. It is one of the finest of the late Mr. Dominy's hybrids, and first flowered as far back as 1869.

Lathyrus latifolius albus.—This valuable old perennial is still among the finest of old-fashioned flowers in the garden, and where the plants are well established it has this season defied heat and drought alike. Thrips were very troublesome earlier in the season, but the rains and cooler weather have banished these to a large extent, and the plants are a mass of bloom, very fresh and pure. It is certainly among the most valuable plants for cutting, while the profusion of its flowers is remarkable. No garden should be without this variety, for it has no equal among hardy flowers.

THE GLADIOLUS.

The spike of Gladiolus White Lady we figure was one of three sent to us by Messrs. Haage & Schmidt, Erfurt. It is a seedling gandavensis raised by them between the varieties lactea and Blandine, and has been appropriately named White Lady. The flowers are pure white, with a slight tinge of pale yellow on the lower petals, the buds light yellow. It is said to be a robust grower, and has a distinct light-coloured bud. It grows from 2 feet to 3 feet high, and is certainly the finest White Gladiolus we have seen.

The following notes on this important family are from a lecture given by the well-known grower, Mr. Burrell, before the Royal Horticultural Society last September: First, as to the question of soil. Nearly all writers on Gladioli recommend a light sandy soil as being the most suitable; in fact, some go so far as to make this an essential, and condemn heavy loams as being totally unfitted for the purpose. On what grounds they speak so decidedly I have never yet been able to ascertain, but I assume that, as Holland is a great centre of bulb growing, and as the soil there is mostly of a light and sandy nature, the writers in question take it quite for granted that everything of the nature of a bulb or corm requires a light sandy soil for its proper development without ever putting the matter to the test. I have grown Gladioli in all kinds of soils and mixtures, and after careful consideration have come to the conclusion that the best results are obtained on a somewhat heavy yellow loam of an adhesive nature, without any admixture of sand—a soil which I consider, if anything, even of too close a texture to grow Brier Roses in. On such a soil I am able year after year to keep up a vigorous and healthy stock of Gladioli, and, no matter whether the seasons be hot or cold, dry or wet, I have always a good measure of success in producing flowers and corms. Perhaps I ought to have stated earlier that my remarks have reference to the fine hybrids of the gandavensis section, and I think it may be taken for granted that whatever suits these, as regards soil and general conditions, will also suit the more recent purpureo-auratus hybrids and Saundersi varieties, and these three sections it will, I think, be admitted contain all the most beautiful late-blooming Gladioli worth cultivating for the beauty of their flowers. The actual species from which they have been obtained are poor things in comparison with the fine hybrids produced from them by careful hybridisation. In recommending a somewhat heavy loam for choice I know I shall be told that splendid flowers of Gladioli are produced in soils of a light, sandy, and even gravelly nature. I quite admit the fact, and I believe that as regards the mere production of fine flowers it may be done in almost any kind of soil whatever; but I should only consider a cultivator really successful when, in addition to fine flowers, he is also able to keep up a healthy stock year after year, and this is more likely, so far as my experience goes, to be attained in a good holding loam rather than in any other kind of soil, at all events so far as the drier and warmer counties of England are concerned. In the more northern counties, where the rainfall is excessive and the climate less warm and sunny, some modification of the foregoing opinion might be necessary, and a soil of a lighter nature might be found more suitable. But it is a matter of history how, when a clever gardener like the late Mr. Standish attempted to grow these flowers on the light sandy soil of Bagshot, he utterly failed to increase or even to keep up a healthy stock, and their cultivation had to be abandoned. Monsieur Lemoine, on the other hand, has told us how well he succeeds with his Gladioli in his nursery at Nancy, where the soil is stiff clay, and from which he distributes his hybrids in such rapid succession. And although it does not appear that the gandavensis hybrids flourish there on stiff clay, they succeed admirably with me near Cambridge on a soil closely approaching clay, but where the drainage is good and rainfall light—an average of about 18 inches a year.

Gladiolus White Lady.

Closely connected with soil comes the question of

Manure.—Excessive manuring is extremely harmful, and is likely to generate disease. Of this disease I will speak later on; but when I see recommended layers of 6 inches to 8 inches of manure, and mulchings of nearly the same, with frequent doses of liquid-manure, I cannot help thinking it is greatly in excess of any of the requirements of Gladioli in a fairly average fertile soil, and I am sure that a portion of the manure and liquid would be much more profitably employed on some of the gross-feeding kitchen garden crops rather than in encouraging disease among the Gladioli. I mostly grow the bulbs, or rather corms, on ground which has been well manured for the previous crop, where, for instance, Dahlias or Roses have been grown the previous autumn, and this, I find, produces quite as good results as when I specially manured the ground for the Gladioli alone. An excess of humus in the soil is distinctly harmful, and the stock will remain far healthier in what is termed clean soil. My ground is manured with ordinary stable-dung. I have at times applied moderate dressings of bone-meal, fish-manure, muriate of potash, and other artificial manures, but all with doubtful results. I have sometimes given part of the stock a slight mulching with fresh straw-litter, but have generally found those grown without any mulching to do equally well. I carefully avoid mulchings of close, rank manures, and never employ liquid-manure in any form whatever. Clean cultivation is the best.

Although the average rainfall is so light (not exceeding 18 inches), I rarely ever water the growing plants; in fact, they seem to prefer a dry spring and a somewhat dry, warm summer. The hot, dry summer of 1893, for instance, seemed to suit them to perfection, as the finest growth and flowers I ever had were produced in the early part of August of that year, when the plants had very little rainfall and great heat and no artificial watering. That they prefer dry and warm conditions rather than those of an opposite nature seems to have been noticed by Dean Herbert in the earliest period of hybrid Gladioli. So far back as the year 1847, when writing of the greater hardiness of psittacinus (one of the parents of the present race of gandavensis hybrids), he goes on to state that it suffers much from July rains in many positions. With reference to the

Fungoid disease which attacks the corms of these plants, and with which the whole genus appears to be more or less affected, no remedy for its complete eradication has yet been found. Various suggestions have been thrown out; amongst others, that of breeding new races direct from the species. My own annual loss from disease barely reaches 10 per cent. Many people appear to have an idea that a Gladiolus should be propagated in the same way as a Narcissus, by the old bulbs increasing by natural division, and no doubt to a certain extent this is so; but this mode of increase invariably wears out, and it is to the young bulblets which cluster at the base that we must look for perpetuating varieties for an indefinite period. Otherwise named collections of Gladioli would not exist where the stock of any given variety could be obtained by the hundred or thousand, as is the case with many varieties at the present time. A paper on Gladioli would hardly be complete without some reference to the

Various sections of the flower. Many of the early varieties are pretty garden flowers, among which may be mentioned Colvillei and its white variety, known as The Bride, so largely grown for cut flowers; some few varieties of the nanus section and of the later summer-blooming ramosus section, followed by the fine hybrids of the Lemoinei and Nanceianus sections, which, thanks to the exertions of Monsieur Lemoine, have considerably prolonged the blooming season of Gladioli, as they fill up the gap between the ramosus and gandavensis sections. Many of both sections exhibit remarkable combinations of colours, and as they become more and more infused with the gandavensis blood, increase the number of flowers opening at the same time, and give a more erect habit of holding their flowers up, instead of looking at the ground, which is the fault of many. I believe we shall have at no distant date remarkable and new colours, including all shades of blue, and giving flowers and spikes equal in size to the fine gandavensis varieties, and, like the latter, opening a considerable number of flowers at the same time without loss of constitution. As many of the hybrids of gandavensis are as yet unrivalled in vigour, size, and beauty of flower and spikes, I do not fear a loss of constitution by an infusion of the good qualities of these into other sections, in order to obtain a greater variety of novel colours.

Jasminum revolutum.—This, the summer-flowering yellow Jasminum, although far less commonly seen than either the ordinary white form or the winter or naked-flowered species, is equally deserving of a place in any garden. The large yellow blossoms are very freely produced, at any rate by old plants, and are also deliciously fragrant. It is probably somewhat more tender than the other two, but here thrives luxuriantly, a large plant on the east side of my house being some 12 feet in height and almost as much in breadth, and when in bloom a sheet of fragrant golden blossom. Cuttings of the half-ripened wood strike freely about July.—B. C. R.

LILIUM AURATUM.

Some weeks ago I wrote you as to the want of success (unknown to me before, after a period of some years in which I have grown this Lily) in

Lilium auratum. From a photograph by Mr. C Holford, Preston House, Surbiton.

growing the above Lilies in 7-inch pots in my greenhouse, and which you replied to in your Gardening. Now, as a pleasing contrast, I enclose a photograph which I took of one of my Lilies grown in the open. It had four stems, which held thirty-seven large blossoms. I have many others in the ground, several of which have more than twenty flowers, so that I think my usual good fortune has not deserted me.

C. H.

CHRYSANTHEMUMS.

Early-flowering Chrysanthemums in the open border (*M.F.W.*).—If Ryecroft Glory and Harvest Home are representative of the varieties of the early-flowering Chrysanthemums in your collection, you have indeed the best of these very excellent plants for blossoming in the open. Among these plants there are now some very handsome varieties, and it would be a great pity to think of moving your plants indoors. Their proper place is in the hardy flower-garden, which they do so much to brighten and enliven when the dull season sets in. You state that the plants are in a south border, and ask, "What ought I to do with them during the winter?" You could not very well have a better aspect to flower your plants in, and as the season of blooming for the early-flowering sorts commences with the later days of August, and continues right on until the end of October, and during nice open weather a few weeks longer even, you will at once see there is no need to lift them to place the plants indoors. The early sorts are mostly appreciated because they fill up the period between the decline of the summer flowers and the opening of the mid-season display of the Autumn Queen, which commences in the early days of November. Our experience with these useful free-flowering plants is that, left undisturbed in the open border, they will reward you with a most floriferous display during September and October. Do not disbud the plants at all, except in the case of one or two very freely-budding sorts, such as Lady Fitzwygram, Mme. la Comtesse Foucher de Cariel, and those possessing similar characteristics, and then only disbud to a very limited extent. If you wish to lift a few plants, this must be done when the buds are well developed, and then plenty of soil must be removed with the roots. These may be put into large pots or boxes, and the soil pressed carefully around the roots; as you have no greenhouse, they would flower very well in a room with a south aspect, as you describe. Your question might also be understood to mean, how are you to keep the plants alive during the winter? In this case we advise you to cut the plants down after flowering, and then to place carefully around the base of them cinder-ashes, or a mixture of light compost, made up of sandy loam and leaf-mould. Rotten manure will also answer the same purpose. With very few exceptions, these precautions are generally successful in ensuring the production of strong and healthy growth during the succeeding spring.

Chrysanthemums—best twelve of an old collection (*Yorkshireman*).—Your list of twenty-six sorts includes many very old ones and few that may be considered at all new. We gladly give you what we consider the best twelve varieties from among them, assuming, of course, that they are intended to be exhibited as cut blooms and not as plants. With varieties just four or five years old you would always run a great risk of being beaten by other newer sorts, as these invariably show some distinct feature in advance of those already distributed. A grower to show Chrysanthemums must each year acquire the best of the season's novelties—at least, if he is to occupy the leading position in competition. Your best sorts for show would be Golden Gate, Viviand Morel, Col. W. B. Smith, Sunflower, John Shrimpton, Avalanche, Florence Davis, Owen Thomas, W. Tricker, Lord Brooke, Etoile de Lyon (a late bud of this sort must be retained), and Val d'Andorre. In the selection given here you will find a nice assortment of colours, but some of the sorts are rather difficult to finish off well.

Manure for Chrysanthemums (*H. Y.*).—You ask a question often put to us by different readers of Gardening, and we repeat that it is useless to give the plants food in the form of manure-water unless they are quite ready to receive it. Weakly plants must be got into a healty condition first, and the best proof of this should be seen in plants of robust appearance. You say your plants are just showing bud, and on this account the greatest care should be observed with them at this period of their growth. First get the buds retained and properly set, and when it is seen the plants are making progress, and the bud developing in size, apply weak liquid-manures. Give weak doses at first, gradually increasing the strength of the food until the maximum quantity is reached. There are many very excellent patent manures sold now, and these are often more convenient to use than those direct from the stable or farmyard. Clay's fertiliser, Ichthemic guano, Thomson's, Beeson's, and many others, each have their good qualities, and, taken as a whole, ½ oz. to the gallon of water is quite enough. Slightly less than this at first would be better. Sheep-manure, as well as that from the cow and the horse, is very valuable, and may be placed in a bag or sack and allowed to soak in a tank of water for a few days. These may be given about three times a week at first, varying the food as much as possible. Ultimately food may be given at each watering. It is important that all solutions should be clear, otherwise they form a sediment on the top of the soil, and thus interfere with proper root action by closing the air passages in the soil. Never exceed the limit laid down by the vendors when using patent manures.

Chrysanthemums—tying up the shoots (*A. G. N.*).—For several reasons you should not let your plants be neglected at this season. They make considerable progress just now, necessitating constant overlooking in regard to tying up the shoots. If this is left for any

length of time the growths very soon become unruly, and this fact may, in the end, give you some trouble. The shoots should be tied out regularly and systematically, as by these means the growth is kept in an upright position, and the flower-buds, as they develop, are formed evenly. If they are allowed too much liberty, or, on the other hand, be tied up in a careless manner, it is just possible, when the buds begin to unfold their florets, after the plants are housed, the shape of the flower will be much one-sided, and the symmetry which should distinguish all high-class exhibition Chrysanthemum blooms will be found wanting, and consequently your chances of success considerably lessened. Apart altogether from these important features in the successful culture of these plants, too much cannot be said of the value of tying out the shoots, so that sun and air may each play their important parts. It is absolutely necessary that the growth of all Chrysanthemums should be properly ripened, and for this to be satisfactorily accomplished each stem should be tied out so that this may be effectually achieved. Deep, full flowers invariably distinguish buds developed on wood of this kind, so for this reason, during the remainder of the present month, and if the weather be sufficiently promising during the first week in October, let the tying out of the growths be proceeded with. One cane or stake to each shoot is certainly the best plan.

FRUIT.

Peaches in the North of Ireland.—I took a Peach off yesterday that I think deserves to be described in your columns. It is a beautiful fruit, well shaped, well coloured, measures 10½ inches in circumference, and weighs ¾ lb. The variety is the Sea Eagle, and it has borne a very large crop—over 12 dozen fruits. The greater number weigh about 10 ounces each. The centre of the Peach round the stone is a rich crimson, almost scarlet, and it is a most luscious fruit. This tree has borne a splendid crop for several years, but this year it is above the average, and reflects very great credit on my gardener, W. Magill.—A. P. Mansfield, *Castle Wray, Setterkenny, Co. Donegal, Ireland.*

Pruning fruit-trees.—Many of your readers here, myself included, would much like a short article on the summer pruning of fruit-trees, especially Apple and Pear-trees?—P. B. Stoney.

*** Our correspondent suggests a note upon the above, which we have pleasure in giving. As it is a very wide subject we must confine ourselves to those bearing their fruit upon spurs, such as Apples, Pears, Plums, and Apricots. In the first place we may say that summer pruning depends almost entirely upon whether the plants are producing rank growth or not; a medium growth needs very little pruning. A standard Pear needs very little stopping or pruning, while bush Pears should be allowed to develope about half-a-dozen strong shoots, and the laterals afterwards kept pinched back to form and strengthen the spurs upon which fruit will be borne. Unless we pinch or cut back to within 6 inches or so of the spur, side-growths are much too numerous, and rob what would otherwise be fruit-bearing wood. Leave a few growths as an inducement for plenty of sap to flow by those spurred back. From the first try and keep the centre of the plants free from superfluous growth. Do not remove the whole of these branches at one operation, but spread it over at least three if your plant be very vigorous, otherwise the check may develope canker. It is also best to commence from the top. When strong growths are made in June these should be pinched back to balance the remainder. When fruit is ripe, or nearly so, cut the other shoots down to within five or six eyes or buds. It is more as a means of balancing the growth and maturing the spurs that summer pruning is adopted; as if we allow the trees to make a lot of coarse growth, and cut this back in the ordinary way season after season, we get indifferent spurs and very little fruit. At the same time, we frequently come across cases where summer pruning is overdone. The whole question lies here, and Apricots, Pears, Apples, and Plums may be treated in the same way, provided one uses a little discretion as regards the vigour of their growth. In the case of the Apricot, it is well to leave a few leading shoots annually, cutting or pinching back the laterals in August to form strong spurs. Unfortunately, this fruit is apt to canker upon its best branches, and this necessitates the laying in of more each season. The above remarks are applying to fully developed trees only. An Apple, Plum, or Pear must be allowed greater liberty while very young and small.—P. U.

GREEN GAGE PLUMS.

Amongst Plums Gages take a high position for quality. In competition no variety is equal to a perfect specimen of Green Gage. For flavour, and that is the true test of a dessert Plum, no variety possesses anything approaching this. There are various types of Gage Plums—Green Gage, Purple Gage, and Transparent Gage. All these have the same characteristics of form and flavour; the flesh, too, parts readily from the stone. There are no less than five sub-varieties, differing perhaps only in the time of ripening. This latter, however, is a distinct point in their favour, as the season is prolonged in consequence. Bryanston Gage is larger than the ordinary Green Gage, and ripens its fruit a fortnight later. The ordinary Green Gage ripens at the end of August. July Green Gage is ready for use fully a month earlier than the type,

The Green Gage Plum.

and is quite equal to it in quality. Late Green Gage has smaller fruit but good in flavour, and does not ripen until the beginning of October. McLaughlin's has large yellow fruit mottled with red and covered with a thin bloom; ripe from the middle to the end of August. The Purple Gage is ready for use about the middle of September. The fruits of this variety appear to improve in flavour by allowing them to hang on the tree till they shrivel. Reine Claude de Bavay has greenish-yellow fruit mottled with green; in use end of September and beginning of October. Transparent Gage has fruit of good size, round, flattened, greenish-yellow marbled with red, flesh transparent, rich, juicy, and of high excellence; ripens in September.

As to culture, Green Gage Plums succeed best against a wall. It matters not whether it is a southern or eastern aspect; the former, however, for preference. The aid of a wall is a great point in success. In some gardens the Gage Plums succeed as bushes and standards. The trees are, however, much more liable to the loss of flower-buds by birds in the spring than trees growing against walls, as the latter are easily protected if necessary. Seldom, however, do birds attack wall-trees in the way they do those in the open. Gage Plums, especially the Transparent variety, grow vigorously, and very often require much patience before they can be brought into a good bearing condition. Root-pruning is the best means of producing healthy, free-bearing trees. The end of September is the best time for root-pruning. Where trees are growing against a wall, and the border in front can be trenched deeply to within 4 feet of the trees, the strong-growing roots are kept in check and induced to produce fibres, which are really the fruit producers. It is the presence of strong fibreless roots that is the cause of exuberant growth that never can produce fruit. Green Gage Plums like a calcareous loam to grow in. If the natural soil is not of this kind it can be made so by adding brick-earth and old mortar-rubble. It is not wise to be continually moving the surface soil; much better make it firm and allow it to remain so. Frequent top-dressings of half decayed manure will provide nutriment sufficient without the burying of manure at all.

Plant high in all soil, especially if it is somewhat heavy and retentive of moisture, as the nearer the roots are to the surface the better will the branches and spurs mature. The end of October is the best time to plant either against a wall or in the open. The following February prune the shoots of the previous season's growth back to within 8 inches of the base to ensure a good foundation for the future.

Too many persons neglect their trees after the fruit is gathered. Presuming the weather is hot and dry, as it often is in the autumn, trees growing against walls very often suffer for want of moisture at the roots. It is at that period that the final stage of maturation of the fruit-buds is completed; if the roots are not sufficiently supported with moisture they cannot possibly assist the blossom-buds. Green Gage Plums are at times troubled with insect pests and some disease. The worst of the former is perhaps white and black aphides. Tobacco-water and soft-soap will disperse both if early attention is paid to the trees, syringing them directly the insects can be discerned. Too often the trees are neglected until the young leaves curl up, are checked in development, and are crippled entirely. The leaves of some trees sometimes show thickened, fleshy, orange-red spots, known as Polystigma rubrum. Pick off all affected leaves and burn them. B. M.

Peaches (*F. C.*).—As there are some sixty varieties of Peaches in cultivation, and your fruits sent are not only very small and out of character, but partially decayed, it would be impossible for anyone to name them. The leaf and its glands often prove to be the best helps to determine variety. Early Beatrice is ripe in July. Yours seem to be much later. Your general treatment seems to have been all right, as is evidenced by the satisfactory results of other trees in the house and even a portion of the variety in question; one-half of the tree seems satisfactory. If, therefore, the trouble complained of—very small, imperfect fruit—be limited to one-half the tree, it sees obvious that this particular half is diseased, and may probably die. If it be so no treatment can save it. You may find next spring, should the half still be alive, that small leaves are put forth, then collapse entirely. In view of that, it would be well to have a young trained tree at hand ready to plant to fill the void. Possibly it would be better still to cut away the diseased half carefully, and, replacing the old soil with new, plant a young tree in October. You must judge of what is best by the appearance of the half complained of, now and at leaf-dropping.

Raspberries.—Varieties that have finished ripening their crop should have all the old canes removed that more light and air may be admitted to the young ones in order to thoroughly mature them. When they are grown in clumps the young canes should be drawn together to prevent breaking down by the wind; at the same time, care should be taken not to injure the foliage, or the buds will fail to push in the spring. If single rows are cultivated thin out the young canes to the required distance, then tie them loosely up to the wires. Do not shorten their growth, as this would induce some of the buds to push, which would in all probability spoil the prospects of the crop for another season. Encourage the autumn-bearing kinds by liberal waterings, particularly where the soil is dry, otherwise the crop will be a thin one and the fruit of but poor quality.

Acacia lophantha.—This graceful foliage plant is seen to advantage in summer bedding when associated with other less elegant plants. It is a quick-growing subject, and may be raised from seed sown in heat early in the year and gradually hardened off before planting out in the open. A beautiful effect is obtained by its use in some of the beds in Regent's Park.—D. C.

GARDEN WORK.*

Conservatory.

Salvias for winter flowering, which have been planted out, should be potted up and placed in a shady place outside for a few days, till the roots get to work again. The same treatment will suit Eupatoriums, Solanums, and Arum Lilies. It is best to divide the stock of Arums and Solanums into two parts if required for autumn decoration, as when grown in pots through the summer, if well managed, they come into flower sooner. Chrysanthemums which have filled the pots with roots may have liquid-manure two or three times a week. A little poultry-manure mixed with good loam is useful as a top-dressing. The plants seem to like it, and the white roots soon work through on to the surface, and poultry-manure is cheap. Thirty shillings a ton is the price we have paid this summer, and at this rate it is cheaper than artificials. It is valuable for moving purposes, especially for top-dressing Tomatoes. Roses in pots intended for forcing should be overhauled, and any pruning required done, and, if necessary, repotted. To grow Roses in pots well they must have good loam, which should be enriched with old cow-manure and bone-meal. Pot firmly, and leave the plants outside for the present. The Indian Azaleas will soon be here from Belgium. Pot on arrival with good peat, suitably mixed with a little sharp sand—say, about one-eighth part. Pot very firmly, and stand in a cold-house or pit till required for forcing. The semi-double white variety Deutsch Perle may, by judicious forcing, be had in bloom by Christmas. Rhododendrons for forcing should be potted and plunged in ashes till required, or until frost comes, and then be taken to a cool-house and later on forced moderately. If potted early enough Roman Hyacinths may be had in bloom by the end of November. Continue to thin the growth of climbers to compensate for the decreasing daylight. If Camellias are required to bloom early the growth must be made and ripened early, and the plants kept in a cool north-house all summer. Palms and Tree-Ferns which are in a pot-bound condition may have larger pots now, but the work should be done at once. The Australian Tree-Ferns, Dicksonias, Alsophilas, etc., must never be permitted to get very dry, or the fronds will die off. Large specimens are noble plants for large houses as backgrounds or centres.

Unheated Greenhouse.

It is quite possible to have a certain amount of bloom in this structure all winter, and a good deal of colour can be introduced by growing a few suitable foliage plants. Arundo donax variegata and one or two of the hardy or nearly hardy Bamboos will be useful. Gold and Silver Euonymuses and nice specimens of the Gold and Silver Tree Ivies are charming things in winter under glass. The Fan Palm Chamærops excelsa and Fortunei are excellent furniture for the cold-house, as are standard and pyramid Laurestinus, Andromeda floribunda, Jasminum nudiflorum, and, of course, Chrysanthemums in variety.

Pines.

These are generally overhauled at this season, and the plunging-beds made comfortable for the winter by the addition of fresh material, and any successions which are likely to require more pot room receive a small shift; but beware of overpotting, as Pines will not root in sour soil. Suckers may be taken off and started in bottom-heat, in as small pots as they can conveniently be got into, after pruning the bark. Fires will be necessary now to ensure a comfortable bottom-heat of 85 degs or so. Sixty-five degs. top-heat will be sufficient through the ripening, though ripening fruits may have 5 degs. more. The atmospheric moisture should be in proportion to the weather—whether sunny or otherwise—and the fire-heat employed. Plants bearing ripe fruit which it is desired to keep as long as possible should be removed to a cooler house.

Early Vines and Peaches.

The Vines and Peaches which have been forced should be kept as cool as possible, full air being left on night and day. Any Grapes still hanging on early Vines may be cut and bottled, and suspended on racks or shelves in a cool room. Peaches which are making too much wood may have the roots lifted to give sufficient check to moderate the growth. This will apply chiefly to young trees, as older trees which have commenced to bear freely soon acquire a steady fruiting habit. Both Peaches and Vines may have redundant and surplus wood cut away now to let in the sunshine to complete ripening. The borders of early vineries may be top-dressed with bone-meal or patent silicate manure. The latter is useful where there is any tendency to shanking or deficiency of colour. Wood-ashes or charcoal dust are useful in moderation to mix with any fresh loam for top-dressing Vine-borders. Of course, the borders of late houses will not be interfered with now; but it will be a good plan to cover outside borders with shutters, or sheets of corrugated iron may be laid over the borders to throw off the heavy autumn rains which we are likely to have before long.

Orchard House.

When the fruit has been gathered place the trees outside, and it will be well also to do whatever potting or top-dressing is required before the leaves lose colour, so that the roots may begin to move in the new soil before winter sets in, and before frost comes protect the pots with long litter or Ferns to shelter them. The house can then be filled with Chrysanthemums, or used in any other way, till required again for the trees.

Mushroom House.

Make up beds for autumn and winter use as fast as manure can be had. The house should be thoroughly cleaned, and, if possible, lime-wash the walls. Obtain good spawn and fairly fresh straw litter manure from hard-fed horses, and there ought to be no failures.

Window Gardening.

Pot Roman Hyacinths and early-flowering Daffodils and Tulips. Plunge outside for a month or six weeks, and then place a few in the window of the warmest room and the remainder in a cold-frame to come on in succession. Pot young, choice plants from the border, and stand in the shade for a time.

Outdoor Garden.

Weeds are on the move again after the rain, and leaves are falling, indicating that autumn is near, and more time must be given to what is termed tidying up, for an ill-kept garden is never satisfactory. Many who grow herbaceous plants have discovered during the recent dry weather that the borders want breaking up deeper, and more manure to be given. Roses luxuriate when under the influence of the manure from that unsavoury animal the pig; but it does not follow that the roots of the Roses or other plants should be placed in the manure. Dig the land up deeply, and blend the manure with soil; the roots will find it when they require food, and will be all the stronger and better for the effort which reaching for their food calls forth. The late Rose kinds have done better than the early ones, as buds of all kinds—both Roses and ornamental trees—are best inserted when the earth is moist enough to make the bark work freely. Ties should be loosened as soon as the bark unites—not taken off altogether, but just loosened to give room to swell. Dahlias are in fine condition now where their wants have been attended to. The Cactus varieties are still in the ascendant. It is a pity some of the varieties do not show a little more above the foliage. The buds must be freely thinned to obtain fine flowers.

Fruit Garden.

How the Apples are falling in gardens where no thought is given to the work of the Apple-moth! Many of these fallen Apples contain a maggot, the larvæ of the above moth, which, if permitted to escape from the Apple, will hide in the ground till he can climb up the tree and lie dormant in the chrysalis state in some crevice of the bark till spring. All fallen Apples should be gathered up if possible before the maggot eats his way out, and used in such a way as to destroy the maggot. Many years ago it was the custom to wrap hay-bands round the trunks of the trees to form hiding-places for the larvæ of this moth—for this trouble is not a new one, though it seems to have accentuated within the last few years—and when the hay-bands had served their purpose they were taken away carefully and burnt. Then someone suggested grease-bands as an improvement upon the old system, as the insects in crawling up the tree were arrested and held fast by the band of grease. Certainly something ought to be done to get rid of these destructive insects, and it should be done promptly. Strawberries will go on well after the rain. Keep down runners, and permit no weeds to grow. Remove laterals from Peaches under glass, and any surplus branches which can be spared may be cut out now after the fruit has been gathered so as to get the young wood well ripened.

Vegetable Garden.

Potatoes are supertubering where left in the ground. Late sorts which are still green must be left to grow out now, as it is too late to lift them; but all early and second early kinds should have been lifted before the rain came, and stored. Potatoes are almost sure to be dearer this coming winter, and as a consequence seed Potatoes will be dearer next spring. The variety named Up-to-Date seems likely to make a useful late variety; it is a good cropper, and the quality is good. Finish thinning late Turnips. Earth up greens. Break a leaf or two over Cauliflowers turning in. The true Walcheren is still one of the most useful Cauliflowers for late use; the Autumn Giant is too large for a gentleman's table where quality is considered. This has not been a good season for late Peas, but that good old variety Walker's Perpetual is doing well. The large-podded Peas are large enough for exhibition where the judges study size; but for quality they will compare with the smaller-podded Marrow of the Ne Plus Ultra type. Plant a pit with French Beans where a little heat can be turned on when cold weather comes. Plant a house with Cucumbers for autumn and winter bearing. A small light house may be planted with young, sturdy Tomatoes of an early ripening kind, to carry on the supply when the others fail. Draw earth up to Leeks. Sow Chervil, Corn Salad, Radishes, Mustard-and-Cress, and Bath Cos Lettuces to stand in the seed-bed.

E. HOBDAY.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 13th.—Put in more "Geranium"-cuttings. Lifted plants of Mrs. Pollock, Lady Cullum, and other delicate sorts planted for stock purposes. Potted up winter flowering Salvias which had been planted out to make growth. Thinned late-sown Turnips and Spinach. Earthed up more Celery. Paper collars had been placed round the plants a fortnight or more ago. Planted Walcheren Cauliflowers on south border. Planted Cabbages after spring Onions. Rearranged conservatory. Introduced several groups of early-flowering Chrysanthemums.

September 14th.—Sowed Antirrhinums—selfs chiefly. If sown too early with us they suffer in winter. Put in cuttings of Pentstemons in cold-frame. Chrysanthemums which have filled their pots with roots are now receiving liquid-manure twice a week—Ichthemic guano chiefly. Gathered several kinds of early Apples and Pears. Lights of vineries which open have been covered with hexagon netting to keep out wasps. Morello Cherries on north wall have been covered with the same material to keep them as long as possible. Saved seeds from a very good strain of dwarf Petunias. Selected a number of fruits of Freedom Tomatoes for seeds.

September 15th.—Filled a frame with Pansy cuttings of various kinds. Looked over budded Briers to loosen ties, and rub off shoots from Briers. Put in cuttings of various kinds of evergreen shrubs in shady border. Mulched between the rows with old partially-decayed leaf mould. Shifted on young Palms and Ferns, including a lot of seedling Dicksonias. Sowed spores of various kinds of Ferns in a shady corner of stove. Covered the pans with glass. Shifted on a lot of young plants of the African Primrose (Saintpaulia ianthema). Potted more bulbs of various kinds for forcing, and plunged in ashes outside. Moved a lot of Tuberoses to warm-house to open flowers faster.

September 16th.—Shifted a lot of Poinsettias into 6-inch pots, and moved to a low span-house where a little heat is used. Earthed up Winter Greens. Cleared off exhausted Peas and trenched ground. Our best late Peas this season are Walker's Perpetual and Ne Plus Ultra. These were heavily mulched. Looked over Chrysanthemums to tie loose shoots. Staked a number of large specimens of various kinds in 12-inch pots. These are really more useful in the conservatory than the plants grown for specimen blooms, which run up high; but our useful decorative Chrysanthemums are struck in March, cut down in May, and one strong shoot taken up which will carry a large bloom. They are grown in 7-inch pots.

September 17th.—Pinched the flowers off winter-flowering Zonal Pelargoniums for the last time. Put in a lot of cuttings of large-flowered Marguerites. We used to have some trouble with the leaf-boring maggot, but since we have used the vaporiser we have not seen any. Shifted Cinerarias into 5-inch pots. Shall keep in cold-frame as long as it is safe to do so. First batch of Cyclamens have been moved to light, airy house. Sowed Cyclamen seeds for next year's plants. We always sow about now, and keep the plants constantly moving. Planted out more Lettuce and Endive on warm border.

September 18th.—Put in cuttings of Ivy of various kinds. Commenced taking up turf with the view to make some alteration in the grounds to prepare some new beds for Roses on the lawn. Planted a number of Ampelopsis Veitchi to cover a new brick building. Ran the water out of boiler and pipes for one house, which requires more pipes to supply more heat. I do not think it is wise to have many houses attached to one boiler. There is little saving in it, and the circulation sometimes gives trouble. Doing outside painting in fine weather.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1569—**Plants for shady border.**—I should be glad to know what flowers—perennials by preference—would grow and flower well in a very shady border under trees, which gets little or no sun. A list of good flowering herbaceous plants wanted for autumn planting.—MRS. HULTON.

1570—**Cedars of Lebanon.**—I brought three cones from the Cedars of Lebanon, and successfully raised seventy little plants. A great many turn over and die. Can anyone tell me how they should be treated? I have tried a variety of soils and positions for the boxes they are in. They are no worse in the wet weather than in the heat.—L. B.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1571—**Victoria Plum and Blackberries** *(Geo. Hole).*—You should succeed with both of the fruits you name.

1572—**Discoloured Vine leaves** *(S. Wood).*—Send us a leaf or two. We cannot guess at causes and remedies without any data to guide.

1573—**Growing Apricots** *(H. F. D.).*—Apricots would succeed in such a house alone if they received abundance of air. Any attempt at forcing or "coddling" would end in failure.

1574—**Piping in greenhouse** *(Chrys).*—Your plan should do very well; but we prefer glass to canvas, although there would be little gain provided oil canvas was used.

1575—**Malmaison Carnations in lime soil** *(C. Wood).*—What do you mean by "lime soil?" Carnations do not need much lime—very little indeed, in fact. A good rich loam that is neither heavy nor light suits them best.

1576—**Auriculas** *(Auricula).* — Move the alpine Auriculas early in spring. It is not a bad plan to lift now and part, keeping them in small pots under cover of a cool frame, and replanting early in April.

1577—**Strawberry-plants covered with white spots** *(G. Wood).*—Like your other query, this is too vague. Send a leaf. But we do not think it is any harm, and may be only the first effects of ripening.

1578—**Treatment of Ceanothus** *(J. W.).*—It is too late to prune the Ceanothus this year without

sacrificing the bloom for the coming year. Cut it back as far as necessary immediately it has finished flowering next year.

1579—**Boronia megastigma** (*Sunflower*).—This sweet-scented plant is very difficult for amateurs to grow. It needs a warm greenhouse, peat and sand for compost, very little and careful watering, and should be housed by September.

1580—**Mildewed Clematis** (*E. M. Greenwood*).—Atmospheric changes are the chief cause of mildew, and unless under cover you cannot prevent these. Syringe with a solution of soft-soap at the strength of 3 ozs. to 2 gallons of water.

1581—**Weeds** (*E. S.*).—The name of your weed is Equisetum, one of the native horse-tail Rushes. Your ground is very wet to grow this freely. Pull it up and remove the sods or turves of root at the same time. We know nothing of the Bean you mention.

1582—**Oil stove** (*Ginger*).—Several are advertised in our columns, and the capacity and merits of each given. You do not say how large your house is, and with these stoves that is a most important item. Write to one of our advertisers for a list and prospectus.

1583—**Bulbs in cellar** (*H. C. Jones*).—No advantage so long as the cellar is quite dark and free from slugs. The object is to encourage a little longer growth of the flower-spike than would come if fully exposed from the first, more especially under cool treatment.

1584—**Treatment of Clematis** (*Clematis*).—Prune back in late autumn, or perhaps it would be better to so fix the top growth as to clothe the bottom once more. We should prune rather hard. The lower growth must be alive or the top could not derive sap.

1585—**Sickly "Geraniums"** (*C. G. Wood*).—In all probability your plants are beneath other subjects and have received the honeydew and droppings from green fly. Wash well both the "Geraniums" and plants above, after picking off the worst of their leaves.

1586—**Repotting Eucharises** (*R. T. L.*)—Use a compost of turfy loam, leaf-soil, and a little charcoal. Do not break up too finely, and pot firmly. This may be done at any time after the plants have gone out of bloom, but is better about six weeks after. Keep them in the stove.

1587—**Climbers for lean-to greenhouse wall** (*Phil*).—Clematis indivisa lobata and Jasminum grandiflorum might suit you. Lily of the Valley prefers partial shade and a deep, rich soil; in other respects the aspect does not matter except to prolong the flowering season.

1588—**Strain of Carnations, etc.** (*Lancashire Lad*)—We presume these are much like other strains. There is nothing, so far as we are aware, perfectly distinct from others. Put in cuttings now of Pentstemons. Yes, they will stand the winter with protection from frosts during very severe weather.

1589—**Standard Rose** (*F. P.*).—Why not form a standard as well as any other? Take off ripened growth at the end of September or early in October. Make the cuttings 6 inches or so long, and insert in sandy loam. We shall have a short note upon these and the production of Rose-stocks shortly.

1590—**Mealiness in Peaches** (*A T. B.*).—We do not know to what you refer as "mealiness." Is it upon fruit or foliage? If the latter, it is probably mildew, caused by extremes of temperature. You cannot well syringe now that the fruit is on, and must try to regulate temperature better in future.

1591—**Fern-growing** (*S. Tucker*).—We can only suggest that your Maiden-hair Ferns have been kept too dry since in full growth. Although not needing a wet soil, the compost is generally so well drained that many err by not giving enough water while in full growth, with a dry atmosphere

1592—**Stephanotis floribunda from seed** (*G. Fryer*).—Sow the seed in a temperature of 70 degs., using a compost of peat and loam in equal proportions, with a very little sand. They are so readily increased by cuttings of partly ripened side-growths that very few are obtained from seed.

1593—**Stoves** (*M. S., Ripon*).—We have seen the small stoves such as you describe in use several times, and they are certainly a great improvement upon oil-stoves alone, the air being less parched and freer from smell of oil. We do not recommend individual traders, so please look through our advertising columns.

1594—**Earwigs on Chrysanthemums** (*S. Wood*)—Place a few small pots on sticks Invert the pots, and put a little dry Moss inside. The earwigs will shelter here during daytime, and may be easily caught. Also, put a few pieces of dry mat or sacking near the pots of the Chrysanthemums as further traps and shelter.

1595—**Poor lawn** (*B. P. L.*).—You must drain your lawn where wet, and add some stiffer loam where very dry. Nothing can be done with a piece of patchy ground full of various weeds, and this must first be remedied. After then level and sow more seed. Be sure you get the best lawn Grass seed, and add a little white Dutch Clover.

1596—**Destroying Horseradish** (*T. H. S.*).—You can only dig up the roots carefully and deeply. It would be almost hopeless to make a lawn upon such ground until they are removed. By constant uprooting during a winter and spring, and pulling up each small portion as soon as seen, you will get the ground clear in a season, not less.

1597—**Peas not of true colour** (*E L H.*).—If your Peas were growing near others of an inferior variety the flowers might easily have been cross-fertilised. Many plants do not come so good by seed as when increased in other ways, while others are better when so propagated. We would advise you to increase by division of roots.

1598—**Grape-berries bursting** (*An Amateur*).—There are two causes of this. It may be your Vines are too wet at the roots, or the atmosphere in the house is kept too moist during the ripening of berries. Remedy these faults. But when the berries once begin bursting the mischief is generally done, and after measures have little effect.

1599—**Height of wall** (*T. H*)—You might go as far as 10 feet, or even a little more, provided you did not allow the roof of your lean-to to press dead against the wall. One so wide as yours would require an additional support under any circumstances, and you might easily arrange for this to be about 4 feet from the wall. You would need about 160 feet run of piping.

1600—**Lifting Arums** (*T. H.*).—Lift the Callas and Arums at once, giving them a compost of rich loam and stable-manure in equal parts, the latter to be well decayed. Use a pot 6 inches in diameter at top, and if the soil be rich and liquid-manure used when coming into blossom they will thrive well. We would leave them in the open for a month or so after potting.

1601—**Shoots on Vines** (*T. B. B.*).—You did quite right to allow the side shoots to grow to two joints—in fact, your treatment was correct in every way. When pruning in November cut the canes well back. Presuming the house is fitted with horizontal trained wires, you should cut the Vines back to within three eyes of the wires so as to leave one pair of side shoots and a leader.

1602—**Plants for border** (*Learner*). — Forget-me-nots, Silene pendula, Delphiniums, Phloxes, Alpine Auriculas, border Carnations, Wallflowers, Polyanthuses, Sweet Williams, Dielytra spectabile, Doronicums, Hepaticas, Ranunculus, Columbines, Saxifrages, Violas, and Veronicas are a few suitable subjects; but you do not say what class of plants you want nor when to be at their chief beauty.

1603—**Treatment of Cytisus** (*A. Reader*)—See our issue for May 29 as regards propagation. It is illustrated there. Repot your old plants now, and if they have not been pruned cut them back into shape at once. Remove to the greenhouse at the end of next month, and give a temperature of 40 degs. to 50 degs. They enjoy a rich loam and leaf-soil, with just a dash of sharp sand to improve drainage.

1604—**Storing Beetroots** (*E. M. A.*)—Beetroot stored in moist sand in a frost-proof shed or cellar will keep fresh till the following June. The roots should be dug carefully up before frost injures them. Do not cut off the leaves too close or injure the roots, or they will bleed and decay prematurely. Once during the winter they should be turned over to remove any decayed roots or new growth of leaves.

1605—**Leafless Pear-tree** (*C. S. Wood*).—Pears are often affected by the tiny grub you name. You can only syringe well with a fairly strong insecticide. Soft-soap at the rate of 2 oz to the gallon will kill. Do not use the syringe as if cleaning windows, but make a succession of short strokes, and so send out the solution in spray rather than jets. This is even more effectual, and the mixture goes so much farther.

1606—**Bulbs to flower next August** (*G. W.*).—Start Tuberoses in February; such Lilies as Harrisi and auratum by end of April; Hyacinthus candicans in March, keeping these in the open air; Scarborough Lilies to be treated the same as the preceding; and Crinum Powelli in March, and only slightly protected, about exhaust the list. You can have much variety from these, but the date if not a very suitable one for bulbs.

1607—**Turk's-cap Gourd** (*L. Lloyd*).—Your Gourd—for that is its proper designation—is the true Turk's-cap, or sometimes called Turban because of the resemblance it bears to that Eastern head-covering. Its edible value is small, and it is grown more as a curiosity or ornament than for any particular value. Still, the Gourd will keep sound a long time, and in the winter the flesh may be used in soups, as is common with Pumpkins.

1608—**Designs of gardens at shows** (*J. A.*).—We do not know of the most successful designs—by which we suppose you mean as regards taking prizes. In our opinion such things are a ridiculous feature at any show. No model can be made or laid out with due regard to proportions of flowers and plants. Far better have a good design and plan upon paper, giving prizes for these in preference to the toys we so often see at village shows.

1609—**Flowers for north side of wall** (*Malton*).—As your position is very bleak we do not think you could do better than plant some of the many beautiful forms of Ivy. These would be showy all winter and summer. You might plant tubers of the Scotch Flame-flower in February to give a little colour in summer, also the more hardy of Clematises; but bulbous plants would not run up your wall, nor would many flowers do in such a position.

1610—**Treatment of outside Vine** (*B. T. T. Venwood*).—It is a good plan to cover the outside of an early Vine border with boards and litter underneath to ward off superfluous rains, which only chill the roots. Remove the boards and the bulk of the litter early in March if the weather is bright and fine. Do not remove all at once, but do it gradually, so as not to give a check to the Vines while in such active growth. Inarching Vines is better than grafting. The wood intended for the latter process is easily kept fresh by thrusting the base end in damp soil.

1611—**Treatment of Vine, etc.** (*Miss R.*).—You need not fear about the Vine, and as the turf is down again we would certainly do as you propose. If not successful, our former advice could be followed with another plant. A small wooden casing would be a protection, and help with the mulching. We cannot always reply at once, going to press so far in advance. If you ask your question respecting lawn and Roses in the usual way it will be answered so that it can appear in the succeeding issue but one. Writing personally to our contributors puts them to much trouble, and we are compelled to make it a rule not to give full addresses for that reason.

1612—**Early Peas** (*F. W.*).—We should certainly advise you not to sow early Peas in Yorkshire. Indeed, it is rarely practised in the south, as hard winds and frosts do the young plants much harm. We should in your case prefer to sow in February and March, also later for succession, and Broad Beans may be sown early. Potatoes must not be planted until April unless you can give the tops some protection from frost. It is well to inquire what is the average time for sowing and planting in your locality before you do things hastily. The trenching of the ground and dressing with manure is all right; but you may find it needful to give the surface a good forking before you sow a plant.

1613—**New lawn** (*S. A. King*).—The Strawberries can be removed at any time, but you must wait until early October if the Roses, Pæonies, and Lilies are to be used again As these are no doubt thriving, there will be no necessity to drain for the new lawn. Simply level the ground down as soon as you can move the plants, and sow seeds at once if the weather appears likely to continue open. If not, then sow in March next. In either case dress the surface fine, and take care that the whole is uniformly firm. Sow a good lawn mixture from any florist, using it at the rate of a peck to a little over 2,000 square feet. Your soil should need no dressing until the seed is well up and has been rolled and mowed a few times, when a sprinkle of wood-ashes or soot will do good—the former preferred.

1614—**Mushrooms** (*Ash*).—It does, unfortunately, happen that nothing is more common than for Mushrooms to suffer from attacks of the maggot you refer to during hot summer weather; hence in private gardens Mushroom-beds are seldom made up and spawned to come in during July and August owing to the exceeding dryness of the atmosphere. No doubt your bed has suffered from this cause generally; hence the smallness of the produce. Practically there is no remedy. You will do better if you make up beds now from properly prepared manure, either ridge-shaped outdoors or flat in a shed or cellar. Much depends, too, on the proper preparation of the manure, and then the fresh, well-spawned nature of the cakes purchased to fertilise the beds.

1615—**Diseased Melons** (*E. F. A.*).—The disease which has afflicted your Melons is what is known as canker. It is an outbreak in the stems rather than in the roots, although when it occurs both plants and roots soon suffer. The disease arises from various causes—over-watering, soil too crude or sour, too much manure, engendering a coarse, sappy growth. It is always advisable to use for Melons a sweet, well-decomposed, turfy loam, with which is mixed a small portion of thoroughly decayed hot-bed manure to make mounds, and have the plants well raised so that water does not touch the stems. Possibly your compost contains too much manure. If the loam be good very little suffices. Water gently about the mounds of soil rather than close to the stem.

1616—**Currant-bushes** (*E. T.*).—Black and Red Currants are so dissimilar in habit that they need very diverse treatment. Black Currants fruit on the previous year's shoots, and those, or the best of them, must always be preserved in pruning, merely removing old branches that are becoming bare. Red and White Currants fruit on spurs, and to make these all side shoots should be cut hard back to about two buds, and the leading shoots shortened back also two-thirds. Summer-pruning is good for these Currants, as it helps to strengthen the buds left on the spurs, and they become fruiting ones. As compost for your India-rubber-plants that are losing leaves, and no doubt badly need repotting, use good turfy loam two-thirds, the rest being peat soil, decayed leaf-mould, and sand. Use a pot a size larger, and quite clean. Also before repotting partially rub down the old ball of roots.

1617—**Cucumbers** (*Malton*).—It was wrong to plant four Cucumbers into a frame 6 feet by 5½ feet. Two plants would have been ample, and even these would have needed a lot of thinning, especially taking out non-fruitful shoots. You seem to have had rather too many fruits on the plants. Ten or a dozen set at a time on one plant would have been ample. We are sure that to take off the lights in the middle of the day and water was wrong. It would have been better to have kept them on during the day, giving a little shade if needful, and water when required about five o'clock, shutting down close, as that generates a moist air, which the plants like. So much depends, however, on the nature of the soil employed, the character of the water, etc., that either of these causes might have led to the failure of your plants. As to a book on Cucumber culture, we know of none specially, and old books are of little service now, as modern methods are dissimilar from old ones.

1618—**Hardy perennials for garden** (*B F.*).—We presume you mean plants to give a succession of flower, as you could not have any that would bloom outdoors all the year round from the same subject. You might plant Delphiniums, Phloxes, Anemone japonica, Michaelmas Daisies, Anthericums, Eryngiums, Dielytra spectabile, Doronicums, Centaureas, Geums, Potentillas, Pentstemons, Heleniums, several of the Megaseas, Monardia didyma, Œnotheras, and Columbines among others. These would afford a good succession, but varieties of these are too numerous to mention. Write to a good florist making a speciality of herbaceous and other perennials for a list. You will then find prices and heights, so that the borders could be fittingly arranged. It would not be difficult to grow a great variety with the aid of water, and a little thought as to which subject preferred the shady or sunny borders, seeing you have all four aspects enclosed by the wall. The Japanese Hop is a perennial. We do not quite understand your other queries.

1619—**Vine-manure** (*M. S.*).—There is no better Vine-manure than what is termed "Thompson's." It was originally prepared by Mr. W. Thompson, the late famous Grape grower, of Clovenford, Scotland, out of his long experience and close study of the needs of the Vine. You can obtain this from his successors, Messrs. W. Thompson and Sons, at Clovenford, Scotland, with full instructions as to its use. Shanking, however, is not always due to absence of certain needful foods in the Vine-borders. It as often comes from a border that is wet or over-dry, or where the soil has become pasty, and, thereby excluding air, is sour. As Grapes should now be ripening, constant liberal dressings of manure, to be washed in by water, especially if the border be already too moist, are apt to do more harm than good. Very likely you would do best did you in the winter remove the top soil. Then lift your Vine-roots carefully, remove the under soil, and replace it with good turfy loam and sweet garden soil, in which is mixed some crushed bones, wood-ashes, and a little of Thompson's manure, then relay the Vine-roots and cover them up with soil.

1620—**Roses and Pæonies.**—"Mrs. Lindsay" would be obliged by some names of late, robust flowering Roses? She has a pergola covered with Climbing Captain Christy, but when it has finished flowering in the middle of June she would like some red Roses to succeed it—bright red without any tinge of purple. Also she would be obliged by some names of hardy herbaceous Pæonies, bright rose, pinks and reds, to flower early and late.

*** *We presume you mean climbing Roses only. Gloire Margottin, Reine O'ga de Wurtenburg, Waltham Climbers*

1 and 3, and Mme. Isaac Perière are about the only good late bloomers of the colour you name. Six good red Pœonies are found in Denis Hellis, Gloire de Donai, Louis Van Houtte, Tricolor superba, and tenuifolia; and bright rose-pinks in Abel Carrière, Albiflora Celestial, Artemise, Auguste Van Geert, Hadranum, and L'Elegante.

1621—**Custard Apple.**—When shall I sow seeds of the Custard Apple, and treatment after?—R. S. L.

**** *Sow early in the year, giving a temperature of 60 degs. to 70 degs. They like a moist heat and a compost of rich, loamy soil, with a little heat.*

1622—**Cutting Asparagus for decoration.**—Does it do an Asparagus-bed any harm if the foliage is taken when grown for decoration?—A. C. BAKER.

**** *A few heads from each crown, and especially when full grown, can do no harm: but systematic cutting would.*

1623—**Calceolarias.**—"Miss B." would like to know what to do with some Calceolaria seeds which are only a fortnight old. She has not a greenhouse or pit, so keeps them in during winter.

**** *Without at least the accommodation of a cold-frame you can do nothing with your seedling Calceolarias. They must be kept free from frost.*

1624—**Sowing Canterbury Bells, etc.**—When must I sow Canterbury Bells, Anemone (Windflower), Perennial Sunflowers, Aconites?—MAGNUM BONUM.

**** *Anemones in April or May; Canterbury Bells, Aconites, and Perennial Sunflowers as soon as possible.*

1625—**Gathering Moss.**—Will you kindly inform me through your paper when is the best time to gather Moss, and how to keep it fresh for packing plants in the winter?—SPHAGNUM.

**** *Gather late in autumn, and store in a moist place if you wish to keep in a green state. Do not heap it too much.*

1626—**Wistaria.**—Can a Wistaria 4 feet or 5 feet high be moved with a chance of success, and would autumn or spring be the best time to transplant it?—A. C. B.

**** *Yes, if done carefully. Transplant in autumn when the leaf is off.*

1627—**Arum Lilies.**—I repotted mine about a fortnight ago, and do not purpose taking them into the greenhouse until the end of September. I want to know if heavy and continuous rains will do them any harm in their present condition, and would they be better sheltered a little?—UNCERTAIN.

**** *You need have no fear of rain harming these, but do not water at the same time. Stand the pots upon three small pieces of tile to assist drainage.*

1628—**Ivory-white Narcissus.**—Can you tell me the name of an ivory-white Narcissus blossoming rather late in the season? The colour, as far as I remember, is near the colour of this writing-paper, not so white as poeticus, the centre larger than poeticus, the same colour as the rest of the flower and slightly crinkled.—H. C. L.

**** *White Pearl answers your description very well. It is large, and of a delicate paper-white. It is difficult to name by description only from among so extensive a variety.*

1629—**Striking "Geranium"-cuttings.**—I intend striking this month some hundreds of "Geranium"-cuttings. Will you please advise me as to what temperature they would require during the winter months, so as to be nice plants by May? I have a greenhouse I can heat to 55 degs. Also small house unheated.—GERANIUM.

**** *Forty-five degrees would keep these safely through the winter. Pot off from their cutting pots during February, and gradually give more heat. Do not overwater during the winter months. The unheated house would do now, and again after the middle of March.*

1630—**Sowing annuals.**—Would you kindly tell me if it is too late to sow seeds of Eschscholtzia, Godetia, and Forget-me-not for spring flowering? Must I sow in pans in a cold house or out-of-doors?—MAGNUM BONUM.

**** *Eschscholtzias and Godetias should be sown early in the spring upon a warm outside border. You can sow Forget-me-not now in pans or boxes under glass, planting them out as soon as they can be handled, and transplanting to their flowering quarters early next spring.*

1631—**Vine borders.**—Which border would you recommend to plant Vines in to come on without forcing—inside or outside? We want as little space occupied as possible. The position would be south-west, rather low, marly subsoil.—T. H.

**** *Have both an outside and a small inside border, planting the Vines just inside of the holes or arches provided.*

1632—**Gathering seeds.**—I find there are a number of seed-pods on my Wallflowers and Stocks. What shall I do with them to use them for next season?—A. B. C.

**** *Gather when ripened and store in a cool and dry cupboard until the sowing season arrives; but it is scarcely worth the trouble, seeing that good and carefully selected seed is so cheap.*

1633—**Hydrangea cuttings.**—Can cuttings of Hydrangea be struck successfully in the autumn? Is the Hydrangea ever propagated by suckers?—H. C. S.

**** *Yes, early autumn is the best time for cuttings, or you can propagate from suckers, which can be encouraged by placing some soil in the centre of the bush.*

1634—**Dahlia seedlings.**—"Miss B." will be glad to know the best things to do with some Dahlia seedlings raised from seed in pots last April and May? What is the best situation for them? Will they flower this season?

**** *Your seedlings should have been planted out as soon as they could be handled. You sowed late. If sown in March and planted out in early June you would have had a good show of flower this season. Better keep the tubers in pots now, and plant these out early next May.*

1635—**Improving heavy, moist clay soil.**—I should be glad if you would kindly tell me the best and cheapest method of improving a heavy moist clay soil, and rendering it suitable for growing such plants as Carnations, Roses, and hardy perennials generally? I have a large quantity of peat-Moss-manure, which has been lying in a heap unprotected for six months. Would it be of any use as tending to lighten the soil? What is the best kind of manure to use for Carnations? Would leaves collected this autumn and allowed to remain in a heap till spring be any use?—F. H.

**** *Your manure would certainly improve a clayey soil, but a lighter and less absorbent manure from horses bedded upon straw and litter would be better. Soot when used in moderation is good upon a very stiff soil. If you use decayed leaves and refuse for Carnations you must take care it does not contain insect pests. Before applying turn over two or three times, and mix some fresh lime among the heap. It would be a good plan to burn some of your soil and then apply with the leaves, etc.*

1636—**Stag's-horn Fern.**—I have a Stag's-horn Fern which has been for several years in the same pot. When may I repot it, and with what kind of compost?—E. T.

**** *While healthy we would not repot this pretty Fern. It needs as little fresh compost as any, really feeding upon the peculiar wafer-shaped sterile fronds. Early spring would be best, and a compost of turfy loam, peat, and a little charcoal can be used. Do not break these up too finely.*

1637—**Fruit-trees on wall.**—Having to make a new garden, I am anxious to know the lowest height of wall on which fruit-trees can be successfully grown, and also what depth the wall ought to be below the ground.—A. C. B.

**** *Four feet if trained horizontally, but 6 feet would be much better. You must consult a local builder as regards depth of foundation; we have no knowledge of your soil.*

1638—**Unsatisfactory Tomato.**—I herewith send you a sample of a Tomato taken out of my greenhouse. About twenty of them have gone, blemished like the enclosed. They are grown in tubs, have been well manured, and have had every attention. Could you kindly explain the reason of this blemish?—R. CUTTING.

**** *Your Tomatoes are suffering from disease, and we fear will find even a greater percentage fail. There seems no certain remedy, nor is the primary cause of this disease known.*

1639—**Vaporising vinery.**—Will fumigating with Tobacco-paper damage ripe Grapes? Thrips have just appeared on about a dozen leaves only, which I have picked off; but in case more show would it be right to fumigate as proposed?—R. B. H.

**** *No, it would injure the berries. See reply in* GARDENING *last week, p. 391, middle column.*

1640—**Heliotrope.**—I have bought two very nice young plants, but now they are in bloom there is scarcely any perceptible perfume. The foliage and blossom is beautiful, but what I like most is lacking. Will you kindly tell me how this is, and at the same time please give the name of the kinds that do yield the best perfume?—ALPHA.

**** *We cannot say why yours have so little perfume; but Jeanne d'Armour, Swanley Giant, The Queen, and Freefrau von Konig are all exceptionally sweet scented.*

1641—**Treatment of Ferns.**—Will Ferns keep better in a frame in which I can put a small lamp to keep out frost, or in a cold greenhouse which is very damp in winter? Would a paraffin-stove be bad for the Ferns?—MAGNUM BONUM.

**** *Keep them in the greenhouse, but be careful about root watering. We do not like paraffin-stoves for Ferns, but as your house is naturally very damp they would not parch up the atmosphere to the same injurious extent as usual. You do not state what Ferns.*

1642—**Propagating Dahlias and Marguerites.**—Will you kindly tell me how to propagate the above two plants, and how shall I preserve them through winter without greenhouse? Can I save them by any means in a warm kitchen?—A. B. C.

**** *Marguerites are increased from cuttings of young growth about 4 inches in length. These are trimmed off at the base and inserted in sandy soil at any time between March and October. The first date is most suitable, the cuttings making good flowering plants the same season. You would scarcely succeed in keeping these through the winter without greenhouse protection. Dahlias are increased from cuttings of young growth in heat during March and April, or by dividing the tuberous roots when planting in May. These can be kept in any fairly dry and frost-proof shed or room.*

1643—**Climbers for verandah.**—Would you kindly inform me through the medium of your paper the most suitable fairly quick-growing climbers for verandah-posts and lattice-work 25 feet high. The aspect is north-east and exposed to the sea.—DEVON.

**** *Cotoneaster microphylla, Escallonia macrantha, evergreen and variegated Honeysuckle, Passiflora Constance Elliott, Wistaria chinensis, and Virginian Creeper are all good, the three first being evergreen and the last deciduous. You might also use Clematises, Jessamines, and such vigorous Roses as Rêve d'Or, Gloire de Dijon, Madame Bérard, and Crimson Rambler.*

1644—**Growing flowers in bowls.**—Will you kindly give me some information about some foreign Lilies which I believe can be grown easily in bowls to flower in early spring? Are they Japanese Lilies? Should they be grown in a greenhouse? And will you tell me what to grow them in—stones, or Moss, or what soil? I regret so vague a question.—E. M. A.

**** *You will find an answer to this in* GARDENING, *September 4, p. 391, third column.*

1645—**Liquid-manure.**—Would the liquid from a tank into which all the house drains run be good to use on Roses, Lilies, Carnations, Gladioli, and hardy herbaceous plants in a flower-border generally? Also, at what strength should it be used, and how often applied? Would stable-manure from a stable where peat-Moss-litter is used be as good or better than farmyard-manure for mulching and top-dressing the above-named subjects? Also, would it be best put on in spring or autumn?—ABBEY.

**** *So much depends upon the present strength as to further dilution. We cannot judge this, and can only repeat that all such are better applied liberally in a weak condition than when a little in its original state is given. Nor do we know if any injurious matter has access to the tank. Generally speaking, such drainage is good for the subjects you name. We like peat-Moss-litter manure, but not so well as good farmyard dung. Mulch in spring.*

1646—**Flowers for autumn.**—I shall be obliged for advice as to which I should grow for next year to enable me to have flowers in the autumn. I have a bank about 30 feet long and 6 feet wide. It is not a steep bank. Up to the middle of July it is very gay and beautiful with Poppies, Cornflowers, Geums, Canterbury Bells, etc.; but now these are all over, and the bank is bare. The soil is stiff clay. I have mixed a quantity of road sand and manure with it, but it is still hard and cakes.—E. P.

**** *If you put some light stable-manure with the soil, and also use a little soot, you can easily grow any of the many beautiful Michaelmas Daisies or Cactus and Pompone Dahlias. They give a charming autumnal display.*

1647—**The White Lily.**—Last year I planted several bulbs of Lilium candidum in fairly good soil, mixed with manure and peat, and covered the bulbs to depth of 2 inches. The bulbs have now worked their way to the top, and are pushing out tufts of leaves in an apparently healthy way. Owing to the position of the bed I cannot well put more soil round the roots. Should I take them up or leave them as they are?—BRUGES.

**** *You need not trouble about the Liliums; the variety is quite hardy, and will probably do better if left alone now.*

1648—**Climbers for arch.**—Having put up a galvanised arch, 7 feet by 1 foot, I want something to grow over it. On one side I fancy a Rose—say Gloire de Dijon or Crimson Rambler; on the other side I should like an evergreen—say a Honeysuckle. The garden is open to the south and east; the soil is fairly deep. Had I better paint the arch? Can you tell me the best Rose to have to climb up and over the arch? Can you tell me of an evergreen honeysuckle, or anything else sweet-smelling for the other side? Also can you tell me two good Roses, large, fragrant, and free blooming, to put in the open ground, facing south? I fancy S. de la Malmaison and A. K. Williams, but am not particular to colour.—ST. B.

**** *You had better paint the arch. Your selection seems somewhat strange, as you would have an evergreen on one side and a deciduous plant upon the other. We would either use Crimson Rambler or William Allen Richardson Rose, and place Clematis Jackmani or the Scarlet Trumpet Honeysuckle upon the other. Either would look well. If you wish for evergreens, why not use the evergreen Honeysuckle entirely? We should not choose either of the two Roses you name for perfume. Plant G. Nabonnand and Mrs. W. J. Grant.*

1649—**Yellow Carnation from Ireland.**—Will you be so good as to give your opinion in GARDENING on the Carnation I send? It is a seedling raised some years ago by a friend who gave us a few cuttings. We have grown it every year since. It never fails in strong, healthy growth and abundant bloom, never bursts. We have now a large stock of it, from which thousands of blooms have been sent to market since the second week in July. They are still covered with bloom, damaged, as you will see, by such incessant rain.—K. USSHER, *Camphire, Cappoquin, Co. Waterford.*

**** *A very good variety, clear in colour, not bursting, and strong in growth.*

NAMES OF PLANTS AND FRUITS

**** *Several parcels of plants for name have been received with no letter inside, or anything to denote from whence they came, and several correspondents have sent parcels apart from letter. Unless the rules are adhered to we cannot notice communications.*

Names of plants.—*S. A. Hogg.*—Apios americana.——*S. M.*—Althæa frutex.——*Meriden.*—Tecoma jasminoides.——*R. Y. S.*—You must please send a larger specimen.——*Mrs. Newman.*—French Honeysuckle (Hedysarum coronarium).——*Mrs. Benthall.*—Garland-flower (Hedychium Gardnerianum).——*E. V. A.*—Apple Duchess of Oldenburgh.——*Fairlie, Staffs.*—The Fern is Asplenium fontanum.——*W. L. B.*—Your trailing greenhouse Moss is a Lycopodium (Selaginella), and the spotted leaf one of the Dieffenbachias. Please number in future.——*R. M.*—2, Pteris cretica; 3, Spiderwort (Tradescantia virginica); 4, Polystichum angulare; 6, Asplenium bulbiferum; 8, Pteris serrulata. Please send better specimens of the others.——*A Gardener.*—1, Silphium terebinthinaceum; 2, Rudbeckia laciniata; 3, Helianthus decapetalus; 4, H. multiflorus (single); 6, Helenium grandiceps; 7, Helianthus multiflorus (double).——*Mrs. P. W.*—The Fuchsia flowers were smashed. We cannot undertake to name such florist's varieties. Far better send them to someone who has a large collection to compare them with.——*L. L.*—Your conifer is Cupressus macrocarpa. It is a well-known variety, growing, as you say, to a great height. It is a native of California, and was introduced about fifty years ago. Young tops put in thickly now into pots filled with sandy soil under a bell-glass, and stood in a little bottom-heat, will root during the winter.——*T. B. B.*—1, Adiantum hispidulum; 2, Pteris tremula; 3, Nephrodium molle; 4, Blechnum occidentale; 5, Pteris aquilina (common Bracken). The specimen of coloured foliage plant with leaves green and purple is Strobilanthes Dyerianus.——*F. Grimbo.*—Flowers quite faded.——*Lady E.*—The flower had, unfortunately, faded a great deal, but is apparently the common Erodium (E. cicutarium).——*J. Wilson.*—Would you mind sending 1, 5, and 2 again, as they got crushed and were spoilt? 3, Gazania splendens; 4, Solidago ambigua (Golden Rod).——*G. G.*—1, Iris fœtidissima; 2, Antholyza æthiopica ringens.——*Altyferin.*—Apparently King of the Pippins, but really too unripe to tell.——*E. Atkinson.*—Kindly send when ripe. It is impossible to tell with any degree of certainty the name of a fruit when unripe.——*Dagmar.*—Flower was, unfortunately, quite withered; please send another specimen more carefully packed.——*W. Lewis.*—1, Variety of Begonia Rex; 2, Apparently B. insignis, but please send flower; 3, B. metallica; 4, Probably B. Louis Chrétien, but not easy to tell from a small leaf; 5, Pteris serrulata; 6, P. serrulata cristata.

Names of fruits.—*Vanwood.*—Three of the Grapes are correctly named. The large white one described as Foster's Seedling is evidently Golden Queen. It is very annoying to have the wrong canes sent, but the only thing you can do really is to ask that proper kind may be sent. That is the usual course.

GARDEN PESTS.

Wasp destroying.—If "An Inquirer" will write to Mr. Dixon, of East Grinstead, Sussex, for a bottle of his "wasp destroyer," and will use it according to the directions on the bottle, I think he will be quite satisfied with the result. I was induced to use it about a fortnight ago, and I was astonished at the rapid and effectual action of the destroyer, which, moreover, is cheap and very easily applied. A sixpenny bottle contains sufficient powder for three nests. If "An Inquirer" should use this remedy will he kindly report results. I can only say that I was astounded.—P., *East Grinstead.*

Green caterpillar on Apple-tree.—I am sending a green caterpillar one of my men found to-day on a shoot of an Apple-tree, and I should like to know very much what it is. I never saw anything like the one I send you.—E. L.

*** The insect you sent is the caterpillar of the "Eyed-hawk moth" (Smerinthus ocellatus). I am not aware that this insect ever appears in sufficient numbers to be really injurious to Apple-trees, but the caterpillars are of such a size that each would require a large amount of food, and if a considerable number were on a tree they would do much damage. The only remedy I can suggest is picking them off by hand.—G. S. S.

1474—**Destroying woodlice.**—I have found the following plan a good one for destroying these: Get a few Potatoes and cut in each a hole big enough to hold a wine bottle cork. Arrange these on the bed in such a way that the opening is lightly blocked up with a little earth. Each morning examine them, and empty the woodlice into a basin of hot water.—ACHILLES.

*** *Other Pest replies next week.*

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Bottling Mushrooms (*J. B.*).—The Mushrooms must be as fresh as possible. The round white only are fit for bottling. Cut off the stems, look carefully over them, and be sure they are free from insects, but they must not be washed or wiped with a damp cloth. Put them into quite dry glass bottles with wide mouths, shaking them well down. Weigh a pound of common salt, then take a teaspoonful of common soda, crush this to a fine powder with the salt, mixing the salt and soda well together. Put a tablespoonful, heaped, into each bottle of Mushrooms. Cover each bottle with brown paper for two days, airtight, when they will have shrunk to about half their size; you can then fill up the bottles quite full from one of the shrunk bottles, taking care to let the liquid cover the Mushrooms. Cover with wet bladder. They will need to be just rinsed in cold water before cooking in the usual way. Mushrooms can be pickled, too, by boiling the vinegar ten minutes with a few Cloves, allspice, Peppercorns, Chilies, and Ginger, pouring the vinegar boiling hot over the Mushrooms. Cover with bladder, filling up each bottle with Mushrooms after they have shrunk.—B.

Tomato preserve.—Can you tell me how to make Tomato preserve?—MRS. RIVOLTA.

*** Take as many Tomatoes as you wish to preserve. Place on the stove a saucepan of boiling water, stick a fork in each Tomato, dip it for two seconds in the boiling water; then as you scald each one put them into a basin of cold water, skin them, and cut away the stem. Slice them into a scale, and for each pound of Tomatoes allow the thin rind and juice of a Lemon, six Cloves, half-a-dozen allspice, and ¾ lb. of cane sugar. Tie up the Cloves and allspice in a piece of muslin, as these are removed before pouring the preserve into pots. Put the sliced Tomatoes into a preserving-pan with the sugar and spices, and bring them quickly to the boil, stirring well to keep from burning. As soon as a little jellies quickly when dropped on a cold plate pour at once into hot glass jars or gallipots, paste down while hot, and store in a cool, dry place.—B.

Siberian Crab preserve.—Take 9 lb. of sugar and put it in a preserving-pan with a pint of water. Boil to a thick syrup, stirring constantly to prevent burning. Now add a dozen pounds of fruit, and stew until just tender. Done in this way they are most delicious.

Beans (*R. S.*).—You do not mention what garden Bean you are using. I know of but one—the field Bean—that turns the water or broth a dirty colour. Possibly this is the one you are using.—B.

LAW.

Fowl-house erected near boundary fence.—A fence 6 feet high (erected at my expense) separates my property from the adjoining property, and a detached house stands on each of the properties. The house on the adjoining ground is let to a weekly tenant, and there is often a change of tenants. All the tenants have kept fowls, and the fowl-house is always put up against my fence, the fence on their side being so bad as to be really no fence. On one occasion I stopped this, but it is done while I am from home. Can I prevent this, and what is the best thing for me to do?—A CONSTANT READER.

*** If the fowl-house is erected on your land you may remove it forcibly or bring an action of trespass, but if it is not on your land you have no remedy. If the poultry come upon your land their owner is liable in damages for their trespass, and your remedy will be by action in the County Court.—K. C. T.

Removal of flowers from garden.—I am about to quit my house; can I remove the flowers, such as "Geraniums," Calceolarias, standard Roses, etc., which I have, at considerable expense, planted in the garden? Or must I leave these for the incoming tenant? The standard Roses were planted this year.—A FREQUENT READER.

*** You can remove none of the flowers you have planted in the garden, for as soon as they were planted they became the property of the landlord. Landlords usually permit a tenant to remove flowers planted during the last year of tenancy, although they are not obliged to give permission.—K. C. T.

AQUARIA.

Starting an aquarium (*F. B.*).—You appear to have prepared your aquarium correctly for the reception of the fish, but should postpone the introduction of them for at least a fortnight, to allow time for the plants to start into growth, and give off oxygen; when the plants are fairly established the aquarium will support much more animal life than when they are only just beginning to grow. The green growth upon the glass and stalks of the plants which will appear in a short time will be another indication of the water becoming fit for the reception of the fish. This green confervoid growth should not, however, be allowed to become too dense upon the sides of the bank, or the pleasure of viewing the movements of the inmates of the aquarium will be lost in a degree. Too much light encourages the growth of the confervæ; you must, therefore, be careful to shade your aquarium from an undue proportion of sunshine. The average temperature of the water should be about 50 degs., and not vary more than 10 degs. either way, as the higher the temperature the more rapidly it becomes impure, and the fewer the animals it will be able to maintain in health. A few water-snails in the aquarium are useful in keeping in check the growth of confervæ and in clearing up the decayed vegetable matter; these, however, have to be selected with discretion, as some of the species are given to devouring the growing aquatic plants. Two useful species in the aquarium are Planorbis corneus and P. carinatus, being handsome, hardy, and not given to destroying useful vegetation. You need not trouble about the water becoming a greenish colour, it will soon become clear again. Above all things do not overstock. If your fish are quite small you may introduce them all to your aquarium.

BIRDS.

Birds in the garden.—I have for many years been a reader of your paper, and have profited from the matter therein. I have also been amused at times by the variously expressed opinions as to the usefulness or reverse of birds in gardens. If you will allow me I will relate my experience, leaving for others to decide whether as gardeners they prefer to be with or without the feathered friend or fiend. To begin: Of my Strawberries, a moderate crop, I had none—the birds had all. Black Currants, a good crop on two dozen bushes. I was allowed to gather enough for three tarts when half ripe. Gooseberries they carried away when three parts grown. Red Currants and Raspberries I saw none of. But there was worse to follow. I had planted two rows of British Queen Pea, 25 yards long each, so that when my children came home we might have plenty of Peas. I have hardly gathered a full pod. The Peas are gone, and this morning I find the half ripe Tomatoes scooped out. When those are finished I have no doubt they will turn their attention to the Apples. They have already sampled the Keswick Codlin and Lord Suffield; Cox's Orange Pippin is a little too hard yet. However, my patience is quite exhausted, and I shall take very effective measures to reduce their numbers this winter, and stand my chance of grubs, etc., destroying my crops; at any rate, I cannot be worse off. There are reasons which prevented me netting my fruit.—W. G. CAISTOR, *Uplyme, Devon.*

POULTRY AND RABBITS.

The moulting season (*P.*).—This, I need scarcely say, is the term applied to the annual change of feathers amongst fowls and birds in general. It usually begins about the middle of August, but may be early or late, according to peculiarities of the season, or to the treatment of the Fowls by their owner. For example, hens which are allowed to sit in the end of July, or even earlier, will often change their feathers whilst rearing their birds, provided they are kept warm throughout. It would seem, therefore, that excessive heat favours the early moult, and those who are anxious to get the moulting season over as soon as possible should take a hint from this. I am not partial, however, to any special treatment for procuring an early moult, and this for two reasons. First, it is absolutely impossible to say which hens will moult early or late, so all our efforts may be lost. Secondly, whilst moulting is going on, and for a long time after, no eggs are laid, as a rule. Autumn eggs always sell well, and it seems going the wrong way to work to check their production, as we assuredly do by hastening the moult. It is all very well to say that hens which moult early are sure to lay early; they ought to do so, but I find they cannot be always depended upon, and I would rather place my dependence upon pullets. When the moult really begins the hens should be shut in a warm house and kept beyond the reach of wet or cold. Feed on warm food (meals mixed with warm water), and give two meals a day. Green food—a Grass turf—should be thrown down for the hens to peck at, and some old iron may be put in the drinking-water. The hens should be watched in order to check any tendency to feather-eating, as the habit is often taken up when hens are showing a lot of quill feathers just outside the skin.—DOULTING.

Death of Fowls (*Highlander*).—I had hoped to hear again from you respecting the symptoms displayed by your Fowls. I cannot, therefore, add to what I stated in my note. I should certainly conclude that the excessive heat has caused a kind of sunstroke, and the hard breasts are tolerably good evidence that the livers are wrong—another effect of the heat. I do not suppose that we shall have further cause for complaint on that score this year, but Fowl-keepers may rest assured that too much sunshine can do much harm, and is a fertile source of loss amongst domestic poultry.

GREENHOUSES from £3 8s. — Vineries, Conservatories, well-made Frames, painted or glazed, from 21s. Illustrated Price Lists free. Maker to H.M. the Queen and H.R.H. the Prince of Wales.—A. POTTER, Manufacturer, London Works, Reading. (Name paper.)

RUGS! RUGS!!—Good, all Wool, 8 ft. long, 6 ft. wide, and weigh over four pounds; Government grey; only been used a little; much better than common new. I will send one post free for 3s., from—H. J. GASSON, Government Contractor, Rye.

FLOWER POTS.—12 8-in., 20 6-in., 50 5-in., 50 4-in., 50 3-in., packed in cases and sent to rail for 7s. 6d. Cash.—H. F. GODDARD, Pottery, Dennett-road, Peckham.

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GARDEN AND PLANT PHOTOGRAPHS, 1897.

THE EDITOR of THE GARDEN and GARDENING ILLUSTRATED announces Photographic Competition for the season of 1897.

LIST OF PRIZES.

Class 1.—COUNTRY HOUSES AND FLOWER GARDENS.—A prize of TEN GUINEAS, and a SECOND PRIZE OF FIVE GUINEAS, will be given for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory and cottage gardens may be included.

Class 2.—FLOWERING PLANTS.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, to the sender of the best series of not less than twelve photographs of flowering plants grown in the open air or under glass. These may include flowering shrubs and native plants, cottage and window plants.

Class 3.—BORDERS, GROUPS OF HARDY PLANTS, FERNERIES, ROCK AND WATER GARDENS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF THREE GUINEAS for not less than twelve photographs of rock gardens, hardy flower arrangements in borders, groups or beds, Roses and climbers on walls or balustrades, etc., water plants and water-side gardens, and picturesque outdoor ferneries.

Class 4.—LAWNS, OLD ORCHARDS, WILD GARDENS, GRASS WALKS, AND PICTURESQUE DRIVES.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS for the best ten most varied and distinct views of lawns and lawn trees; evergreens as shelters to bowling-greens, flower gardens, and arbours, picturesque woodland, park, or pleasure ground drives, and Grass walks.

Class 5.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF £2 10s. for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—BEST VEGETABLES.—A prize of FIVE GUINEAS and a SECOND PRIZE OF TWO GUINEAS for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—CUT FLOWERS, TABLE DECORATIONS, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of arrangements of flowers in glasses and vases, including table decorations and any ways of using cut flowers.

Class 8.—VASES, FOUNTAINS, GARDEN HOUSES, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of plants in vases, tubs or baskets in the open flower garden, fountains, fountain-basins, balcony, or any other picturesque structure outside the house, bridges, boathouses, etc.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition wil be kept open until the last day in October, 1897.

WHAT TO AVOID.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

FIRST.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

SECOND.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

THIRD.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

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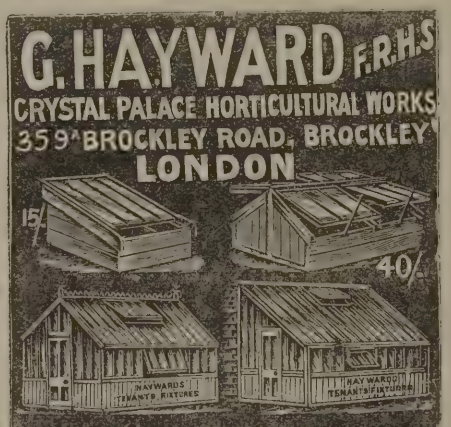

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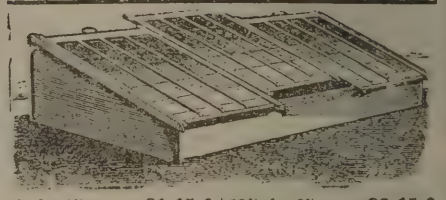

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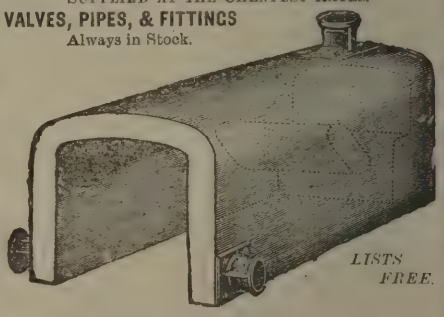

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CHRYSANTHEMUMS.

CHRYSANTHEMUMS.—HINTS TO AMATEURS.

For the production of large blooms all buds should by this time be retained, and the earlier-formed ones will be swelling freely. The time available between now and the blossoming should find the grower trying in every possible way to assist them by means of stimulants, and by taking away superfluous side growths, so that the whole energy of the plant may go to the developing of flowers.

The weather lately has been favourable to plants which have not previously been overdone in the matter of manures; that is, growth which had a tendency to look ripe, with foliage light green in colour, has, through the recent showers, made considerable progress, and still with leaves of a satisfactory character as well as improved colour. Over-fed and unripe growth of summer responds to dull, showery weather in a far different way. The leaves and tips of the shoots become sappy and soft, barely holding up their own weight. The exceptionally rough winds of late have also tended to mature the growth perfectly, although one has to put up with the loss of a few promising stems.

Very little water has been needed at the roots for some days, it being our practice to allow the earth to get dry between the showers; that is, we prefer to find the soil quite dry-looking in dull weather, and only water if a burst of sun or very drying winds cause the leaves to flag. The only way, then, to feed the plants is by top-dressing; this may be done about once a week. Use some approved fertiliser. There are plenty advertised in Gardening, with well-known names. I use a tablespoonful to each pot of 9-inch diameter; but for the sake of safety mix a quantity of finely-sifted earth with the same weight of "artificial" before putting it on the surface. There is nothing like caution in the use of highly-concentrated manures on plants. It is not safe, for example, to use guano as a top-dressing. This mixes well with water, and it is, therefore, better to give it as a liquid. Damage to the roots would also follow the use of nitrate of soda or sulphate of ammonia in the same way. These very powerful salts should be put into water. They are even then highly dangerous if not very carefully handled. Both are quick in action, and tend to hasten the swelling buds as well as add to the depth of colouring in the blossoms. A ½ oz. to 1 gallon of water is safe, and if either be given in such a weak state three or four times between now and November the effect will be beneficial.

Small items.

Side growths, as I have noted, should be removed, and the shoots tied in such a way that the swelling flower-buds may not be blown against sticks or in other respects damaged. So much labour has been spent to obtain a comparatively few blooms that one is annoyed to find the season wasted through such damage caused by neglect of small things. Earwigs have a habit of eating the centres out of the swelling buds. Every means should be taken to catch this pest. This is not the only enemy. Green-fly will sometimes mass together just underneath the flower-buds. A dusting of Tobacco will get rid of a danger which rapidly spreads if left alone. Mildew, again, is sure to appear on the leaves of some sorts. Those affected may be dusted with sulphur.

Housing the plants.

The time generally advised for placing Chrysanthemums under glass is the last week of September. Some localities and positions (notably low-lying ones) are more liable to early frosts than others; but I fancy most persons would be safe in leaving the plants in the open until the above-named time. The flower-buds make more satisfactory progress in the open than they do under glass if safe from frost, therefore they should be kept out as long as possible. Dews and showers are so very essential to their swelling. But if any sort should be early, and its buds have advanced so as to show colour, then put such specimens inside at once. Rules to observe under glass are to bring the plants to such altered conditions gradually. This may be done by allowing all the air possible to enter the structure, and by being most careful for some days in the watering. If the roots be kept over-moist there is great risk of the plants being thrown entirely out of health, for I have noted a standstill look about them when first housed. The roots as well as the leaves seem to miss the open air, and until they recover themselves I advise keeping the roots on the side of dryness. To prevent loss through evaporation I have even syringed water among the leaves in case of sunny weather. In a very few days after being under glass little white roots will be found rambling over the surface of the soil. This is a sign that all is well, and then watering may go on as usual. If room is limited under glass, and the plants must be stood pretty close together, it is advisable to strip off some of the lower leaves at housing time. These will soon decay if it be not done, and must then be removed.

Timely attention to shade will often save the early florets from decay. The whole house may not require guarding from the sun's rays, but one can fix a sheet of paper or the like immediately above those blooms that are before the bulk. Later in the season the sun will have lost power, and later flowers really do not seem to mind sunshine so much as do early ones. I would fumigate the greenhouse when all the plants are inside. Aphides may not be seen, perhaps, but they do appear, and spread rapidly if this precaution be not taken. Especially is this the case later on, when fire-heat becomes necessary. Then the opening blooms make the operation of fumigating somewhat risky.

H. S.

Early Chrysanthemum Mme. Marie Masse.—A large bunch of this variety was not the least striking in a collection of hardy flowers at a recent show. It bears blooms about 3 inches across of a deep rose colour—not a washed-out shade, as is too frequently the case with early Chrysanthemums. It has a bushy habit of growth, and makes a fine specimen in the open air from spring-struck plants during a season. —H.

CHRYSANTHEMUMS IN VASES.

The value of the Chrysanthemum for decoration is each year becoming apparent. There are individuals who treat with scorn such illustrations as are to be met with at exhibitions in which Chrysanthemums alone are allowed in the arrangement of épergnes, etc. The manner in which these are filled at many of the exhibitions some are inclined to unjustly condemn, giving as a reason the large size of the épergnes used, together with the amount of table space they each occupy. There may be a little cause for complaint regarding the latter point, but such critics should remember that, when such receptacles are used, the stands would be so arranged that the proper amount of table space only should be utilised. Fortunately, the practice of exhibiting Chrysanthemums in vases is now receiving a larger share of attention, the schedules of the foremost societies including classes in which exhibits of this kind are catered for. In this respect the utility of the Chrysanthemum is likely to be better illustrated, and the best interests of the different societies consequently enhanced. Very handsome indeed have been the vases shown at the exhibitions of the National Chrysanthemum Society for some time past, a charming association of suitable foliage with the blossoms used in many instances building up an ideal picture.

In arranging a vase, no matter whether it be large or small, or there be more than one colour used, it is of the highest importance, if good results are to follow, that a proper blending of the colours be carried out. Many lovely flowers when arranged without regard to the order of colour, instead of giving pleasure to those whose privilege it is to look upon them, invariably do just the opposite. Therefore, to achieve success it is important that, in placing Chrysanthemums in vases, a wise choice, in which the colours used would pleasingly associate, should be the first consideration.

One of the richest and at the same time most brilliant harmonies of colour is yellow and orange in equal proportion, with a few pieces of bright crimson or scarlet interspersed here and there. The few blossoms of the brilliant colours should give the necessary finish to a combination of this kind. These three colours are seen in the ever-popular orange Source d'Or, the rich yellow of Sunflower, and the bright crimson is present in the Japanese-like pompon Vesuvé. Of course there are many other varieties which would give the same colours as represented by the foregoing. The association with flowers of the colours mentioned above, of foliage with the glorious autumnal tints, a few pieces of long feathery grass and selected fronds of light green-coloured Asparagus plumosus to overhang the sides, should meet the needs of those who have to arrange large vases for sideboards and other positions. Flowers of lilac or mauve should be used with those of a purple or amaranth colour, while those of the purest white are seen to advantage with either of these latter colours. Bright green foliage, as well as

that in which a silvery or a variegation of this colour is obtainable, is generally highly valued for these hues. White flowers are seen to advantage when a striking contrast can be brought about. Such foliage as that of the beautiful Prunus Pissardi, Mahonia aquifolia, deeply tanned pieces of some of the newer forms of the Oak, and fronds of different types of the Ampelopsis, should give an idea of suitable subjects to use. White and pale yellow is a chaste combination for use during the daytime, any light green foliage associating prettily with it. Light yellow and bright pink are very pleasing though rarely seen. With many of these colours some of the rich scarlet berries, which are always obtainable during the Chrysanthemum season, will often lend additional beauty and attractiveness.

Chrysanthemums are admirably suited for small vases, tubes, etc., when two or three blossoms are placed in them, and a few buds and foliage fixed in an easy and graceful manner. A spray or two of some of the decorative sorts, treated in like manner, are also very pretty, the small lateral growths, each carrying a bud, some just showing colour, giving a finish which improves them very much. Large exhibition flowers are very pretty when placed in small glass tubes with a few leaves still adhering to them. Dotted about on the dinner-table or placed on the mantelpiece, and the numberless little contrivances which are now so often used, these large flowers are greatly admired. The only disadvantage in retaining the leaves on the large blossoms is their tendency to become quickly exhausted. Because of this failing it is often better to strip the stem of its foliage, and replace this with many of the beautifully toned kinds of leaves already alluded to. By adopting this plan the flowers will keep comparatively fresh for a long time. D.

HERBACEOUS BORDERS FOR AUTUMN EFFECT.

In reply to a query from "F. G." on above subject, I will give full information, as I hope it will be of use to many amateurs who may have beds such as "F. G." has, or who wish to make them. "F. G." requires three varied borders, one of which would face east, with full south sun, and is about 3 feet wide, with a wall at the back of it. It would be easy to make such a border gay and interesting, and it could be done in many ways, but I can think of none better than by putting a trellis-wire against the wall, and then planting, at the distance of about a yard apart, Clematis Jackmani, Clematis Alexandra, Clematis Jackmani alba, Clematis magnifica, Clematis rubro-violacea, Clematis tunbridgensis, and Clematis velutina purpurea. These are all of the Jackmani type, flower very freely from July to October, and are the best and hardiest I have seen. All the treatment they require is to prune them back in November to about 9 inches of the ground, and to plant them (about the same time) in soil which has been enriched with manure and some old mortar-rubbish. They will make the wall lovely over the heads of the other flowers I should plant in the borders. Having planted these close under the wire, I should then plant Tritomas and Japanese Anemones in clumps alternately, at about 18 inches apart, plant from plant, down the length of the bed, and at about 14 inches from the wall. In front of them, at the edge of the bed, I should plant a mass of Gladioli Brenchleyensis, putting the bulbs about 3 inches deep and 5 inches apart. "F. G." especially wants a scarlet effect, and I know that this effect of scarlet, white, and violet is exceedingly effective and pretty. A little narrow border of Archibald Grant Violas at the edge of the bed will finish it off, and by cutting them back after they have flowered in spring they will be quite gay again in autumn, and look well beneath and in front of the Gladioli. This bed would require manure and leaf-mould to be added to it when dug over some weeks before planting, and a good mulching of the same material every autumn, over which a little soil ought to be sprinkled early in spring to hide the manure.

If a spring effect is desired the whole bed, where the other plants did not occupy the ground, could be planted with Gesneriana Tulips and violet Crocuses; the latter would give a lovely display every March, and the former would make the bed a mass of scarlet in May. These bulbs would have to be laid on the soil after the other things were planted, the Tulips first, 5 inches apart, and the Crocuses netted in amongst them at 2 inches apart. Having laid them on, they would have to be planted in, about 3 inches deep, with a small trowel. The Gladioli bulbs would have to be laid on at the same time and in the same way. This bed would be quite hardy in the southern counties, and, with mulching, in the midland ones also, but in northern counties the Gladioli would require to be taken up in the winter and housed safely from frost. The other plants named are all perfectly hardy.

Another bed "F. G." possesses is 7 feet wide and faces north, and he describes his soil as "moderate." It ought to be prepared by digging in manure and leaf-mould (the latter I particularly value, as it encourages young plants to root freely, and thus promotes a quick growth), and after this has been done October or November would be a good time to plant it. I should plant a double row of Hollyhocks, putting each plant about 25 inches apart in the length of the row, and the two rows about the same distance apart, putting the plants alternately. The back row I should plant about 5 inches from the back edge of the bed, and thus 2½ feet of the border would be occupied with Hollyhock. I should then leave a space of about 15 inches unoccupied in front of the Hollyhock. Then I should occupy about 15 inches thus down the whole length of the bed. Put first a clump of nine Lilium candidum bulbs, 5 inches apart, which would form a clump 15 inches square; then leave 5 inches, and then plant the next 15 inches with Galtonia candicans (Hyacinthus candicans) in the same way; after that the candidum Lilies again, and so on until the end of the row. These bulbs I should plant about 3 inches deep. The candicum Lilies will be lovely in July, and the Galtonias flower in August. I do not think sufficient use is made of these latter flowers. These tall, stately white spikes of flower, somewhat resembling a giant Hyacinth, are very effective and graceful, and my experience is that they are very hardy.

The remaining 2 feet I should fill with a row of dwarf late-flowering Phloxes at a distance of 18 inches apart. I should go to some nursery and select these when in flower, and purchase ground clumps; or I should write to some good firm of nurserymen and ask them to send me the number I required in their best dwarf kinds, and I should especially mention I wanted clumps, or small, newly-rooted cuttings would be sent in pots, and these would be several years before they made good-sized plants. In front of the Phloxes I should put an edge of the old-fashioned white garden Pinks. They make a good border to a bed of this kind, as their grey foliage is pretty all the year, and when in flower they give a good display of bloom.

This bed I should then plant with a collection of Narcissus bulbs, putting a group of four bulbs, 2 inches deep, and 2 inches apart, between the Phlox plants, and also between the Hollyhock plants. They would make a beautiful and interesting bed in spring, and the best way to plant them would be to keep the earlier flowering ones to the two back rows between the Hollyhocks, and the May-flowering ones to the front between the Phloxes. The early-flowering ones I most recommend are Emperor, Empress, Horsfieldi, P. R Barr, Sir Watkin, maximus, grandis, J. B. M. Camm, Michael Foster, princeps, for one row, as they all flower about the same time. Golden Prince, Tenby, Mrs. H. J. Elwes, Henry Irving, Scoticus, pallidus præcox in another row, as they are earlier; and Barri conspicuus, C. J. Backhouse, Poiteau, Queen Bess, Queen Sophia, Stella, poeticus ornatus, Orphée, M. Magdaline de Graaf, Nelsoni major, pulchellus, Grand Duchess, Gwyther, Beauty, Mrs. C. J. Backhouse, Falstaff, Model, and præcox grandiflorus, for the front row. They are all lovely Daffodils, flower freely, and are hardy. It is well always to make a hole with a trowel for each bulb, and to put a little sand in it round the bulb when planting, as direct contact with manure is very injurious, and unless this precaution is taken some of the bulbs are sure to come in direct contact with it, and would, in consequence, probably be lost.

Where the Galtonias are I should plant three bulbs of the old double Daffodil Telamonius plenus between each two Galtonias, as they would form a grand clump of deeper orange than the other Narcissus which are in flower at the same time as they are; but where the Lilies are nothing can be planted, as the Lily leaves will completely cover the space given to them in the spring.

"F. G." has a bed of the same size facing south, and though I think all the plants I named will be fairly contented in his north bed, I should have preferred putting them in the south one, of course. But I want him to fill this one with Roses.

A wire-trellis, made of Pea-trainers, about 5 feet high at the back, answers very well with some of the hardier climbing kinds of Hybrid Perpetual Roses trained up it, and if dwarf Hybrid Perpetuals are planted in rows in front this bed will be a mass of pink and red in July. Bulbs can always be planted in clumps between each two Rose-trees, though the old-fashioned idea is that Roses must have a bed to themselves. I have proved for years that spring bulbs, if not planted actually under the Rose-trees, do no harm to the Roses at all, and there is no doubt at all that they greatly improve the bed in spring. All that is needed is a good mulching of manure every autumn, and instead of digging this into the bed in the spring, a little soil must be evenly sprinkled over it to give it a neat appearance.

"F. G." has also a border in his kitchen garden 10 feet wide, and if it were mine I should fill it with a good collection of Cactus Dahlias, which, in July, August, and September, if brought on early, ought to be at their best. About a yard apart is the best distance to plant them, and the ground requires well manuring before they are put in. Pot roots are better than cuttings, in my opinion, and they can be bought from any good nurseryman in the early spring. After the first year the old roots could be left in the ground, in the southern counties, but in the midland ones I recommend their being taken up in early November and housed where frost cannot reach them. About March they can be put in a greenhouse, and it is important they should not be drawn up by being too far from the light. In May they can be planted out, but there are no plants so easily cut down by frost. "F. G." lives in the south, so he can leave his out all the year; but with very little trouble anyone can grow Dahlias, and they are certainly flowers to be grown. Even when cut down they soon spring up from the root again in spring, unless a cutting has been planted, and as it has no tuber to spring from a touch of frost means death to it. This is the reason I do not like Dahlia cuttings. They cannot be put out sufficiently early to secure an early display of flower during the summer. Mrs Jocelyn.

Whitlavia grandiflora alba poisonous.—We planted this season in our garden for the first time a bed of Whitlavia grandiflora alba. We found that the foliage stung somewhat like a Nettle, leaving a prickly sensation on the skin. One of my maids was in the habit of picking off the withered flowers. She did this one day when she had a scratch on her arm, with the result that she was poisoned by the plant. The arm, as far up as the plant had touched her, became affected as if by eczema, and in parts where she had touched her face with her hands the poison produced a kind of erysipelas. Her face swelled badly, and a doctor had to be consulted. I thought it might be of interest to you to know about this, and perhaps you may think it desirable to warn others, through the medium of your interesting paper, of the danger arising from the poison of this plant.—E. S. D.

Gladiolus Dr. H. P. Walcot—This is a superb variety, a large number of the brilliant flowers opening upon the spike at once. A cut spike now before me has twelve, and each blossom is over 6 inches across. The three outer segments are vermilion, streaked with white, the inner ones overlapping, the upper similar to the sepals; the two lower each have a large white blotch in the centre, the throat being spotted with a deep crimson-lake on a silvery-white ground.—R.

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FERNS.

FERNS BY THE WATERSIDE.

The natural grace of Ferns is such that they are rarely, if ever, out of place in the garden, but it is by the waterside that the beauty of their arching fronds can best be appreciated. Ferns gain an added charm by the proximity of water, from the Bracken that clothes the gently-sloping banks of lakes in noble parks, where, beneath the shade of Oaks, mirrored on the placid surface, the fallow deer stand amidst the breast-high fronds, to the Hart's-tongue that hangs from the low verge above a tinkling rill. By the moorland stream the tall Osmunda towers in giant clumps and the Blechnum stars the creviced rock, while in the tree-embowered nook at the foot of the still pool the gracile Lady Fern curves aloft its delicately fretted frondage in the glints of sunlight that filter through the leaves, and the Male Fern almost hides the first of the stepping-stones that mark the angler's crossing. Seeing the charming effects produced by Nature's waterside planting, we do well to follow her example by fringing streamlets and ponds here and there with hardy Ferns, of which there are some not indigenous to this country that may be utilised with advantage, and which form a

The bolder hardy Ferns by waterside.

pleasing contrast to our native varieties. The Canadian Maiden-hair (Adiantum pedatum) grows to a height of 2 feet in Devonshire and is quite hardy, while Onoclea sensibilis and Struthiopteris germanica also flourish and increase, and Davallia Mariesi is also hardy, while in a sheltered nook Woodwardia radicans has remained uninjured for some winters in the open. Neither of the latter two varieties is, however, to be recommended for planting by the waterside, a rockery or wall being the best situation for the former, while the latter's hardiness is too doubtful to admit of its being counted on to survive a cold winter.

S. W. F.

White Delphinium.—This variety is as vigorous in growth as many of those which bear different coloured flowers, and for contrast with them it is a valuable addition, for of this noble class of plants we cannot have too many, especially if subsequent summers are to be as hot and dry as the one we have passed through—the Delphinium being a deep-rooted plant.

Applying artificial manures (*Ignorant*).—It is a capital plan, before spreading artificial manure over growing crops such as Onions, to mix with it a portion of fine soil. Potting-shed refuse passed through a coarse sieve answers as well as any, using the soil and manure in about equal proportions. The crops then get the benefit of the manure to a far greater extent than when it is applied unmixed. It gets washed down to the roots more quickly and more thoroughly than when it lies completely exposed on the surface, in which case it often becomes baked and hard, and is to a great extent wasted. Let anyone try the experiment by dressing in both ways two small plots of Onions growing side by side, and the truth of my assertion will soon become apparent.

HOUSE AND WINDOW GARDENING.

IVY-LEAVED "GERANIUMS" IN BASKETS.

Among the many subjects suited for baskets few can surpass the Ivy-leaved Pelargonium. They grow very freely, are of varied colours, and invariably droop over in a most graceful manner. Then, again, their period of flowering is so extended, lasting for fully nine months out of the year. With a little Sphagnum Moss placed in the basket first, then a few pieces of strong and fibrous turf, it is easy to fill in with a further compost of leaf-soil, thoroughly decayed manure, and turf, in equal proportions. There is no necessity for sand or other drainage with these baskets. It is well to plant liberally, so as to get an immediate effect, and we would place three in a basket 9 inches to 12 inches in diameter. A far better effect is gained when all of one variety are in the same basket. Six of the best double-flowered varieties may be found in Ryecroft Surprise, salmon-pink; Corden's Glory, bright scarlet; Distinction, rosy-pink; Souvenir de Charles Turner, deep pink and maroon; Mme. Thibaut, pink; and Candeur, a pure white. La France, Mrs. H. Cannell, Dolly Varden, and Masterpiece are good single-flowered varieties. As a plant for trellis-work very few can surpass these. They may, in fact, be grown in almost any form—as dwarfs, trailers, climbers, or pyramids — and are especially useful in the window-box.

FUCHSIAS IN WINDOW-BOXES.

Fuchsias do not appear to be so popular as they were twenty years ago, for the host of new things that are constantly claiming the attention of gardeners have, more or less, placed one of the most graceful of summer-flowering plants in the background. Nevertheless, wherever they get anything like good culture they well repay the attention bestowed on them. I have lately been struck with the excellent effects they produce when used in window and balcony-boxes, especially in rather elevated positions, where varieties of a drooping habit of growth show themselves to great advantage. Some of the old single varieties like Duchess of Lancaster are very effective when seen from below, and they continue to branch out and flower the whole season through. Plants that have done one season's work in pots are better than quite young spring-struck cuttings, for they fill the boxes out quickly, and continue in flower as long as the boxes are needed. Single Fuchsias, like many other flowers, have suffered by the rage for big double-flowered varieties; but for graceful beauty and freedom of flowering the single varieties can still hold their own, and will probably before long come again to the front. I may add that the Fuchsia has a great advantage over many plants, for it can be kept during the winter in positions where many other summer-flowering plants would not stand any chance, and if placed somewhat closely together in boxes and kept rather dry a great number may be stored in a small space. So long as they are kept free from frost they are all the better for being quite cool, until they commence to grow in spring, when they can be pruned into shape, and potted off singly ready for another season's display.

J. G., *Gosport*.

HOUSING TENDER PLANTS.

It is quite time that all plants should be housed that one is anxious to keep, such things, for instance, as Palms in variety, Grevilleas, and any specimen plants more than ordinarily tender, as Heliotropes. Where this work is in progress it will be advisable to lift any inmates of the flower garden required for potting up. A batch of the Paris Daisies will come in very serviceable and furnish a good supply of flowers when the frost has made an end of nearly everything out-of-doors. If lifted carefully, well soaked, and placed in a late Peach-house under partial shade, they will feel little of the removal. Flowers that are quite open may perhaps go, but partially-expanded blooms and those yet to come will all develop satisfactorily. A batch of Marguerite Carnations comes in very serviceable, especially for button-hole work, a white strain being particularly noticeable both for size and substance. Where Cannas have not been retained in pots, sufficient can be lifted to help with groups, as occasional house plants, and the like. Especially are they useful if one has to group occasionally on rather a large scale and more tender foliaged plants are not available in quantity. Such sorts as Bariletti, Geoffrey Saint Hilaire, Paul Bert, and President Faure show to great advantage in connection with early-flowering Chrysanthemums like Desgrange and G. Wermig and a collection of Starworts in pots; in the latter plants the shade of colour as represented by Robert Parker is very telling. The value of Starworts for pot work is as yet but imperfectly known; they come in at a most acceptable time just before the Chrysanthemums and stand very well, at least the majority of them, as house plants. The great thing is to keep them in robust health right away through the summer, and this can only be effected by plunging the pots to the rim in ashes or some such material and feeding liberally and regularly. This remark holds good in the case of all hardy plants that are likely to remain long in pots. Any isolated beds in the flower garden that have gone to the bad may as well be cleared and replanted. There are so many things that can be utilised for the purpose that it is a pity to have a lot of empty beds for seven months in the year. A selection of the best of the Polyanthus seedlings having been made last spring, some beds can be filled with these, that is where it is a question of being particular about colours for individual places. If cuttings of Pinks were inserted at the time advised they will now be strong plants and may be put out at any time. Beds partially filled with taller hardy things will be a suitable site. Of some flowers, notably Chrysanthemums, it has been remarked, "One does not want them all the year round," and Wallflowers flowering away all through the summer seem perhaps a little out of place. In their case, however, the perfume is so delightful as to render them always acceptable.

E. B.

GARDEN PESTS.

Caterpillar on Apple-tree (*S. D. Lytte*).—The insect you enclose is the caterpillar of a moth belonging to the family Geometridæ, probably that of the Swallow-tail-moth (Curapteryx sambucaria), a by no means uncommon insect. The caterpillars of this family are known by the position of their legs, which are placed at the end of their bodies, so that when they wish to move they stretch out their bodies forwards as far as possible, lay hold of the substance they are on with their legs just behind their head, and then, bunching up their bodies, they draw forward the legs behind. From this action they derive their popular name of "looper" caterpillars, and their scientific family name just given, meaning "earth measures," on account of their appearing to measure the ground as they walk along. When at rest, clinging on to a stem, as they often do only by the legs behind, they are often mistaken for dead twigs.—G. S. S.

Pear-tree (*W.*).—The best thing you can do is to scrape the bark of your Pear-tree, wetting it first with a lather of soft-soap, so that all that is scraped off may be removed. Then scrub with a stiffish brush, using the following mixture: ½ lb. of soft-soap, ¼ lb. of flowers of sulphur, to 1 gallon of water; or a thick white-wash, to every gallon of which has been added ½ pint of paraffin-oil, well mixed with ¼ lb. of soft-soap. Keep this mixture well stirred. This operation may be performed any time before the end of February. In America they use a solution of whale-oil-soap as a winter wash. —G. S. S.

Strawberry-plants attacked (*S. J. W.*).—Your Strawberry-plants have been attacked by the grubs of the cockchafer or the Rose-chafer, but the specimen you sent was so decomposed when it reached me that I cannot say to which beetle it belongs. The best thing to do is to turn up the grubs with a small fork or spud. Gas-lime would be of little use unless dug in, and then it must not be put too near the plants. Heavy waterings with liquid-manure help the plants and are distasteful to the grubs.—G. S. S.

Insects near fireplace (*J. T. Jones*).—The insects you sent are specimens of one of the "Bristle-tails Silver-fish," or "Fish-moths" (Lepisma species). They feed on crumbs and other particles of food which may be dropped about. Blow the insect-powder into all the cracks, etc., likely to shelter them, and you will probably soon be rid of them.—G. S. S.

Carnations diseased (*C. K.*).—The stems of your Carnations have evidently been attacked by some insect, but after careful examination I could not find any. The culprit is probably the grub of a fly. It is difficult to suggest any remedy, as, when once the grub is inside the stem, it cannot be hindered without destroying the shoot. As a preventive against a future attack you should cut off and burn the infested shoots, etc., as soon as you notice anything amiss.—G. S. S.

Caterpillars in kitchen garden (*Achilles*).—As regards the caterpillars on your Cabbages, if they are those of the common white butterflies, dressing the ground with gas-lime is of no use at all, as they do not become chrysalides in the soil. You should syringe the plants with the extract from 10 oz. of Quassia-chips, 9 oz. of soft-soap, mixed with 10 gallons of water, or weak brine or soap-suds. In America Paris-green is largely used for dusting among the leaves, but it is such a poisonous substance that I should hesitate to use it. A dressing of gas-lime, 2 tons per acre, laid on the ground for a month at least before being dug in, is a safe dressing, and would be useful. If possible, it could be laid under the plants, so that when any caterpillars leave the plants in order to become chrysalides they fall on to this gas-lime, but how this might suit the Cabbages I am unaware. Probably if the crop had practically ceased growing it would do no harm. Other caterpillars besides those of butterflies attack Cabbages. These become chrysalides in the soil, and should always be destroyed when found.—G. S. S.

Diseased Cactus (*Mary Cheatle*).—I cannot find any trace of insects on your Cactus. I expect the atmosphere of your vinery is not suitable for Cacti, which like dry and light positions. The disease is of a fungoid nature.—G. S. S.

THE PEA-MOTH (GRAPHOLITHA PISANA).

THE Pea crop is one which is most useful in gardens, and there are few persons who do not enjoy a dish of good Peas. Unfortunately, it is a crop which is by no means always easy to bring to perfection as it should be. When quite young the plants suffer much at times from the Pea-weevils, which gnaw the leaves. Birds and mice do their "level best" to thwart the efforts of the gardener. Mildew also is very injurious, and if a spell of hot, dry weather occurs when the pods should be filling out, unless care be taken to provide the plants with sufficient moisture the Peas are scarcely worth eating. To add to the gardener's troubles, the caterpillars of this moth attack the Peas and render them unfit for use. The moth generally makes its appearance in June, and lays its eggs in twos or threes on the quite young pods. The young caterpillars as soon as they are hatched gnaw their way through the pods and then into the Peas, on which they feed until they are full grown. They then make their way out of the pods, and falling to the ground bury themselves a little way below the surface, enclose themselves in a cocoon formed of silk, which they spin round themselves, and remain in this condition until the following spring, when they become chrysalides. From these the moths emerge in June. From the manner of life of this insect it is clear that the caterpillar, when in the pods, cannot be reached by any insecticide, and though they might easily be killed by one during the time that elapsed between their leaving the egg and entering the pod, it would be almost

The Pea-moth (Grapholitha pisana).

impossible to make quite certain when that time arrived. The eggs of all insects are very impervious to the action of insecticides, so that it is of little use trying to destroy them. If the moths could be detected flying about the flowers of the Peas of an evening they might be caught in a butterfly-net. As soon as the crop is off, a row of Peas infested by this insect should be pulled up and burnt, so that any stray pods which have not been gathered may be destroyed. These pods, more likely than not, contain some of the caterpillars, for, when gathering Peas for the table, pods are probably passed over which have not grown quite so well as the others. The ground should then have a good dressing of lime, and, when dug, the top soil should be turned well down, so as to bury the cocoons, which are near the surface, deeply, and so render it impossible, or at any rate more difficult, for the moth to reach the surface when it emerges from the chrysalis. This insect belongs to a family of small moths, many of whose caterpillars are very destructive in gardens. Mention has been made of several of them in this series of papers—the Oak-leaf roller-moth, the codlin-moth, and others. They are often known by the name of bell-moths, as their front wings are very square at the tips and rounded at the shoulders, and when folded over the back of the moth, as they are when at rest, the insect has somewhat a bell-shaped appearance. The scientific name of the family is Tortricidæ. The Pea-moth measures rather more than ½ inch across the wings when they are opened to their fullest extent. This upper pair are of a dusky, brownish-grey colour. On the front edge are several short, white lines, sloping from the edge towards the end margin of the wing; below these and near the end margin is an oval silvery wing, enclosing several short, dark lines. The lower wings and the body of the insect are of much the same colour as the upper wings, but the body has a darker band on each joint. The full-grown grubs are rather more than ½ inch in length; they are yellowish-green in colour, with black heads, with a brown band on the first joint, and several dark dots bearing hairs on the others. The three pairs of legs in front are black. Besides these legs on the first, second, and third joints of the body, there is a pair on the sixth, seventh, eighth, ninth, and last joints. The chrysalides are brown, and each is surrounded by a silken cocoon. By the courtesy of Her Majesty's Stationery Department I am able to give a figure of this insect.

G. S. S.

Caterpillar on plant (*G. K.*).—The insect you enclosed is the caterpillar of the Swallow-tailed-moth (Ourapteryx sambucaria), a by no means uncommon moth, although not often found in great abundance. The caterpillars are no doubt injurious to plants; but, as they are seldom found in large numbers, they do not do much harm.—G. S. S.

Insect queries (*Entomologist*).—I am sorry I cannot at once answer your questions; but I am away from home, and will reply as soon as I return.—G. S. S.

NEGLECTED PLANTS.

BEGONIA METALLICA.

ONE of the very best of Begonias for winter or summer flowering is the one under notice, and in addition to its blossoms the bronzy leaves make it a desirable plant for grouping along with others in the intermediate-house during winter and in a cool greenhouse during summer. The flowers, which are of a bright rosy colour, are set upon stalks sufficiently long to show them well above the foliage. Young, healthy plants of this Begonia growing in 4½-inch or 6-inch pots will be found to last a long time in flower when used in rooms or in windows, and small, neatly-grown plants of it are suitable for dinner-table decoration, the bronzy foliage looking well upon the white table-cloth. The flowers, too, when cut are very useful. In order to keep up a supply of flowering plants all the year round resource must be had to cuttings. A few put in early in February will yield plants that will produce a plentiful supply of flowers during summer and autumn if grown in a cool-house or pit; and few plants will be found to grow and flower more freely in a shady conservatory, heavily draped with climbers, than this Begonia. Another supply of young plants should be raised from cuttings put in about the middle of July, and kept growing in a pit or house as close to the glass as possible. Pick off the flower-stems as they appear, which will induce the plants to grow more vigorous and healthy. In the end of October or beginning of November place in the coolest end of a plant, stove, or intermediate-house, and if in good, healthy condition they will be in full flower by Christmas, and will keep up a supply of blossoms for six or eight months. This Begonia metallica will be found to be suitable for planting out against the back wall of a warm-house or to train up pillars or rafters. In order to obtain strong, healthy plants which will yield a supply of flowers in a short space of time, select cuttings from old plants which have been previously cut down. Cuttings made of shoots growing from the base of old plants will be found to root freely. Let them be 4 inches long, strike them in light soil consisting of equal portions of good turfy loam and fibrous peat, sifted through a fine sieve, mixed with plenty of sharp silver-sand. Fill some 4½-inch pots (well drained) with this compost, pressing it firmly into the pots, put a little clean silver-sand on the surface of the soil, and water through a fine-rosed watering-pot to settle the soil. The cuttings may then be inserted round the sides of the pots. Place the latter in a propagating-pit or house, and when rooted pot them off singly into 3-inch pots, using a similar compost to that employed for the cuttings, with a portion of leaf-mould added, but with less sand. After potting place the plants in the same temperature as before, until they get well established, when they may be transferred to a cooler house and be shifted into larger pots. They will soon grow into useful flowering plants. When the pots become full of roots they will be greatly benefitted by being fed either with liquid cow or sheep-manure, or with some other fertiliser.

H. B.

INDOOR PLANTS.

THE ALOCASIAS.

The species illustrated was introduced from Borneo about 1860, being one of the many excellent things sent home from time to time by the travellers employed by Messrs. Hugh Low and Co., of Clapton. It was in the nurseries of this old-established firm that I first saw it under cultivation early in 1861, prior to its being sent out. It was with no small amount of astonishment that this handsome fine-foliaged plant was viewed, being so entirely distinct from anything else belonging to the same genus or any allied one, as the Caladium. From that time to the present it has not been surpassed in the richness or beauty of its foliage by any other species. True, we have A. Lowi, A. Sanderiana, A. Thibautiana, and other kinds, all distinct, but none of them equal to A. metallica, or A. cuprea, as it is sometimes called. It has been used for hybridising, one of the best kinds raised being A. Sedeni, which was the result of crossing it with A. Lowi, another result of the same cross being seen in A. hybrida. A. Chelsoni owes its origin to the crossing of A. metallica with A. longiloba.

The durability of the foliage of A. metallica is very great, for no other species will retain its leaves so long or in so perfect a condition under good cultivation. It is not predisposed to damp off at the points of the leaves as is A. Lowi, the white or silvery margin of the latter being more liable to this failing, nor is it a plant that is at all liable to attacks of insect pests. It has the essential properties of a useful decorative fine-foliaged plant, whilst it is quite small, and if grown as such nowadays and associated with the new race of Caladiums quite a pleasing contrast would be afforded. For this purpose the small bulbils should be chosen in preference to the larger and more fully matured ones. These latter will yield much the finer foliage, but the habit will not be nearly so good. From three to five of the former when well established in a 6-inch pot will be most effective, or if smaller examples be needed then grow them singly in smaller pots. When pulling an old plant to pieces it is easy to obtain a good supply of these useful bulbils for this purpose. In the cultivation of large or medium-sized plants it should be made an important item of culture to shake out the plants once in two or three years, completely denuding them of the soil, which by that time will have become sour or be otherwise exhausted. The old bulbs will also bear shortening below where any fresh roots are likely to be emitted. All decaying roots or other matter should be removed, and if needful a washing should be given in tepid water, after which silver-sand should be shaken over the bulbs.

ACHIMENES.

Most gesneraceous plants are remarkable for the great beauty of their blossoms, and some of them, such as Gloxinias, Streptocarpuses, and Gesneras, are in many places grown in considerable numbers. The same may to a certain, but more limited, extent be said of the different Achimenes, for while in some gardens they form one of the showiest summer features to be found therein, in many they are conspicuous only by their absence. Perhaps this is in some instances owing to the fact that Achimenes are considered to require a large amount of heat for their successful culture, which is by no means the case, and also that they are not of much value for cutting, which is by many regarded as the one thing necessary, for the majority of purchasers nowadays, when any plant is brought under their notice, inquire at once, "Is it a good thing to cut from?" Though in the case of Achimenes this can scarcely be answered in the affirmative, yet they are very beautiful when grown as large specimens, as small, bushy plants in pots 5 inches or 6 inches in diameter, or more particularly in suspended baskets, as in this way they are highly satisfactory.

In commencing the culture of Achimenes the better way is to purchase some of the small scaly tubercles during the winter months when dormant, as they can then be easily sent to any distance by post, and so quickly reach their destination. They may be laid in pots or pans and just covered with soil, when on the return of spring, if kept slightly moist and in a warm greenhouse or intermediate temperature, they will quickly start into growth. When the young shoots are about an inch long is a very suitable time to remove them to the pots, pans, or baskets, in which they are to flower, as if it is done at first the soil is apt to get sour before the roots take possession of it. A light, open soil in which well-decayed leaf-mould plays a conspicuous part is very essential to the Achimenes, and it should also be borne in mind that the young foliage is very sensitive, especially when grown in heat, and is particularly liable to the attack of insects and also to be injured by an excess of sunshine. Fumigation requires to be very carefully done, and I have known many plants suffer in this way, but the introduction of the XL All fumigator has done away with all this risk, and when the plants are in full flower the insects may be destroyed without injuring even the delicate blooms. Of course, where Achimenes are required to bloom as early as possible they must be started in a stove temperature and hardened off afterwards, but for summer blooming in the greenhouse they may be grown comparatively cool all the time. The drainage should be thorough and the watering carefully done, especially in the earlier stages, but as the pots get full of roots weak liquid-manure will be of service. The fact that many of the beautiful Gesnerads may be grown with little or no heat is very apt to be overlooked, but such is the case, and I once saw a fine batch of Gloxinias that had been wintered in company with Tuberous Begonias in a greenhouse, and when started into growth they were potted and placed in an ordinary cold frame, and in pots

Alocasia metallica.

5 inches in diameter they flowered beautifully. Of course care was taken to shut them up early and to maintain as far as possible a humid, growing atmosphere. At the end of July many of the plants were full of flower and very valuable for the greenhouse. Seeds of these different gesneraceous plants are, as a rule, easy to obtain, and in nearly every case the plants so obtained will flower in a short time. Whether it be Gloxinias, Achimenes, Tydæas, Gesneras, or Streptocarpus, the seeds should if possible be sown in February in a stove temperature, and the young plants encouraged to grow away quickly. The seed is so minute that a little extra care in sowing it is necessary; hence the soil should be passed through a sieve with a quarter of an inch mesh, and the rough portion may be placed over the crocks in the bottom of the pot or pan for drainage. The soil having been levelled and pressed moderately firm, the seed should be sown thinly but regularly thereon, and the whole covered with a pane of glass till germination takes place. Care must be taken that the sun does not shine on the glass, otherwise the tender seedlings will be roasted.

H.

FRUIT.

MELONS.

Of late years more Melons have been grown than formerly. Our correspondent, Mr. J. Hinxman, of Fisherton Mells, near Salisbury, who has grown the variety illustrated, Sutton's Royal Favourite, says it is a very fine Melon, a free setter, easily grown, and may reach a large size, the two fruits weighing over 10 lb, and this being the average size of ten fruits grown in a small house. To many of our readers the above information may be valuable, as amateurs often fail with Melons; but although there are disadvantages in the way of heat, as a dry heat at the finish is needed, and careful attention to moisture, there is no great difficulty in securing a good crop of Melons. Many amateurs lose time at the start by allowing plants to go too long before stopping. I would advise early stopping, getting the first fruits that show, as by so doing much time is saved. With ample heat there is no difficulty in getting three crops of Melons in a year in one house—of course, with three sets of plants—but to do this there must be an early start, sowing the first seeds at the end of December, and clearing the crop early in May. I am aware amateurs may not want to grow so many, but I only mention the matter to show that the plants, if given proper treatment, need not be so long maturing a crop.

Melon Royal Favourite. From a photograph sent by Mr. J. Hinxman, The Gardens, Fisherton Mells, Salisbury.

The raiser of Royal Favourite has also raised several other excellent varieties, and a few words will describe the variety in question. It is a large round fruit, beautifully netted, with golden skin and white flesh, the latter very thick, having but a small seed space; it is of rich flavour, and, what is so necessary to the grower, it is an early Melon. This is a great advantage, as though the thin-skinned early fruits do not keep long, they are noted for their quality, and I see but little advantage in keeping fruits when ripe. A Melon should be used at the right moment, as it so soon loses flavour. The question may arise as to whether it is necessary to have special Melon-houses or pits for these fruits, and I may say that I have grown excellent fruits in frames, merely lifting a wooden frame on to a bed of manure. I have also grown them without manure of any kind, only glass protection, but with the latter there must be less moisture at certain stages. Many years ago, when fewer Melons were grown, the last two modes of culture were the usual ones. Hot flues were the heating agency in some cases, but even these failed to give fruits of best quality, as the dry flues caused the plants to become infested with red-spider, and then the fruit failed to finish.

In a note on Melons it would be out of place to name the many fruits now catalogued, and even with the greatest care the varieties so soon get mixed—that is, lose their true character—so that it is well to get new kinds, and not plant the same year after year if the colour or shape is not true. Insects often fertilise these fruits, and if more than one kind is grown in a house it is difficult to keep them true. I have known two, if not more, distinct varieties come in one house in half-a-dozen plants, which points out the necessity of careful seed-sowing and excluding bees. It has been said the new Melons are not equal to those of the old Beechwood type, but I am not sure this is true, as, now that there are more varieties, I think many people are more fastidious as to quality. Still, it is necessary to pay every attention to quality in raising new Melons, and most raisers who study Melons make this their first aim, and I am against haphazard raising of any kind as by so doing we shall lose quality for the sake of more variety.

Doubtless the introduction of new kinds of late years has made Melon culture easier, and this is the amateur's gain, as, by growing those which mature easily, better fruit is obtained. In this note I am unable to go into the many causes of failure, but I can advise about soil for next season. Too rich soil adds to difficulties, and if some strong—that is, clayey—soil can be procured now and laid up in a heap for next year's plants, the amateur will have one of the principal wants of the plant ready. Many err in giving too rich or too light soil, others give too much food. Very little food is needed; indeed it can be best given in a liquid state, or as a top-dressing when the plants have set their fruits. It is often advised to give these plants the top portion of Grass land—that is, decayed turf; but it often happens this part is infested with wireworm, which is fatal to the plant. I find the second spit, after the Grass is removed, the best for the plants; this made firm at planting gives a short-jointed, healthy growth.

W.

Pear Catillac.—This, the best of all stewing Pears, should be grown wherever fruits for this purpose are appreciated, as it is not only a good cropper, but the tree is very hardy and possesses a fine constitution. When grafted, as I have it, on the Swan's Egg, and grown as a standard, it bears heavily nearly every year. This is, undoubtedly, the best method of growing it for securing heavy crops, and the fruits in addition become highly coloured through being exposed to the full influence of sunshine. At one time I had a diagonal-trained tree of this variety on an east wall. This was satisfactory as far as crop and size were concerned, but the fruits lacked the flavour of those gathered from the standard when stewed, and were not at all to be compared with them for appearance. Stored in a cool place this Pear will keep in sound condition until March.—A. W.

Blackberries.—It is rather strange that these are not more grown considering the quantity that may be gathered from a small space. There are many out-of-the-way corners that might be turned to advantage if planted with these. Where it is impossible to make borders for fruit-trees owing to the space for root-room being so limited, a few Blackberries could be grown, and at this season of the year they would be found most useful. The large American varieties have very pretty cut leaves, and as these remain green till so late in the season they are very useful for decorative purposes. The young growths, in whatever position they are grown, should be trained either to stakes or to the wall, for when allowed to hang about they get broken by the wind. Those grown in an open position usually fruit the most freely, the wood getting better ripened; for this reason, when the fruit is gathered the old canes should be cut away to make room for the young ones.

NOTES ON OUTDOOR FIGS.

It cannot be too deeply impressed on the minds of those who have a number of these trees under their control growing in the open that it is advisable to remove the young figlets from the lower portion of the young shoots, as it is very seldom indeed that these ripen, and when allowed to remain they hinder smaller ones that would have formed in the place from which they were removed. We too often see the greater portion of the shoots on outdoor Figs bare, only one or two fruits at their tips coming to perfection; whereas, had the first that made their appearance been removed in time others would have taken their place and would have survived the winter, unless of extraordinary severity, and thus a full crop would have been secured. In many places in the south Figs do well, and but little care is exercised in their cultivation. Large bushes are to be seen growing in the open, which in favourable seasons give a fair amount of fruit, but had these received anything like proper care the crops might be fourfold. Figs in the open are not one of the easiest fruits to grow to perfection, but when well done few pay better; therefore every care should be taken to find out which is the most suitable time for removing the figlets that form first. It is seldom that a second lot is produced at the places from which the others were taken if they are not removed before the first week in September, and more frequently August 25 is quite late enough. In houses, under more favourable conditions, this crop would ripen, but out-of-doors the fruit, not being forward enough to come to maturity, would be destroyed by the frost; therefore every effort should be made to get others to take their place, which, not being so forward, would be able to withstand the cold and would commence to swell again with the warm weather in spring. Many birds are partial to ripe Figs; this being so, the fruit must be protected with small-meshed nets, otherwise the crop will soon be cleared off. Where the fruit has to be sent to a distance it ought to be gathered before being fully ripe, otherwise it will not travel. Shallow boxes that only take one layer are preferable for this purpose, and where they have to go a considerable distance should be made sufficiently stout to resist the knocking about they get on the railway. Where a quantity has to be sent at one time it would be best to divide the boxes into four, each compartment taking a dozen. In this way when they get placed on the ends but little harm would result, whereas if there were no partitions the weight of the top fruit would crush those beneath.

H.

Cherry Kentish Red.—This Cherry should be largely planted in private gardens for cooking, as it not only ripens early, but is an immense cropper. Grown in bush form the trees when established are very prolific, and, being so hardy, they give but little trouble beyond pinching the young shoots in summer and thinning the wood out where it is too thick in winter. It is also good grown on a north wall, and then keeps up the supply until the fruit on the bush Morellos is ready for gathering. The fruits are medium-sized, but may be had much finer if the border is well mulched with partially-decayed manure; in fact, it is a variety of Cherry that will stand a great deal of feeding from the surface, resembling the Morello in this respect. The flavour is acid. It is first-rate for tart-making and bottling.

OUTDOOR PLANTS.

FURCRŒAS (FOURCROYA).

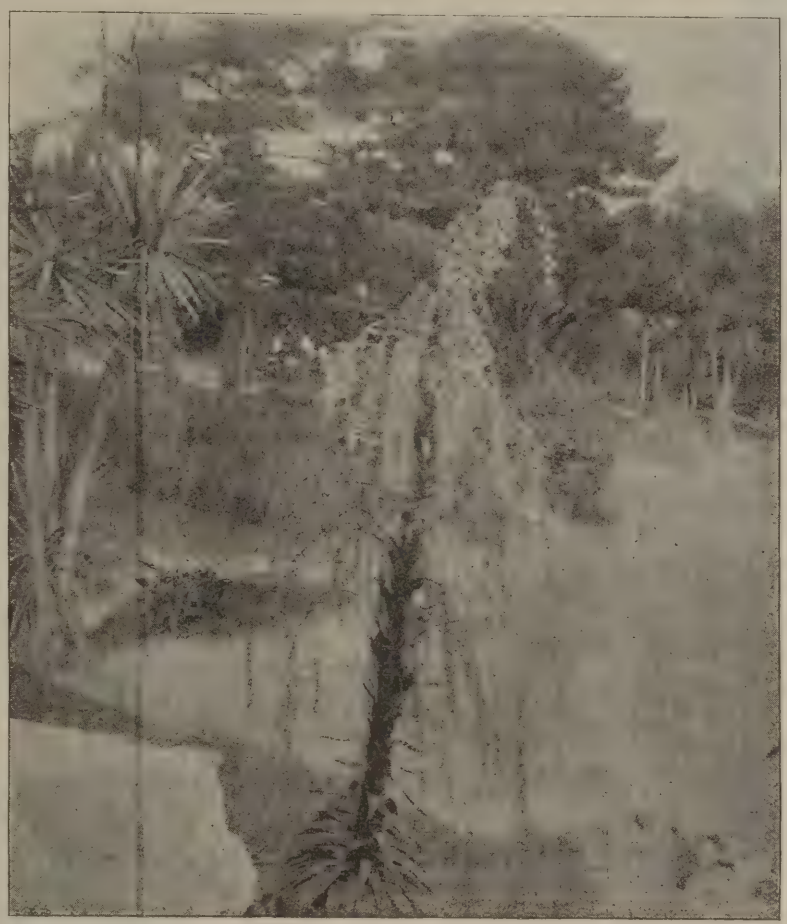
The twenty species of Furcrœa known to botanists are practically unknown in English horticulture. They cannot be grown out-of-doors except in such favoured places as Cornwall; they are large, and therefore require plenty of house room, and they are similar to Agaves in habit and general appearance as well as in their rarely producing flowers, and in dying when they do so. That Furcrœas are stately and handsome garden plants is known to everyone who has seen Mr. Dorrien-Smith's garden at Tresco, or Mr. Hanbury's at Mentone, or, indeed, any of the many gardens in Italy and Southern France where such plants as Agaves and Furcrœas form a conspicuous feature. Even in conservatories they are not by any means out of place. There are some large specimens of them at Kew, where they are grown along with the Agaves and in the large temperate-house. The introduction of F. Bedinghausi was accomplished by the collector Roezl in 1860, after whom it was originally named, and is still grown in some places as Roezli regia. It first flowered in the garden of M. Bedinghaus at Mons, and its relationship with Furcrœa was then perceived by Koch, who named it in compliment to the cultivator. It has other names besides these—viz., Yucca Parmentieri and Y. Toneliana.

F. gigantea is now cultivated largely for the sake of its fibre in India, Ceylon, Mauritius, and other places. It has a stout trunk, 2 feet to 4 feet long, leaves from 4 feet to 7 feet long, bright green, channelled, sometimes with spines on the margins, sometimes without. Its pole-like flower-scape attains a length of 30 feet, with many branches, and bearing hundreds of green and white flowers. It has blossomed at Kew several times.

F. cubensis is also widely cultivated as a fibre plant, and a variegated variety of it known as Lindeni is in cultivation in England as a decorative plant.

F. longæva (see cut) is remarkable as having a trunk 40 feet to 50 feet high and over a foot in diameter. Its leaves are from 4 feet to 5 feet long, dull green, with minute marginal teeth. Its flower-scape is equally gigantic, being about 40 feet long, with drooping branches 12 feet to 15 feet long. The plant shown in the illustration flowered freely this summer in the garden of Mr. C. F. Cole, at Mendon Pean, about three miles from Falmouth. The plant has been growing out-of-doors for several years.

All the Furcrœas have the habit of developing a large crop of bulbils in succession to the flowers. Sometimes the scape produces bulbils only and no flowers. That they reproduce themselves freely is shown by the behaviour of F. gigantea in Mauritius. It is supposed to have been introduced into the island from America about 1790, and has evidently found a congenial home there, for without any effort on the part of man it has covered waste lands and abandoned sugar estates to such an extent as to lay the foundation of a considerable fibre industry.



Fourcroya longæva in Mr. Coles' garden at Falmouth. From a photograph by Mr. W. L. Fox, Carmino, Falmouth.

Zauschneria californica.—This has been one of the most brilliant of rock plants for the past week or two, and for its bright effect should have a large space devoted to it either in the rock garden or in the border. In some localities it is apt to travel about too freely, particularly where the soils are light and warm; but in the more heavy soils it sometimes gives trouble to establish it. The flowers are brilliant scarlet or vermilion in shade, very distinct, and most effective in a large mass. In height it is about 1 foot, sometimes rather more when in the deeper soil of the border. There is a variety of it called splendens, with flowers of a brighter hue, though it is difficult to conceive anything more brilliant than the type. It should be generally known that this is a good plant for a rather dry soil or position.

POMPON DAHLIAS.

The pretty little flowers of the Pompon Dahlias are so very useful for decorative purposes and for the free display they make in the garden that a few notes regarding some of the best varieties may be welcomed by those interested. The recent show at the Royal Aquarium, Westminster, in connection with the National Chrysanthemum Society, included among the many excellent things there three classes in which bunches of the Pompon type of the Dahlias were specially catered for. The display made in these classes was an exceedingly good one, the blossoms staged being neat and pretty in form, whilst the colours in many instances were very bright and rich, and the general effect was good. When exhibiting the flowers, they are usually set up in bunches of ten, and arranged in triangular form, with leaves and buds as a finish. In the small classes six flowers, this number coming well within the limits of the small grower. The neat arrangement of the blossoms in the spray-like bunches very materially assists in creating a good effect, old exhibitors on this account often gaining a few points. One should very soon acquire the necessary art of arranging, as this has been simplified by a light, wirework-frame, in which the flowers are easily fixed in position. Over-large blooms are not wanted with this type of the flower, or their charm as miniatures seems to be lost. Neat miniature flowers of the form recognised in the show Dahlia should be the rule. The colours in which these pretty little flowers are now obtainable are very varied, and embrace some of the deepest shades as well as the most brilliant colours imaginable. Then there are beautifully chaste flowers of white, primrose, rose tint, blush, and many other soft shades to satisfy the taste of the most fastidious. A good point in the plants of Pompon Dahlias is their comparatively dwarf and compact habit of growth. A good average height for these plants is about 3 feet, so that it cannot be said that the growth is of too rampant a character. The most conspicuous varieties exhibited on the occasion before alluded to were Captain Boyton, dark maroon, shaded crimson, with good petal and outline, height 3 feet; Bacchus, a neat and compact flower, colour bright crimson-scarlet, height slightly under 3 feet; E. F. Jungker, a useful pale amber flower, height 3 feet; G. Brinckman, a pure white flower of good form, height 3 feet; Mars, a very striking flower, colour vivid orange-scarlet, height slightly under 3 feet; Tommy Keith, a very popular sort, small, profuse bloomer, neat form, and a standard variety, colour cardinal-red, tipped white, height 3 feet; Nerissa, a lovely flower, with good outline and centre, colour a pleasing shade of soft rose, tinted with silver, height about 3 feet; Arthur West, a flower of perfect form and very free, colour deep rich crimson, height about 2½ feet; Mary Kirk, another flower of good form and free-flowering, nice bushy habit, colour soft yellow, height slightly under 3 feet; Lady Blanche, a pretty pure white flower, height 3 feet; Fabio, a very distinct flower of exquisite form, colour yellow, heavily edged and shaded scarlet, height about 3 feet; Grace, a free-flowering sort, colour cerise, shaded lilac, height about 3 feet; Darkness, one of the best of the dark flowers, colour rich crimson-maroon, height 3 feet; Janet, a very distinct and lovely flower, colour rich salmon, height about 3 feet; Eurydice, a very pleasing little flower, colour blush, tipped purple, height about 3 feet; Isabel, a very striking flower, colour bright orange-scarlet, height 3 feet; Jessica, a unique flower, colour amber-yellow, edged with red, height about 3 feet; Cecil, a distinct and pretty flower, colour red, tipped white, height slightly under 3 feet; Rosalie, a charming little flower, colour pale primrose, tinted bright rose, height 3 feet; and Phœbe, a very free-flowering sort, with striking flowers of deep golden-orange, height about 4 feet. With the foregoing eighteen sorts the grower should have little difficulty in providing a quantity of flowers for home decoration, and for exhibition purposes some of the best flowers to select from.

D. B. C.

Aster acris.—This is one of the earliest of the Michaelmas Daisies, and already it is making a delightful display in the hardy flower garden. This variety flowers in great profusion for a long time, its bushy growth rarely exceeding 2 feet in height, and literally covered with charming little bright lilac-purple blossoms. Those who miss these useful plants during the autumn lose one of the prettiest features in the autumnal displays.—D. B. C.

Liatris spicata is one of the most distinct border flowers of the present time, its dense, columnar spikes of rosy-mauve flowers in a cluster being sure to attract attention.

THE KITCHEN GARDEN.

PEA AMERICAN WONDER.

In describing the good qualities of this Pea to the readers of Gardening, it is only fair to add that, since it was first introduced, now nearly twenty years ago, there has been wonderful progress made, and though American Wonder

Pea American Wonder.

was one of the first of this type of Pea, and has been the parent of many since, others have now eclipsed it for size and quantity, and I may safely add quality also. I will note the uses of this class of Pea to amateurs, and the illustration will show that as regards this crop there must have been good work to supersede so popular a variety as the one in question. The value of the American Wonder type of Pea was its earliness and dwarfness combined, and, I think, having a touch of the Marrow in its constitution made it a special favourite. The old Marrow forms usually ran very tall; they were not at all early. This is just the exact opposite; in some soils it does not reach 1 foot in height, in others a few inches more, and the pods are produced freely on the dwarf haulm, close to the soil. To the amateur with small space this dwarfness is a great gain, and many growers by sowing this variety three or four times a year, from February to July, have good dishes till well on into October; of course, change of soil for each sowing is needed. The true Marrow type could not be sown so early as this one, hence the great advantage of blending the kinds together to get an earlier variety with better quality, and at the advent of this variety the only early Peas were the white or blue small round Peas, with small leafage, running 3 feet to 5 feet high—worthless kinds to the amateur, for the pods were so small, the quality so poor, and space taken up so great for the crop given, that the term worthless, though a strong one, is applicable. I have stated we now have superior kinds to the one in question, and no one has given us better kinds than the Messrs. Sutton (Reading), who now have quite a dozen, all far ahead of the old favourite. This is after many years' trial and much space devoted to trials. Space does not permit me to go into varieties, and many amateurs are rather conservative in giving up old things for new; but let me add, where there are so many to select from there need be no fear of poor results if a small trial is given. Another early variety which is getting well known, and which will supersede American Wonder, is Chelsea Gem. This is probably a seedling from the older variety, but is a much more profitable Pea in every way. The pods are larger, longer, containing double the number of pods, and the haulm is stronger. In good soils it reaches 2 feet in height, and having more Marrow blood the Peas are of superior quality. This, like the Marrow, is a wrinkled Pea, a nice green colour when cooked, and, like the one illustrated, may be sown early or late, and may be grown without sticks. The question is often asked me—which is the best early Pea? My answer is, so much depends where sown, the soil, and how sown. I am aware it is necessary to sow Peas early to get them in May or early June, but it is useless to sow them in wet, clayey soil before the latter is sufficiently warm to cause rapid germination. Peas a long time in the soil, if at all wet or cold, often decay, and the losses are attributed to bad seeds, not the grower's fault. Another evil is thick sowing. I admit thick sowing is a necessity early in the season, but if the seeds come through well it is an easy matter to thin out when the plants are a few inches out of the soil; and after April there is no need to sow thickly—indeed, it is a loss of seed, loss of vigour to the plants, and the crop is much smaller, as the plants, when fighting, as it were, for life, cannot mature half a crop, and those matured come small and are soon past their best, the plants being unable to support them, and if the season is not favourable are soon injured by heat and drought.

By advising amateurs to grow these early Peas, and guarding them as to soils and position, it must not be thought I am adverse to growing in places where soils are not suitable; quite the reverse. At a small cost the cultivator may make his soil suitable for a few rows of early Peas, and the later lots will be no trouble, as then heavy soils are often advantageous. I have dug out a trench or deep drill, and filled in with light material, such as old leaf-soil, fine mortar-rubble—or road-scrapings from limestone is splendid material—and the seeds covered with a few inches of lighter soil. In this Peas are as early as in a good soil; it needs no preparation, and the labour taken for the Pea crop is not lost for other crops which follow, as most plants will benefit by the additional material given. A bank on a west or south border can often be utilised for the earliest lot of Peas, and in such a position there may be natural drainage, and this latter is the chief point, as once the seed has germinated freely there are few losses. Cold rarely injures the haulm when well through the soil, and the chief danger is in the start to prevent the seed decaying before it makes roots or expands. W.

Bath Cos Lettuces.—Amongst the Lettuces that will stand the winter this still holds a prominent place, and it is regretable that it is so difficult to obtain a true stock. For a long time I had given up growing it on this account, but some two years since, when in Norfolk, I saw a splendid stock, and obtained a packet of seed. I was delighted with the results the last two seasons, for nothing could have stood the winter better or have been more crisp and tender eating; in fact, I doubt if any kind can beat it for flavour. —J. Crook.

Potato Up to Date.—I saw several roots of this very fine late robust variety lifted the other day in a Hampshire garden, and the produce was a remarkably fine one. I am sure it would run to four bushels to the rod easily, yet the roots were 30 inches apart. The tubers are white and of a flattish, oval nature. They have much of the shape and appearance of Chancellor, but rather flatter. The sample turned out was specially even, a good feature in any variety, but far from being common. That fact, doubtless, helps to account for its great popularity for market sale. Not a trace of disease was visible, but the tops had quite died away. I think, judging by what I have seen of the variety, that Up to Date is one of the finest of all the late cropping Potatoes in commerce.—A. D.

Potato Bovee.—I saw a fine sample of this early American variety in Dorset just recently. The tubers bear close resemblance to those of White Elephant or strong Beauty of Hebron in colour and form, but the grower regards it as earlier than the latter and as having drier flesh. I hope to be able to test it with Beauty of Hebron and Early Puritan next year. The White Beauty and Puritan seem generally to be most in favour, because both are early and of white skin. I do not think there is much opening here now for new Americans, as, owing to those older imported forms having been so largely used for cross-breeding with our own, the new cross-bred race is so good. It is interesting, however, to see how remarkably in Dorset and Somerset the old Ashleaf holds its own as a first early Potato.—A. D.

Runner Beans.—When looking over some grand tall rows of a high-class selection of the Ne Plus Ultra Runner, either Best of All, or Prize Winner, I found one pod straight as a rule, green, narrow, tender, and very handsome, exactly 12 inches in length. This is of less length than some illustrations show, but it is the largest Bean I have seen growing, and so have said several first-class growers who have seen it. But it is easy to find hundreds on a good stock, where the culture is of the best and growing is thin, that range from 10 inches to 11 inches in length. We thus see how marvellously the ordinary Scarlet Runner has been improved in length, and yet how wonderfully productive the new ones are anyone can tell who has been where they are well grown. At Hackwood Park, Hants, recently I saw two long rows staked high, and full of vines and Beans from end to end. The seeds had been planted 12 inches apart, and yet the vines had filled up throughout. Here we have another illustration of the gain incidental to thin sowing. Ordinarily Beans are sown at from 2 inches to 3 inches apart, and no wonder in each case the plants give out, and bloom falls during heat. The finest strains of the newer Beans are obtained by selection of pods, and for this purpose the longest, straightest, and earliest of the pods are marked, all others being gathered for use. Those who want the best should endeavour to obtain Prize Winner, Best of All, Ne Plus Ultra, or Exhibition. All these give very handsome, long, straight green pods in exceeding abundance. It would pay well to grow an acre of these high-class Beans in this way for market, as the sample is so superior.—A. D.

LILIUM GIGANTEUM.

Though by no means a novelty—for it was introduced as long ago as 1852—yet this Lily is far from common. There is no danger of confounding this Lily with any other, as it is so distinct in every way. The bulbs are composed of large thick scales, of which but a limited number go to form a good-sized bulb. They are

A group of Lilium giganteum.

usually of a light brown colour, but in this respect there is a certain amount of variation according to the soil in which they have been grown. The bulbs increase in size year by year, and when they flower the entire centre of the bulb starts away to form the flower-stem, after

the manner of the American Aloe, and, like that, the original plant dies after blooming, leaving only a few small bulbs clustered around the base. The flower-stem will, in the case of a vigorous specimen, reach a height of 10 feet or more, though many will flower before they attain such dimensions. The leaves are large and heart-shaped and of a deep shining green tint, while the tubular-shaped blossoms, which are about 6 inches long, are white, tinged usually with purple on the inside and green on the exterior. It is not uniformly hardy throughout England, but where it cannot be depended upon to stand the winter this noble Lily will well repay greenhouse cultivation, for where a conservatory has to be kept gay at all seasons a few examples of this when in bloom form a very distinctive feature.

The Japanese L. cordifolium, the only other member of the group to which L. giganteum belongs, is a much smaller grower than L. giganteum, and in addition to this there are several other well-marked differences; thus in L. cordifolium the young leaves are often tinged with red, while the flower-stem is quite bare for some distance; then there is a whorl of six or eight leaves forming a kind of rosette, and above that another length of bare stem before the flowers are reached. The flowers are greenish-white, tinged slightly with purple inside and agreeably scented. L. cordifolium is both distinct and curious, but as an ornamental Lily it does not occupy a high position. Some seasons we have large quantities of L. cordifolium sent here from Japan during the winter months, and then it can usually be obtained at a cheap rate, but last season there were very few, and as it does not seem to do well in this country it is now comparatively scarce. L. giganteum, on the other hand, does well if its requirements are studied. When grown out-of-doors it wants a sheltered position with an undergrowth of thin shrubs to protect it in spring. Deep, rich, well-drained soil is essential.

Senecio pulcher is one of the handsomest of all summer and autumn perennials, producing freely its large, rich-coloured blossoms of a magenta-purple hue. These are so rich and telling in the garden as to make it desirable to extend the season of flowering to its utmost extent. This is best done, perhaps, by raising a few plants each year from root cuttings, and by potting them into 5-inch pots they may be grown in frames till the following February, and then planted out in good ground. Treated in this way the old plants in the border would bloom first, and the spring-planted ones give a succession of their handsome and distinct flowers. The plant is well worth the trouble this involves to secure an extended season of bloom.

Moving Lilium auratum.—I have an Auratum Lily in a pot, and all my visitors say they have not seen its like. It has a stem 2 inches wide at the bottom, expanding to 7 inches at the top, on which there are 150 buds, each 1½ inches to 2 inches in length. I have buried this plant, pot and all, in the garden. Will it do to shift it to the greenhouse now? Also, is this a record plant as regards number of buds, all of which are perfectly healthy? Likewise, will the bulb do for another year?—W. Back.

*** The Lilium auratum has produced what is not uncommon in this Lily—a fasciated stem. These vary in width, and generally widen considerably at the top, though a width of 7 inches is very rare. The fasciated stems invariably produce more flowers than do stems of the ordinary type, but these crowded blooms never reach the size of the more sparsely borne flowers. You do not say if the plant has thrown up more than one flower-stem, but if all the flowers are on one stem it is probable that the number has been rarely, if ever, exceeded on a pot-plant. If the pot has not long been plunged in the open ground it may be lifted and removed to the greenhouse without any bad effect, but if it has been out long enough for the stem-roots to have spread over the rim of the pot into the surrounding ground the plant will receive a check from the sudden exposure of these roots and may not perfect its blooms. In the latter case, if it is decided to remove the plant to the greenhouse, the pot had better be placed in a larger one and the stem-roots gently pressed down into the spaces between the two pots, filling up the interstice with good soil and giving a thorough watering. When the stem has died down shake the bulb out of the pot and repot. If the bulb is sound and of good size it should flower the following year; but it is very probable that it may have split up into bulblets or have disappeared altogether, as imported bulbs often do after their first flowering.

THE COTTON THISTLE (ONOPORDON ACANTHIUM).

I think you will like to have for publication in Gardening the enclosed photograph, which I have taken, of a Thistle in the corner of a garden on the outskirts of Maidstone. This Thistle was raised from seed last year (1896), and has grown to the height of 9 feet 1 inch. The foliage is handsome and very silvery, and

The Cotton Thistle in a Maidstone garden. From a photograph by Mrs. Jameson, Rose Bank, Maidstone.

presents a beautiful contrast to the surrounding Delphiniums and Foxgloves. It is growing in common garden soil without any special attention. Mrs. Jameson.

Rose Bank, Maidstone, Kent.

ROSES.

Tea Roses in pots.—Several kinds were taken from the greenhouse in June and placed in a half shady situation. Most of them have now plump buds, which the late heavy rains have helped to mature. During the long drought they were syringed every evening with tepid water.—W. H. L.

Muriel Grahame (Tea).—The value of this Rose may be judged from the fact of it having obtained several medals this year for the best individual blooms. With me several plants have run back to Catherine Mermet, although it was said to be a sport from The Bride. When the creamy colour is once fixed it will be a grand Rose. —W.

Princess Bonnie (Tea).—One should see this growing to obtain a proper idea of its beauty. It has large, loose, shell petals of a clear rosy-crimson colour, and its delightful long buds, borne on stiff stems, are very valuable. The perfume is exquisite, resembling W. F. Bennett and La France.—W. E.

Rose foliage diseased (*Brisbane*).—We never saw Rose foliage in quite the same condition before, and it is singular such should appear annually upon one tree out of many. We would like to see some more leaves, and some of them, if possible, in a younger stage. A piece of growth would be better still.

GARDEN WORK.*

Conservatory.

Palms and other foliage plants which have been placed out on the lawn should be taken indoors if not already done. In some southern gardens the Fan Palms (Chamærops excelsa) and others of the same species will flourish outside altogether, but away from the southern and south-western counties both the Fan Palms and Dracæna indivisa, which is another fairly hardy tree, must be placed under cover in winter. Bringing in the specimen plants which have passed the warm months of the summer outside will involve a rearrangement so as to make the best of things. Under the best arrangements, when winter comes one is lucky if there is room for all the plants. But it is better to throw out all plants which are on the decline than run the risk of spoiling the best specimens by overcrowding. Plants which have been outside, especially hard-wooded plants, must have abundance of air night and day till they get used to the change. If there are any insects on any plants (thrips, for instance, on Azaleas), place them in some small house or building and vaporise them. Every plant should go into the houses clean, if possible, and then, with proper care, insects may easily be kept down. Do without fires as long as possible. The class of plants in bloom now do not require much fire-heat, though if we get a long spell of damp weather a little fire will be useful in drying up damp, and when the bulk of the Chrysanthemums come in damp will have to be guarded against. Most Chrysanthemum growers find room for the plants when first housed in other houses, and then move up to conservatory when the blooms are nearly open. There ought to be some good blooms this season, as the growth is well ripened. All the forwardest should soon be placed under cover, as buds in a partially-opened condition spoil if exposed to the damp night air. The winter-flowering Salvias which were lifted and potted a week or two back should be moved inside, as a little frost will blacken the growth.

Stove.

Such plants as winter-flowering Begonias, Justicias, etc., which have been grown in pots for the most part without fire-heat, should be taken to a house where there is regular heat. But since the advent of late-flowering Chrysanthemums there has not been the same demand for early forced flowers as there was when the last Chrysanthemum blossom disappeared early in December. A few groups of bright flowers may be required for various purposes, and these the stove and forcing house will supply; plenty of table plants will also be required from the stove so as to have frequent changes. In the country, where large shooting-parties are given, table decorations will require much thought, so as to provide material for changes. Something may be done on the cloth with Smilax, Asparagus, and other foliage, but in addition living plants of a neat and graceful outline will be required. These will generally be found in the stove—a suitable selection of such things as Palms (Cocos), and such things as Crotons, Dracænas and Pandanus Veitchi. Among suitable flowering plants the new Begonia Gloire de Lorraine is a charming thing, with a neat habit and bright rosy blossoms. The 5-inch pot is the limit in size for table plants, and small Maidenhair and other Ferns are useful in very small pots.

Late Grapes.

It is better not to let late Vines waste their strength in producing laterals. For the most part they will not do this, and any tendency to make growth should be checked. Outside borders should be covered to throw off the wet. Wood shutters or sheets of galvanised iron are cheap and lasting. The iron is the most suitable, and is light and easily stored when not in use. It is the greatest possible mistake to train late Vines near the glass. If the leaf touches the glass the condensed moisture soon trickles down on to the bunches and damage is done before it is noticed. From 16 inches to 18 inches from the glass will do, but less than that is certainly too near for late Grapes which have to hang some time. A little fire-heat will be necessary in damp weather, but not when the weather is fine and dry. Do not make the late vinery into a store-house for plants if it can be avoided.

Winter Cucumbers.

Strong plants put out and moved on steadily will do good work through the winter. A comfortable bottom-heat of 80 degs. or so, and a top heat of 65 degs. at night, need not be exceeded if the plants are to live out their full time. Winter Cucumbers will do very well in narrow beds in a comparatively small quantity of soil to begin with, frequent light top-dressings being given afterwards as required. If the compost is very light the plants make a good deal of growth, which in time becomes too weak to bear freely.

Cold Frames.

For the present, Cyclamens, Primulas, Cinerarias, and Calceolarias are all right, but it will soon be time to move the earliest Cyclamens into a light house—in fact, the earliest plants are now flowering freely and will be useful indoors. Fill all spare frames with Violets, salad plants, and other useful produce.

Window Gardening.

Try by picking and giving weak stimulants to keep the window-boxes as fresh as possible for a little longer. Get the spare room ready for the stock of cuttings outside and the plants which must shortly be lifted from the borders.

Outdoor Garden.

New lawns may be made now. Where worms are likely to be troublesome sifted ashes placed under the turf will have a deterrent effect without any injury to the growth of the Grass. Where the levels have to be altered do not bring any of the inert subsoil to the top near the Grass. Grass-seeds may be sown in September if seeds are used instead of turf; but seeds should not be relied upon after September; better wait till spring if the ground is not ready in time. If mounds are raised for any purpose have them as broad in the base as possible, as

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.*

neither Grass nor shrubs will thrive on steep, narrow banks. In hot, dry situations I have seen the round-leaved Laurel do very well when kept low by annual pruning. Small plants were used and planted thickly. Slopes covered with dwarf evergreen shrubs or Ivy save a good deal of labour in manuring, and are not much trouble to keep in order. Evergreen shrubs of all kinds may be transplanted now with safety if the work is done carefully. If the weather should be dry use the hose freely over them till the weather changes. A sprinkle overhead checks evaporation and keeps the foliage right till the roots get to work. Carnation layers, if well rooted, may be planted out; the beds to receive them should be in good condition. If planted in thick masses in beds on the lawn a few plants of each kind should be planted elsewhere, 18 inches apart, to give room for layering. Gather flower-seeds before the pods burst. See that Dahlias are securely tied.

Fruit Garden.

When late Melons are grown in frames it may be necessary to renew the linings to increase the bottom-heat to ensure the fruits ripening well. A poor-flavoured Melon is useless. Remove sub-laterals from late Grapes; a shoot or two does no great harm, but when many are left, and the leaves are touching the glass, they form conduits for conveying the condensed moisture into the house and often on the bunches. All bad berries should be cut out the moment they are noticed. It is difficult to keep Grapes in leaky houses, and when painting—especially inside painting—is neglected the roof will leak. Keep down evaporation in the house by placing a layer of litter on the borders. In the case of early house started about the new year, root-lifting, if necessary, may be done now. Shade the house for a time to keep the foliage up, and syringe occasionally for the same purpose; expose the roots for as short a time as possible. Vines are long-suffering things, and will bear a good deal of present hardship if the roots are afterwards placed in some good stuff and made comfortable. Any second growths, laterals excepted, on wall-trees or espaliers should be removed. Gather Pears, Plums, and Apples as they ripen. Look after the maggotty Apples and destroy the maggots; considering the shortness of the crop this year, there are more maggoty Apples than there should be if proper measures were taken to destroy the larvæ of the Apple-moth. Unripe Grapes ought to have moderate fires to complete ripening.

Vegetable Garden.

Celery is growing fast now, and the full-grown plants for autumn use should be earthed-up before heavy rains set in; but the earthing-up of the later Celery is not urgent yet. If done by the end of October it will be time enough. Paper bands as collars may be usefully employed in the preliminary stages; it keeps the plants together and makes the earthing-up easier, and the soil is less likely to get into the heart. Celery should be earthed-up dry. The seed-sowing for this season is pretty well over now, except it may be a few seeds of Brown Cos Lettuce or some other hardy Lettuce to stand the winter in the seed-bed. Cucumbers in frames will go on bearing for some time longer yet if covered up warm at night. Not much water nor much ventilation will be required now. Cucumbers indoors will require regular fires now, as the night temperature should not fall below 60 degs. Unless there are special reasons for haste, it will be better not to use very high temperature just yet. A sturdy, robust habit will be useful when the days shorten. It is no use thinking anything about Winter Tomatoes unless a temperature of 60 degs. can be maintained at night. The flowers should be assisted in the setting during winter and onwards till April or May, if not later. A camel's-hair brush or a rabbit's tail drawn over the flowers when the pollen is dry, or sometimes a tap with a padded stick on the stem will suffice.

E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 20th.—Planted early Cabbages for spring, also a few plants of Ellam's Early Cabbage on warm border 1 foot apart to come in early. Root-pruned several Apples and Pears which had grown rather too vigorously. Filled frame with cuttings of choice hardy evergreen shrubs. Finished housing the hard-wooded plants; will leave air on night and day till the plants get used to the change.

September 21st.—Filled a large pit in which Melons had grown with Marie Louise Violets. Lifted tricolor and bicolor Pelargoniums from the beds and potted them; the beds will shortly be planted with bulbs, etc. Covered outside Vine-borders with sheets of galvanised iron to keep off heavy rains. Some Chrysanthemums whose buds were getting prominent have been placed under cover; the general collection will soon be housed, except late cutting sorts.

September 22nd.—Gathered Apples and Pears as they ripen. Moved earliest Cyclamen and Chinese Primulas to light house, where a little fire is used. Washed out a lot of Tomato-seeds from the fruit; we save seeds from the finest fruits only, and select the fruits from the most prolific plants. Ran round Strawberries in pots to take off runners which were just showing. Planted Arbor-vitæs to form a hedge.

September 23rd.—Gave a dressing of gas-lime to a plot of land to get rid of wireworms—2 bushels to the square rod; the ground will not be cropped again till spring. Planted two frames with Lettuces and Endives for winter. A border of Brown Cos Lettuce has been planted, to be covered with dry Oak-leaves before frost comes; this way of preserving Lettuces has been successful in the past. Moved cuttings of bedding "Geraniums" into house for the winter.

September 24th.—Planted Carnations in beds, sown thickly for effect; and others 18 inches apart for the convenience of layering. A few of the layers which had not rooted so well have been potted, and will be kept in cold-frame till the spring. Cleared off annuals which were past their best, and filled in the places with Wallflowers, Canterbury Bells, and hardy annuals. Sweet Peas grown for seed have been thrashed and cleaned.

September 25th.—Busy housing various greenhouse plants; a few old specimens have been thrown out to make room for the younger plants coming on. Drew more earth up to Leeks, and put paper collars round several rows of Celery to draw them together ready for earthing-up. Removed all growths from outdoor Tomatoes on walls to let in the sunshine to ripen. Pulled up Tomatoes in large house to make room for Chrysanthemums.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1650—**Largest Dahlia grown.**—Could any of your readers give the size of the largest Dahlia that has been grown (individual bloom)? A friend of mine has grown the undermentioned varieties the dimensions stated: Gaiety, 6 inches in diameter, 4⅜ inches deep; King of Purples, 6 inches by 4 inches; W. H. Williams, 5¾ inches by 4 inches; Grand Sultan, 6 inches by 4⅜ inches; Mrs. Gladstone, 5¾ inches by 4 inches; Gloire de Lyon, 5¾ inches by 4 inches. Are these record sizes, or have they been beaten?—CRAWFORD.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1651—**Dahlias not flowering** *(R. T.)*.—You were too generous to the Dahlias. Thin out the flowers a little, and slightly reduce excessive leafage.

1652—**Peach-stones bursting** *(Miss S. Smith)*.—Some soils are much more addicted to stone-splitting than others, and, as a rule, it is caused by want of lime in the soil.

1653—**Beetles on lawn** *(E. S.)*.—Unless you send us a beetle we cannot say much about it with any certainty. It is probably one of these engaged in burying various organic matters.

1654—**Lily buds rotting** *(T. A. Williams)*.—In all probability the reason of your flowers not opening is the dry weather we have had, which has not allowed the bulbs to get properly established.

1655—**Repotting Roses** *(Achilles)*.—Repot at the time growth is semi-dormant. There is no object in leaving them until they have flowered again; indeed, they need a little fresh soil previous to this second strain.

1656—**Protecting Clematis from frost** *(G. Dunkley)*.—Cut the Clematis down to within a foot of the ground in the winter and spread a little Cocoa-nut-fibre over the roots, as the plant has only lately been shifted.

1657—**Rose Madame Thiers** *(Jas. Fort)*.—Your Rose is correctly named. It is a Bourbon sent out by Pradel in 1874. You can root half-ripened growths at any time next month It is quite hardy. We contemplate a note upon striking Roses shortly.

1658—**Pear for planting against wall** *(Jno. Burke)*.—Souvenir du Congrès is good, Marie Louise is excellent, and Louise Bonne of Jersey rarely fails. The best quality Pear is Doyenné du Comice, and in locality and position named it would succeed.

1659—**Lilium candidum leaves fading** *(C. F. S.)*.—We should imagine some insect foe is attacking your Liliums. Why not lift a clump and give a close examination? It might be well to transplant a few clumps, but they last year after year in most soils.

1660—**Lobelia not flowering** *(Lobelia)*.—This has been in too rich a soil, and seems to be growing too strongly, but you do not say when it was planted out. If planted out late, the wet weather we have had lately has, in all probability, caused it to grow instead of flower.

1661—**Seedling Tomato** *(W. J. Atherton)*.—We are glad to receive your note, but cannot make much use of it if the variety is not named or in commerce. There are many really good Tomatoes upon the market now, and we know of several growers who have raised and stick to their own seedlings.

1662—**Raising fruit-trees** *(Quarrenden)*.—You will need to procure stocks from a good grower of them Apples, in most cases, do best on Paradise, Pear, or Quince—a few on the Pear. Plant in lines 2 feet apart—if space is no object, say 18 inches. If you will refer to our back numbers you will see good articles on grafting and budding in their season.

1663—**Culture of Lapageria alba** *(White Heather)*.—This has been described frequently in our columns. Send three-halfpence to the publisher for a back number containing an article on the subject, and this will give you more information than we could possibly convey in a brief answer to your query.

1664—**Flowering climbers for wall** *(J. M. D.)*.—You might plant the Ampelopsis Veitchi to form a quick screen; but this and the Virginian Creeper are not evergreen, nor do they flower. A Clematis or two, especially those of the Jackmani section, and also a few strong Roses, such as Félicité Perpétue, Aimée Vibert, and Rêve d'Or would also do well.

1665—**Tea Roses, etc.** *(C. B.)*.—You ask too many questions. To give all the information you require would fill a page of GARDENING, to the exclusion of other correspondents. Write again, and do not send more than three queries at a time, and put each one on a separate sheet of paper.

1666—**Book on horticultural buildings** *(A. J. Lucy)*.—We are not acquainted with any book dealing with this subject in the way you mean. Illustrated priced catalogues are published by the firms advertising in these pages. Perhaps *The Carpenter and Builder*, or similar papers, might know of such a work.

1667—**Oil-stove for greenhouse** *(D. A.)*.—Any of the stoves of the Beatrice type should do, and they are far safer and more regular than coal or coke for heating. You do not say how much 4-inch piping you have, but if the superfluous heat can pass through a second coil a small lamp should be sufficient.

1668—**Diseased Rose-leaves** *(C. F. S.)*.—Your Roses are affected with red-rust and the remains of Orange fungus. You can do nothing with them, but gathering and burning the leaves may perhaps have a slight effect upon next season's crop. Cut off all dead or dying wood at any time when perceived.

1669—**Planting evergreen shrubs** *(G. W. H.)*.—Rhododendrons, Holly, Aucubas, Laurels, and the St. John's Wort are all useful evergreens beneath trees. You would need to improve the soil by adding a good loam and some well-decayed manure. Elder does well in a similar position; so will the Mahonia japonica, a pretty evergreen Barberry.

1670—**Unsatisfactory Figs** *(P. W.)*.—We expect your Figs are too much crowded. On the other hand, you give us no particulars as to where the tree is planted and position. Well thinning out old wood to give the new a better chance to mature, stopping growing shoots in the season, allowing the leaders to make wood, and feeding will give you better results.

1671—**Green-fly on Cineraria** *(Nancy)*.—You would do better to get a sheet of McDougall's insecticide from the florist; then procure a deep box, stand the plants in this, and ignite a piece of the paper according to instructions printed thereon and the cubic space of your box. Throw a wet cloth over the whole. Repeat this fumigation again two evenings later, and be very sure of your measurements.

1672—**Planting out** *(Ignoramus)*.—1, All the herbaceous plants named by "Ignoramus" can be planted at once. 2, Gladiolus The Bride may be bought and planted any time between now and March. After planting mulch the ground with Cocoa-nut-fibre to a depth of 3 inches or 4 inches. These early Gladioli succeed best in a light soil, where they increase rapidly.

1673—**Basket flower bed** *(Zeta)*.—Any of the creeping Sedums or plants generally used for carpet bedding would do for the groundwork of your basket flower bed. You can fill in the design with a variety of subjects, and cover the handles with Clematis, trailing Roses, or Ivy. It is purely a matter of taste as to what plants are used in these and other designs.

1674—**Taking cuttings from Sweet Brier** *(Onyx)*.—You can take cuttings at any time after the wood is half ripened. Now is a good time. Make them 6 inches long and insert a little more than half that depth. The Sweet Brier is very easily rooted, and may either be grown where it is to stand or propagated in a bed and transplanted the following autumn.

1675—**Moving Carnations** *(Backward)*.—It is rather late to remove your Carnations now; layering should have been finished some time ago. The old plants would receive such a check from their removal that, even if they lived, it would be useless to think of layering their young growth. You might layer in small pots sunk in the beds if the latter is too full of roots to layer in the ground.

1676—**Slugs on Roses** *(Mrs. Chalmers)*.—Your Roses appear to be attacked by a tiny slug. We have often seen it very prevalent during a few days of wet weather after a hot and dry season. The Lime throws out a sticky, milky juice when in bloom, so much so at times as to make the soil quite damp. The leaves sent have merely held impurities of the air through these sticky drippings. It is certainly no blight.

1677—**Humea elegans** *(Wiltshire)*.—You are too late with Humea elegans for next year's blooming. It should be sown in spring in a temperature of 60 degs. to 70 degs., planted out during full summer, housed in autumn, and potted on again in spring. If wanted in the open follow the above and plant out early the second June. Sow the Night-scented Stock next March, and grow on steadily and sturdily, using a compost of strong loam, with a little sand and leaf-soil.

1678—**Weeds infesting lawns** *(R. I.)*.—Your turf was undoubtedly very foul at first. A plant or two of Plantain throws a lot of seed, and one may have seeded in the neighbourhood. If properly attended to weekly no lawn should have got into such a state. You need a little more than a pint of seed to sow the piece named, and we should re-lift and sow afresh now. Such turf as you have will do more harm than good.

1679—**Pancratium illyricum failing** *(Balmacara)*.—The bulbs had better be lifted at once, examined, and, if found healthy, replanted 6 inches deep. Give a mulch of 6 inches of leaf-mould, Cocoa-nut-fibre, or Pine-needles, and allow this to remain during the whole winter, removing it after danger of frost is past. Pancratium illyricum does best in England when backed by a hot-house wall, and requires identical treatment to the Belladonna Lily.

1680—**Rose G. Nabonnand** (*Ivy*).—This Rose, in the South of England, is always planted out in the open, and invariably flowers well. It is impossible to expect good results from a plant in a 6-inch pot, as you say. Seeing that the district you reside in is a cold one, we should advise you, if you have a greenhouse, to plant it out there, and as the Rose gets strong, and the wood thoroughly ripened, no doubt it will flower in time.

1681—**Vines not fruiting** (*C. S. T.*).—You must cut back your wood now to ripen up the growth for next year. You may cut back to the distance named, 1 foot from bunch. Your gardener's advice was good, as he did this to get new roots in quantity. Our advice is not to overcrop in future. Give a little heat, and plenty of air in fine weather.

1682—**Diseased Cucumber** (*F. Peake*).—The foliage of Cucumber sent is scorched from want of atmospheric moisture. You have kept the frame too dry, the leaves being covered with red-spider, and a check from cold has since affected the plants, causing deformity. The plant needed more shade, and a moister atmosphere a few weeks ago, and has since probably suffered from cold draughts or excess of water at roots. They are useless now. Cucumbers delight in heat, shade, and a moist atmosphere.

1683—**Aspect for climbers** (*Zeta*)—It is quite immaterial which side you place the climbers. The only object in putting them upon the north is to avoid undue shading of the sun-loving subjects beneath. The Bougainvillea and Plumbago will need a temperature of 60 degs. to 65 degs. to do them well, but the others you name can be grown in quite a cool-house. Plant the Roses in the border, but the rest will be better in large-sized pots. You must prepare the border by loosening and manuring. Put a piece of board between the stem and pipes.

1684—**Mealy-bug on Vines** (*J. M. H.*).—You must not burn sulphur; the fumes are deadly to all plant life. As soon as the leaves are off thoroughly wash the Vines with some proved insecticide, and meanwhile syringe frequently with soft-soap mixed, at the rate of 2 ounces to the gallon, with water. You must re-paint the Vines again in spring, before they break into new growth, and it will be absolutely necessary to keep a sharp watch against the pest. It is a terrible enemy, and was, no doubt, introduced upon one of the miscellaneous subjects grown beneath.

1685—**Tufted Pansies** (*A. B.*).—Of the kinds sent Numbers 6, 10, 11, 12, 16, 18, and 19 would be worth keeping for exhibition purposes. In reply to your other queries, it is not usual for Violas to come true from seed. We cannot give the information you seek respecting Numbers 3 and 19 without knowing anything of their habit. And with regard to Number 6, although it may be an objection in the florists' eyes, as far as garden decoration is concerned, we know of no reason why the frilled edge should make any difference.

1686—**Treatment of bulbs after flowering** (*Lily*).—You must lift the Dahlia-roots upon the approach of hard weather and store in a dry, frost-proof shed until early next May, when they can be replanted. The Lilies may remain in the open, but a mulch of ashes will be a great help in protecting, and also against the attacks of slugs. Mulch your Vines and bulbs early in the autumn, and do not turn in the surface at all. It is difficult to manage flowers upon a Vine-border, but we have seen such annuals as Phlox Drummondi and Salpiglossis making a really grand show.

1687—**Planting fruit-trees** (*R. E. H.*).—You can move the plants anywhere next month if warm weather does not set in again. November is the usual time. We do not think you will succeed with Ribston Pippin, unless you can get some plants upon their own roots. We have seen some very promising ones in this form in your neighbourhood. Your selection seems good, but do not miss Cox's Orange Pippin from among the Apples. Fruits vary much in different districts, and we are sure you would do better to consult one of the good head-gardeners in your locality, who could tell you the varieties doing well there.

1688—**Spawning Grass-land for Mushrooms** (*A. M. Sharp*).—The proper time to spawn Grass-land for Mushrooms is early in June. It is useless to attempt this now, as the earth is too cold to admit of the mycelium running in the soil. Prepare manure as for an ordinary Mushroom-bed, take up with a spade a spit of turf 6 inches to a foot square, clear out the soil to a depth of 4 inches, and fill in with the manure; in the centre of this place the fourth of a brick of spawn and tread the turf down firmly. A slight slope is preferable to perfectly level ground, and light soil is superior to heavy land for a good crop of medium-sized Mushrooms.

1689—**Clematis Jackmani eaten away** (*Ignoramus*).—It is quite possible that Clematis Jackmani has been eaten by earwigs. They are destructive pests, and scarcely any description of succulent growth comes amiss to them. They may be trapped in hollow pieces of cane, which can be blown out into boiling water each morning, or in inverted thumb-pots, filled with dry hay, or in crumpled pieces of brown paper. An excellent way of destroying them when very plentiful is to lay down a dry sack, lightly folded, near where they accumulate; when shaken out in the morning this will often be found to contain 100 or more.

1690—**Pruning fruit-bushes** (*A. R.*).—Prune as soon as the leaves fall. Red Currants should be cut hard back close up to old stems; no new growth left unless trees need to be extended. Black Currants, on other hand, bear on young wood, not on spurs, so that it is necessary to leave a few inches of shoots of this season's growth; but you may well thin the branches to admit light and air. You may now shorten branches if you desire. Gooseberries are treated much like Black Currants, but they fruit on spurs as well as on old wood. Your wall trees may be shortened as before, say, to within 3 inches; but much depends upon variety.

1691—**Moving Rose-trees** (*On Yon Bonny Banks*).—You must wait until the Rose-growth is matured before moving the plants. We should not use soot upon your peaty and shallow soil, but mulch well with cow or pig-manure and then dig the soil 18 inches deep, mulching well again after planting. Prepare the bed now, and plant as soon as leaf is off. We can give no hard-and-fast rule as regards distance from bush to bush, when such varied growers as La France and Baronne de Bonstettin are named. Put the last 3 feet and the first 2 feet apart, setting the others in at proportionate distances. We received no first sheet to your letter, so are not quite sure that we understand your wants properly.

1692—**Growing Peaches and Apricots** (*North Cumberland*).—Your trees will do well fan-trained, but we do not advise you to grow Apricots in same house; they usually fail unless given special culture. If you grow trees at back your front trees must not shade them; they must not go more than half-way up the roof. On the other hand, your back trees would do best on stems, say, 2 feet or 3 feet, as they will not thrive if shaded, and will do best in shape advised. Make border with good drainage, at least 6 inches of brick-rubble, and add 2 feet or 3 feet of soil, good heavy loam, with mortar-rubble and bones, ½ inch or ¾ inch, made firm; but avoid other manures, or your trees will grow rank and cast their fruit.

1693—**Potatoes for show** (*T. O. H.*).—Two of the handsomest white round Potatoes are Milton's Satisfaction, flattish round, and Webbs' Goldfinder, good round, both white. Sutton's Windsor Castle and Daniels' White Perfection also give very handsome round tubers. Still, all varieties do not do alike in diverse soils, and to have them in mature condition at the middle of August much depends on soil and situation. In selecting show tubers do not be dazzled by mere size. Satisfaction will often throw huge tubers, but the best are those about 8 ounces to 10 ounces in weight, very bright, clean, handsome, and as round as can be. Judges worth their salt now favour medium size and quality, as well as beauty, more than used to be the case.

1694—**Cypripedium spectabile** (*Routh*).—This does best in a moist and partially-shaded situation, though good results have been obtained from plants growing in the full sun. Still, in its native habitat the Moccasin-flower affects shade, being often found flowering in densely overgrown sites. It should do well in a waterside bed of peat, where its roots are kept continually moist. The crowns should, however, be raised above the water-level. A mulch of rough leaf-mould sprinkled over the crowns may be beneficial if they are much exposed, though, as in North America the thermometer often drops to 20 degs. below zero, the hardest frosts experienced in the British Isles should not harm the plants when they are once well-established. Shelter is also an important factor in their success.

1695—**Potatoes for exhibition** (*F. A. T.*).—You will find twelve capital show Potatoes in the following—Kidneys: Snowdrop, Chancellor, Up-to-Date, and Sutton's Reliance (white), with Prizetaker (red). Round: Windsor Castle, Goldfinder, Satisfaction, Syon House Prolific (white), and Reading Russet (red), The Dean (purple), and Conference (mottled carmine). In endeavouring to grow fine, handsome tubers secure early good seed samples, and preserve the tubers in shallow boxes in ample light and air all the winter, and free from frost. If they sprout reduce all in planting to the strongest one only. Have the ground trenched deep, bury manure beneath the top soil, and plant in April in furrows fully 2½ feet apart, casting in with the sets a dressing of soot, lime, and wood-ashes.

1696—**Sowing Broccoli** (*Backward*).—The proper season to sow seed of Broccoli is in the spring. Autumn Giant and Self-protecting, both of which are really Cauliflowers, though often classed by persons as Broccoli, should be sown in April early to have strong plants to give heads from September till Christmas. Two diverse plantings from the same seed-bed at intervals of three weeks do much to give good succession. Seed of hardy Broccoli—Christmas White, Winter White, Mammoth, Knight's Protecting, Model, and Late Queen—should be sown from middle to end of April, and the two last ones even in May, to give succession. All winter Broccoli should be planted in firm soil. You could make even yet a sowing of London or Walcheren Cauliflower-seed in a frame or under a hand-light in a warm, sheltered position, to have plants to put out in April and give heads in June.

1697—**Flowering plants under trees** (*A. M Sharp*).—Try spring flowering bulbs, which will be over before the leaves of the Sycamores shade the border. Snowdrops, Crocuses, Scillas, Chionodoxa Luciliæ and C. sardensis, the Spring Snowflake (Leucojum vernum), Winter Aconite, Anemone blanda, A. apennina, A. Robinsoniana, A. pulsatilla, and A. ranunculoides, also many kinds of Narcissus, N. obvallaris, N. Horsfieldi, N. Emperor, N. Empress, N. princeps, N. maximus, N. Golden Spur, and N. Queen of Spain, of the Trumpet section; N. Stella, N. Cynosure, N. Sir Watkin, and N. odorus Campernelle, of the incomparabilis section; while of the Poeticus type there are N. poeticus ornatus, N. p. recurvus, N. p. florepleno, and N. Barri conspicuus. Plant Myosotis dissitiflora around the Narcissi and you will have a lovely spring picture.

1698—**Treatment of bulblets** (*A. M. O.*).—The Hyacinth and Narcissus bulblets may be planted out in good soil in the open, where they will increase in size. The former will rarely make good flowering bulbs, but will give, as time goes on, flower-spikes useful for cutting. The Narcissus bulblets after two or three seasons may be lifted and repotted. The larger these latter are when planted out the sooner will they attain flowering size. The South African bulbs should not be planted in the open ground, but be potted in good, porous soil and kept in the greenhouse. Some of these Cape bulbs often take as long as three or four years before they flower. Cuttings from the evergreen shrubs should be taken from well-ripened shoots and placed round the edges of a 6-inch pot, which should be kept in the greenhouse until the cuttings have rooted, when they can be transferred to single pots and pinched back, thus inducing a spreading growth.

1699—**Gloxinias.**—Would it be safe to shake Gloxinia and Begonia tubers out of the soil when the foliage has died off, and store them in dry sand in a warm cellar where temperature never falls below 40 degs.?—Achilles.

*** *A really good plan, and the situation most suitable.*

1700—**Cutting back "Geraniums."**—I kept my "Geraniums" in a room last winter; they were then small, but have grown a good deal this summer. Should they be cut back, and if so, before or after I pot them for winter?—M. F. W.

*** *If the plants are small, pinch out the extreme tip in preference to cutting them back. This would be a pity, as you would lose much winter bloom.*

1701—**Hybrid Sweet Brier.**—I am thinking of planting two or three bushes of these, but only one variety. Which would you recommend as being the best all-round for flowering and for fragrance of foliage? I am told Lady Penzance is the best in this respect. Is this your opinion also? Or which one would you recommend? Are these hybrid Sweet Briers as fragrant as regards the foliage as the ordinary Sweet Brier?—Fritz.

*** *Far more fragrant than the ordinary Sweet Brier. It depends upon colour wanted, as to the most suitable variety. Lady Penzance is a coppery-salmon, but Jeanie Deans, a semi-double red, is a favourite.*

1702—**"Geranium" cuttings.**—I have some "Geranium" cuttings in pots (looking healthy), eight and ten in each (6 inch). When should they be put into single pots?—L. T.

*** *Re-pot early in February next, using a compost of rich loam and leaf-soil. Store upon a shelf, give plenty of light, but little water.*

1703—**Roses.**—Will you please give me the names of three of the best red standard Roses for outdoors? Also the three best bush Roses, also for outdoors, and all must be sweet-scented?—L.

*** *General Jacqueminot, Charles Lefebvre, and Duke of Edinburgh are very suitable for standards, while A. K. Williams, Prince C de Rohan, and Alfred Colomb are sure to please as dwarfs.*

1704—**Diseased Tomatoes.**—I grow about sixty Tomato plants each summer, and have done moderately well with them; but this year I have a lot of fruit which is soft and hollow, the largest being the worst. I have had some as large as a cricket-ball, and they look nice, but when I cut them open there is hardly anything inside. I water twice a week with weak liquid pigeon-manure from a large tub. I keep a nice heat at night, and ventilate freely in the day. The plants are Challenger and Dobbie's Conference. If you will answer my question through your correspondence column I shall be very much obliged?—W. Harris, *Outwood.*

*** *We expect your plants are suffering from the Tomato disease. It is a terrible pest, and there seems no remedy that is sufficiently sure and simple to be worth keeping the plants when once attacked. We could reply more definitely had you forwarded a fruit and leaves.*

1705—**Greenhouse plants for show.**—For July next year I wish to compete in our flower show with an amateur's group of greenhouse plants, to cover a space of from 16 square feet to 20 square feet. What will be the best plants to get for the purpose? I have cold-frames and a greenhouse, heated just to keep out frost.—George Dickson.

*** *Francoa ramosa, Abutilons, Ferns, and Mosses in variety, a few small Palms (such as Latanias, Arecas, and Kentias), Aralias, Hydrangeas, and Dracænas might be used, but it would be much better for you to take note of winning groups and select plants accordingly; they are far too numerous for us to give a full list.*

1706—**Transplanting Vines.**—I have an old vinery which I am told is unsafe. It seems a pity to lose the Vines, which are well-established, and bear excellently. Will they bear transplanting, or is there any means of saving them?—A. E. P.

*** *You would not do much in transplanting well-established Vines. Cannot you strengthen by using an extra purloin or two? We should ask a local builder to look at it. But your Vines would not hurt during the exposure to weather necessary while rebuilding.*

1707—**Fuchsias flowering badly.**—I have some Fuchsias which have been in the conservatory during the summer. They have bloomed badly, grown very straggly, weak, and look sickly. They are not large plants. How should I treat them to make good-flowering plants for next summer?—Fuchsia.

*** *Gradually withhold water until the plants die off, then store beneath a dry bench until next February or March. Shake away all old soil, repot into a much smaller size, using a compost of light leaf-soil, loam, and a little coarse sand. Keep in a strong light, allow them to break steadily, and when full of roots repot into a richer soil. Pinch out the points of first growths, when about 3 inches long, and so get a sturdy and well-shaped plant. They enjoy a partial shade, but must not be kept beneath other subjects.*

1708—**Creepers for wall.**—I should be glad if you could tell me the names of some creepers to plant on a house wall to train up wires, also some to train themselves without any fastening or nails? I don't want to plant Ivy. The aspect is south and west, a cold situation and exposed to winds.—G. H. B.

*** *There is nothing better than Ampelopsis Veitchi, A. Hoggi, and A. sempervirens as self climbers. Upon the wires, you can select from Clematises, Ceanothus, Climbing Roses, Honeysuckles, Jasmines, Passion-flowers, Wistaria sinensis, and the Pyracanthas.*

1709—**Plants for London greenhouse.**—I have a greenhouse in London with east aspect, no heating, but hot in summer. What Roses could I train on walls, and what plants would live and thrive best?—Baroness.

*** *Climbing Niphetos (white), William Allen Richardson (orange-yellow), and Reine Marie Henriette (red) are all suitable Roses for such a house. You do not say at what season you wish your house to be at its best; nor whether flowering subjects are needed entirely. There are so many of each section that would thrive with you that we shall be obliged if you will kindly state your wishes more definitely.*

1710—**Virgin Cork in greenhouse.**—I wish to conceal the flower-pots in my greenhouse with Virgin Cork, over which I intend to have hanging and creeping plants. How can I best arrange this? I have procured 1 cwt. of the Cork. Is it used dry, or must it be soaked previous to nailing, as some of it curls round and would be difficult to nail flat?—Zeta.

*** *Moistened Cork is better to fit, but you will need to cut the edges of some pieces, and will find it well to have a heavy knife frequently dipped into hot water. Surely you can choose pieces suitable without any nailing? We should rather see the edges of the bench so covered. The pots need frequent moving, and this would be awkward.*

1711—**Barren Fig-tree.**—The Fig-tree on the garden wall is sheltered with glass top. I have had it nine years. It is large and handsome and beautiful foliage. It is well manured. Why will it not bear Figs?—ONICH.

*** *In your case we would root-prune. Omit manures; barren trees should not be fed. Root-pruning will be best done now and with care.*

1712—**Pyramid Pear-trees.**—I am moving to a garden, soil very sandy, and there are some old pyramid Pear-trees, some 12 feet high and nearly as much through, solid pyramids of small branches and leaves, which have had no attention for many years. How should they be treated to bring them into bearing, a thing which I fancy they have not done for some time?—M.

*** *Our advice is to thin out small or crowded wood. Soon as leaf falls give more light, not head down but well thin, and shape trees a little when thinning.*

1713—**Growing cut flowers for market.**—Will you be kind enough to tell me what bulbs will be best for me to grow for cut flowers for market, both in pots and the open ground? The ground is very heavy and wet. Also, when will be the best time to put them in?—YOUNG BEGINNER.

*** *If you will be advised by us you will not attempt growing bulbous cut flowers for market. Those that are simple to cultivate come in large quantities from warmer climates now that transit is so improved, and it cannot pay to grow them here against such competition.*

1714—**Planting Iris anglica La Jolie.**—I have purchased a quantity of Iris anglica La Jolie, and should be much obliged if you would inform me how and when they should be planted and a suitable treatment? Could the bulbs be planted in clumps of 25 together, and would a shady place in a rockery suit them, or would they do better in a sunny position?—INTERESTED.

*** *A light and rich soil that is naturally well drained suits these best. They may be planted in clumps now or early in February. There is little choice. A sunny position, sheltered from east winds. A shady spot in a rockery would not do; but a dozen or so might be placed in a clump if given a sunny spot. Do not plant deeply nor disturb more than can be helped.*

1715—**Moving Hollies.**—Kindly inform me whether now or in the spring is the better time to remove Hollies?—SOMERSET.

*** *We prefer early spring, as the Holly is then ready to commence new growth. If you shift them now, and it should be at all dry, as it is beneath trees, they may lose leaf and be partially bare all the winter.*

1716—**Gladiolus not flowering.**—When should Gladiolus The Bride flower? I have had some bulbs in a pot two years; the green stalks came up in the spring, and now have turned yellow, but I have had no flower on them. What can I put to them to make them flower? Since the foliage has turned brown I have ceased to give them any water. Should I commence giving them some again?

*** *These flower almost all the year under glass by bringing them on in succeeding batches. In the open they were well in bloom with us during the middle of July. Probably your bulbs are not strong enough, or you do not afford them sufficient rest to procure proper ripening. They need little, if any, water at present.*

1717—**Bamboo not flowering.**—I have a Bamboo-tree, 12 feet high, with a great many stems, which I planted about 20 years ago. It has never shown signs of flowering. It was told me that many years ago most of the Bamboo shrubs in this country flowered and then died off. Is this correct? Does the tree ever flower? If so, can the tree be saved by cutting the flowers off at once?—A CONSTANT READER.

*** *It is a peculiarity of Bamboos that each culm or stem only flowers once. They do not often reach this stage here, and the loss of a few culms or rods would not kill the plant, as more would push out from the base. There is no beauty in the blossom.*

1718—**Cucumber-seed.**—What is the best method of fertilising and saving Cucumber-seed?—ACHILLES.

*** *You might transfer the pollen with a camel-hair brush. You will need to select the few best-formed fruits for seed purposes. When it is seen which these are limit the number, and so secure better matured seed. Clean the seed with soft sand and water, finally polishing them a little with a few drops of milk.*

NAMES OF PLANTS AND FRUITS.

Names of plants.—*F. Devereux.*—No. 1 is one of the Daturas, but No. 2 is unknown to us in the condition received. A single leaf is rather an unfair test.——*W. T. Brocklehurst.*—White Monthly Rose.——*Tuberose.*—1, Adiantum Sanctæ Catherinæ; 3, Lonicera japonica aurea; 4, Cratægus pyracantha; 5, Not recognised; 6, Brugmansia Knighti.——*M. B.*—1 and 3, Pteris tremula; 2, Pteris scaberula; 4, Woodwardia radicans; 5, Thunbergia; 6, Polygonum cuspidatum.——*C. Smith.*—We do not answer anonymous queries. Please read our rules.——*Henry Grainger.*—We do not name florists' varieties.——*W. Holmes.*—I, Lychnis chalcedonica; 2, 3, and 4, Send better specimens.——*Somerset.*—Montbretia Pottsi.——*W. Grapes.*—Please send again.——*A. Davidson.*—1, Aster acris; 2, Cypress Spurge; 3, Leaf of a Lungwort (Pulmonaria), but we cannot well name these things from a single leaf.——*J. B.*—1, The Sweet Alder; 2, Hellanthus decapetalus; 3, Lysimachia clethroides; 4, Arenaria; but the flowers are not in a state for us to determine the kind.——*Mrs. Thomson-Sinclair.*—It is a small Golden Rod, but there are no flowers to help us.——*Mrs. Stallard.*—Cratægus pyracantha.——*Lavender.*—1, Anemone japonica alba; 2, Cotoneaster microphylla; 3, Spiræa callosa; 4, Elæagnus (species); 5, Polygonum cuspidatum; 6, Thujopsis dolabrata.——*A Reader.*—Kindly comply with our rules. We do not name specimens sent anonymously.——*Mrs. Bushby.*—Phytolacca decandra.——*A Constant Reader.*—Phlebodium aureum.——*Jas. Skekelthorpe.*—Colchicum autumnale.——*G. Chapman.*—We cannot name florists' flowers.——*M. B., Thorncliffe.*—No specimen was enclosed. Kindly read our rules *re* answering by post.——*A. B. C.*—1, Cerastium tomentosum; 2, We do not name florists' flowers.

Names of fruit.—*Gorse.*—It is utterly impossible for us to name fruit from such undeveloped specimens as you send.——*W. H. H.*—Pear Jargonelle.——*B. Hewlett.*—Apple Lane's Prince Albert.——*A. E. P.*—Apple Stirling Castle.——*A. G. T.*—Pear Beurré Superfin.——*J. C. Bowdon.*—Apples: 1, Norfolk Beaufin; 3, Not recognised; 4, Golden Noble. There was no number 2 in the box received.——*Cleeve Prior.*—Kindly send again when ripe, and not less than two specimens of each kind.——*John Ackland.*—Peach Salway.——*J. Blunt.*—It is a very good type of Perfection.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Planting queries (*Nidum*).—We cannot trace your queries. Probably, if they were sent in the same anonymous fashion as your postcard, they were thrown into the waste-paper basket. Kindly write again and authenticate your letter with your name and address.

R. J. S.—It is impossible to say.——*R. S.*—Yes.——*S. Jones.*—We do not reply to anonymous queries.

Catalogues received.—*Bulbs.*—F. G. E. Bonnett, Heathfield, Sussex.——*Bulbs.*—Edmondson Bros., 10, Dame-street, Dublin.

CARNATION AND PICOTEES.—20,000 fine layers to offer, best border varieties, 4s. dozen; 30s. per 100; extra fine varieties, including yellow grounds, flakes, bizarres, fancies, and selfs, 6s. 6d. dozen; 45s. 100. Satisfaction given. Catalogue free.—JOHN PRICE AND SON, Kingstanley Nurseries, Stonehouse, Glo'shire.

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GARDENING ILLUSTRATED.

No. 968.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* SEPTEMBER 25, 1897.

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SOMETHING ABOUT LAWNS.

So many queries have reached us of late respecting the lawn that we have pleasure in giving a few additional notes. It is quite impossible to reply as fully as would be necessary to the many who ask, practically, the same questions, in our correspondence columns, but by dividing the subject into a few brief paragraphs we hope to give all the information needed. Generally speaking, it is the renovation of a lawn that is most desired.

Mossy lawns.—These are caused by poverty of soil and by over-dampness. Both are easily remedied. If from dampness, it is obvious we must drain before any measures can be of lasting effect. In many instances it is only necessary to put in a few small drains a foot or so below the surface. It may also happen that the excess of water is easily turned by merely draining at the top of the lawn, more especially so when a level piece has been formed upon naturally sloping ground. The surface water from above accumulates upon the tennis or croquet lawns, soddens it, causes Moss and coarse Water Grasses to grow, and generally takes away the beauty and pleasure of what might so easily have been a nice piece of green turf. By what means a lawn should be drained must depend entirely upon the surroundings and depth of soil. When Moss is caused by poverty of the ground, we cannot do better than dress with stable-manure, where peat-moss-litter has been used. Put this on after having raked off as much as possible of the Moss. Another good plan is to dress with a little lime and decayed vegetable refuse, doing this in autumn and early spring. No lawn dressings of this description should be heavy or coarse. An inch or so is ample, and if well swept and rolled a few days afterwards there is scarcely any disfigurement.

Bare places are often caused by Moss, especially beneath trees and near to high hedges. Here, again, poverty of soil is the chief cause, and the same remedy may be applied. In addition to this we may sow a little lawn Grass mixture, and must continue to feed this for a time. Beneath overhanging trees, especially the Beech, drip from the branches has a bad effect when taken in conjunction with soil exhausted by the surface roots of the trees. It is absolutely necessary to feed with surface dressings in these cases.

Weeds.—These are a great nuisance. Dock, Dandelion, Plantain, various Yarrows, and Buttercup are among the worst; Daisies are not so much a disfigurement where a lawn is kept constantly and closely mown. Still, we would rather be without them. Many of these weeds, as well as coarse-growing Grasses, are introduced to the lawn by seed from neighbouring plants, so that we need be careful in this respect. Indifferent turf, in the first instance, or impure seed when sowing instead of turfing, are also causes of these noxious weeds. If very bad I would take up the turf thinly, carefully gouge out the roots of tap-rooted weeds, and either re-turf with Grass free from their presence, or lift the soil slightly—such as a deep hoeing—and sow a good mixture. But we shall say more about seeds presently. If the soil is not deep enough give a layer of good garden loam, and take advantage of the opportunity to make the new lawn level—that is, if it is to be used for tennis or croquet. Even without this a perfectly level portion has a good effect. It is only upon large lawns that we can get the charming slopes and undulating sweeps which invariably look well. There are several very handy tools advertised that will do capitally for gouging out Plantains, Daisies, and such like. If a lawn be well kept and fed very few weeds will have an opportunity to come up from seed. It is when poor and neglected that these have any chance to gain a footing; in other conditions the Grass chokes them while germinating. Do not be led astray by so-called weed or Daisy eradicators in the way of sands and other dressings. Any dressing of sufficient strength to do this must necessarily hurt the finer Grasses as well.

Selection of turf.—How to make a lawn cannot well be described in these notes. So much depends upon circumstances that to treat the subject in a serviceable way would extend our article to too great a length. But it is so essential that a good turf be chosen at first that we must refer to this. By far the best turf is that from a park or pasture of many years' standing, more especially so when deer and sheep have fed upon it for a long time. You will find no coarse Grasses here, nor objectionable weeds, and with a very little care an established and glossy lawn is obtained. Of course, a piece of coarser turf can be brought into condition by perseverance and time, but, unless I could select a good one at the outset, I would much prefer to rely upon

Grass-seeds.—It does not take long to get a really good lawn from seed, and in many cases this is much the quickest way. As a rule, a good mixture of lawn Grasses is best; but, as some do better upon one soil than another, it is always advisable to state the nature of your soil when ordering the mixture. Whatever the mixture, add a little more White Dutch Clover. This is rather an expensive item, and so does not get used so freely in the usual mixtures as it might be. Half an ounce more to the quart of mixture will be ample. If you are merely sowing seed to help a thinly-clothed lawn, a pint will be sufficient for 300 square feet, but rather more than double this quantity will be needed for one to be obtained from seed alone. The ground should be lightly moved first, raked over, and rolled down; then sow the seed broadcast and evenly. It is a much better plan to go over the ground twice, and so secure a more uniform distribution than endeavouring to sow all at once. The seeds are of such varying weight and size that they should be constantly stirred over during sowing, if you wish for even distribution. The extra amount of Clover recommended may be sown separately, it being so much the heaviest. Mixing this with a quart or two of sand and then sowing the whole is a good plan; it is easier to handle and apportion. Roll the whole once more, but take care not to do this when the soil is in such a condition that any sticks to the roller, or many of the seeds are certain to be taken up also. Seed should be sown during showery weather, or, as nearly as one can judge, just previous to a shower. Stretch a few pieces of thread across and across, or birds will soon pick out the plumpest and best seeds. As soon as the Grass is 2 inches high roll again slightly, and when it comes up again about 3 inches give the first cutting, but take care not to "set" the machine too low. Only the tips need removal at this stage.

Rolling, sweeping, and cutting are necessary, according to the strength of Grass. You will seldom do much harm by rolling and sweeping. It helps to keep a gloss upon the Grass, presses down worm-casts, and keeps the whole clean and tidy, without which even our best lawns are far from pleasing to the eye or foot.

Dressings.—It does not so much matter what these are. We must remember that a close turf, probably undermined by roots of trees, must become more or less injured. No animals are feeding upon it and leaving their droppings in compensation; nor do we even allow the decay of Grass to form its natural food, but carry the growth away as soon as formed. Yet few persons think a lawn needs much food. Soot is admirable, especially upon heavy soils. It need not be objectionable if applied late in autumn or early spring. Wood-ashes, again, are among the very best, and may be applied at any time. Guano, Clay's fertiliser, and other artificial manures can be put on at any time during or just previous to a shower. These are washed in at any time, and give no unpleasant after effects. Loam, decayed vegetable refuse, and a little thoroughly rotten manure where peat-moss-litter has been used, are all excellent. In every case it is well to sweep well a few days after application, and none should be applied coarsely or too strong.

Finally, do not forget that in the winter a lawn needs quite as much attention as in summer, especially as regards sweeping. And is not the lawn one of the most pleasing features seen from the house during the dull winter days? P. U.

Sedum Fabaria. — This old-fashioned plant makes a charming bed when left undisturbed, and flowering as it does in the autumn it is doubly valuable on that account. It is a very hardy subject, passing through the severest of winters unscathed, and in spring sending up plenty of its succulent shoots well clothed with glaucous foliage, each one of which is crowned with a good large head of pretty pink blossoms in the autumn. Its culture is of the easiest description, and it is not at all fastidious as to soil, but at the same time the better the quality of the soil within reason the finer the flower trusses. Propagation is easily effected by division of the crowns, one good-sized root when split up making as many as five or six plants. This should be done in the autumn as soon as the plants have done flowering, and if planted where they can remain undisturbed for several years they will not fail to give satisfaction. It is a good plan to cast a little fresh soil among the crowns after cutting away the old flower-stems, which prevents them from becoming unduly exposed, and also presents a neater appearance.—W.

FERNS.

RAISING FERNS FROM "SPORES."

By far the best way of increasing a stock of Ferns is by sowing the "spores" or seeds, as they are sometimes called, and also there is a good deal of interest in this method, because there is always the chance of some interesting novelty being produced, which cannot be obtained if the plants be propagated in any other way. A general rule in raising Ferns of any kind from seeds is to keep the temperature as even as possible, and also the atmosphere moist. As regards the spores themselves, they should be collected as soon as they are ripe, and be carefully stored in a dry place until sown in the early part of the year. In the case of the

Hardy Ferns, I have found that, although these germinate more rapidly, and also take less time in producing young plants when sown in heat, it is not at all necessary to have any artificially-heated place in which to grow them. If procurable, take a good turf of fibry loam, have it soaked in water for a sufficient time to get it well saturated, and after that let it drain thoroughly; it will then be fit for use. If fibry loam is not procurable, take peat, silver-sand, and potsherds, or soft brick, broken small. Mix all well together, then put in a shallow pan or pot half-filled with crocks; these latter should be covered with a layer of fibrous peat or Sphagnum, and the whole should be well watered; when thoroughly drained the seeds may be sown. These seeds or spores, being exceedingly minute, should not be covered with soil, but simply with glass—a bell-glass for loamy turves and flat glass for pans. The pans or pots, when freshly sown, should be placed in a shaded but not dark corner. Under the stage of a greenhouse, if available, is a good situation for them, and there they should remain until the young seedlings show their first fronds. The material on which the spores have been sown should not be watered on the surface, but it should be kept constantly moist by occasional partial immersion—that is, by allowing the lower part of the pans or pots to stand in water until sufficient moisture has been absorbed, but it should not in any case remain altogether in water. The first sign of vegetation greatly resembles the common Liverwort, and care must be taken not to scrape it off the surface of the soil, as it is from this singular growth that the Ferns will spring, in (according to the different species) from three to six months. They must then be pricked off in small tufts so as to give them room to develop themselves, as they generally come up very thickly, and, if allowed to crowd and overgrow each other in the seed-pan, they are very liable to damp off. When pricked off they should for a few days be treated very much as before, and should be gradually inured to the air by tilting the flap covering on one side, and in a short time it may be removed altogether. When the seedlings begin to produce fronds, and are sufficiently strong to be handled easily, they should be potted separately in small pots, and, on account of their tenderness at this stage, it will be necessary to keep them until perfectly established in a rather close atmosphere, well-shaded from the sun and carefully watered. The manner of raising

Greenhouse Ferns is not materially different from that applicable to the hardy kinds. The chief divergence lies in the preparation of the compost used, as, instead of the spores being sown on a tuft of loam, it is found to be best to make use of a mixture consisting of one part loam, one part peat, or well-decayed leaf-mould, and one part silver-sand and soft brick, broken up quite small; the whole should be well mixed together, and either baked or boiled before use, in order to kill any germ of Moss or other unwelcome growths that it may contain, which might smother the young Ferns as they come up, and also to kill any slugs, worms, or insect larvæ which may be present in the mixture. Although spores of greenhouse Ferns may be sown at any time of the year, the best season is early in the spring—that is, during March and April—as seedlings raised then have, if properly treated, sufficient time to form crowns strong enough to stand the following winter; if sown later, although the spores come up equally well, the young plants run the risk of being killed during the first winter. To avoid that the spores, which are generally ripe in autumn or winter, should be collected carefully and kept in paper in a dry, but not warm, place till spring. They should then be sown in either pots or pans, prepared as for hardy Ferns and subjected to the same general treatment, with this difference, however—that instead of being put into a cool place after sowing they should be put where the temperature can be maintained evenly about them at, say, 55 degs. When the young seedlings are pricked off in a soil mixture similar to the one in which they were sown, they should be kept afterwards for three or four weeks in a close, shady place where the temperature ranges from 60 degs. to 65 degs., and gradually hardened off by tilting up the glass or glasses with which they are covered more and more every day until they can be taken off altogether. In the case of

Stove Ferns, the course just described may also be adopted with advantage, the only material difference being the temperature, which, though similarly uniform, must of course be higher throughout than that for greenhouse Ferns. It should average about 70 degs A close, moist, propagating-case will suit them, and as soon as they are fairly up, and even before the young fronds are developed, they should be exposed to light; for that reason they cannot, like the others, be kept under a stage in the warm-house. But, as to all other directions respecting soil, potting material, early pricking off, watering by immersion, and gradual ventilation by tilting up the glasses used for covering, the same rules as those observed in the case of other kinds should be strictly adhered to. Thus treated, young seedlings sown in March, for instance, will by winter have produced crowns of sufficient size to enable them to pass through the dull months of that season in safety. Many more or less ingenious ways for sowing Ferns have at different times been advocated by persons more or less practical, some even going so far as to recommend their being sown in prepared flannel; but, provided that the materials above named are of sound quality, no fear need be entertained, with due care, as to the success of the operation. Adiantums, Pterises, Gymnogrammas, and Lastræas come up freely in the course of a few weeks. The much admired

Filmy Ferns are exceedingly slow in producing their first fronds, therefore they require a compost which lasts a long time in a fresh state, and also a place in which they can remain undisturbed sometimes for years. I have known seedlings of Hymenophyllum to keep for five years in what is called the "prothallium" state, and the Killarney Fern (Trichomanes radicans) will often remain for years in a most diminutive state. Trichomanes and Hymenophyllums, therefore, must not be included amongst Ferns which are best propagated by spores; on the contrary, they increase more rapidly by means of division. Todeas, however, which belong to the same class can be propagated by spores only. The stock of these lovely plants in this country was only kept up by frequent importations until a comparatively recent date, when, however, seedlings were freely raised by some of our leading nurserymen; even then, however, the seedlings required several years of careful and constant nursing before being saleable. No more conclusive evidence of the value of raising Ferns from spores could be found than the fact that market growers so largely raise them in this way. Their mode of procedure is of the simplest character. The spores of the different species to be propagated are collected when ripe, and sown broadcast on the surface soil of pots containing plants of slower growth, such as Palms, which, not requiring fresh potting often, give the spores a fair chance of germinating, and of even producing small plants. The latter are pricked off either in boxes or pans, from which, when they have made from three to six fronds, they are taken and potted singly in 2½-inch pots; in these vast quantities of Ferns are disposed of annually for the ornamentation of dinner-tables or the decoration of dwelling-rooms, for which purpose probably more Ferns are grown in this country than any other plants. Market growers' kinds belong to a different class, perhaps, from those which an amateur might like in some cases, but they are all showy, robust sorts of rapid growth. The market grower, therefore, generally limits himself to a few species of Ferns, notably Adiantums, Pterises, Nephrodiums, Cyrtomiums, Lomarias, Polypodiums, Lastræas, etc, but these he grows to perfection, and in an almost incredibly short space of time. These young Ferns, which yearly abound in Covent Garden and other great plant and flower markets, are in the main raised from seeds or spores.

H. B.

TUFTED PANSIES (VIOLAS).

Saving the seed.

At the present time the plants should be developing a number of seed-pods, some varieties setting more freely than others. During the last few weeks fertilisation has been carried out by insects to a very large extent, so that we may gather those seed-pods which we are quite satisfied are fully ripe for picking. Those who have been unable to artificially fertilise their flowers would do well to gather only those seed-pods which have ripened on sorts of the best kind. A wise selection in this way may very materially enhance the chances of raising from the seed a progeny of which one may well be proud. Therefore, confine the selection to those sorts possessing a nice compact and dwarf habit, combining with these qualities flowers of pure colour and good form. The weather may retard the proper ripening of the seed-pods, but it is safe to state that these may be gathered when the pod is in the straight with the flower-stem. In the early stages the seed-pod is hooked well under; but as the ripening is progressing this gradually becomes raised, until at length the point of the seed-pod is pointing out straight from the end of the flower-stem. As the seed-pods mature they generally assume a brownish shade, and are quite firm to the touch. Some varieties burst before they reach this colour, so that a little judgment becomes necessary. When, therefore, the seed-pods are quite ripe, let them be gathered and spread in shallow trays, saucers, or boxes, and placed in any sunny position. A very good position is that of the greenhouse shelf, where the finish of the ripening process may be carried out with ease. Some seed-growers advocate placing muslin over the trays as a cover, and to prevent the loss of seed when the seed-pods burst. This is a very good method, but a better plan is that of covering the trays with pieces of glass, the action of the sun on this assisting the pods to mature; and as there is always a number of small outlets for the moisture to pass off, the drying proceeds comfortably, and the seed-pods burst, the seeds invariably detaching themselves from the husks absolutely, afterwards rendering the separation of the seed from the husks a very simple matter. By keeping the glass as a cover no loss of seed occurs. In this position they are kept for some little time, until at length the seed is thoroughly cleaned, and stored away in a dry position until the spring. My reason for bringing the question of seed-saving into notice is the unfortunate habit of so many growers in picking off the seed-pods before they are ripe, and throwing them with the spent blossoms on the rubbish heap. A little pains taken in the choice of selection should provide a most interesting and pleasant occupation of raising seedlings in the spring, when it is quite possible to bring into existence a variety or a number of varieties that may be considered a distinct advance upon those sorts already in cultivation.

D. B C.

Helenium autumnale superbum.—Under the above name I lately saw some nice plants growing in pots. It appeared to be a great improvement on the normal form, and I should think it will be a most useful plant for decoration at this season of the year. The plants referred to were of various sizes; one in an 8-inch pot with a single stem about 3 feet high had a very large terminal panicle of soft yellow flowers, spreading out fully 18 inches and as much in depth. Other dwarfer plants with several stems had smaller panicles. It appears to be free growing and easily increased. —A.

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FRUIT.

THE AMATEUR'S VINERY.

Few better horticultural pursuits in which the amateur can obtain pleasure, and at the same time a return to compensate him for trouble bestowed, will be found than Vine-growing. This needs a house in which the Vine is the principal occupant, as shown in the illustration, and much may be done with a small house if the right sorts of Grapes are grown and a little attention is given to culture. Though the question of variety is very important, it is more necessary to pay sufficient attention to culture, for many fail through overloading their Vines with food and cropping much too heavily in a young state. This latter is fatal to good culture, for although the Vines when young will finish a very full crop, this will only last a time, and in the end the plants will succumb.

The two varieties shown in the illustration can be grown by any amateur. These are the Black Hamburgh and Foster's Seedling, the first

A vinery of Black Hamburgh and Foster's Seedling Grapes.

a black, roundish berry, the latter a white, oval-shaped fruit, differing with good culture, as at times it assumes a rounder shape, with a beautiful amber colour, and is one of the best White Grapes on account of its free-bearing and good qualities. The Black Hamburgh has one fault—it is too prolific in bearing. Amateurs and others allow it, when young, to bear too freely. This is a stumbling block to many, for a Vine fruited too freely in its early days, before there are sufficient roots to bear the strain, loses its roots later, and then shanking or decay of the berries follows. I have seen these Grapes grown so well by amateurs, who had the courage to fruit small or young Vines at first, that they were the admiration of clever growers. When once the Vine has made ample roots, and become established, there is less danger, as the plant makes more roots yearly, and these support the new growth; whereas it is the reverse with new or young Vines, for these, if over-cropped, lose the few roots made. To sum up briefly, there must be plenty of roots and a liberal top-growth before fruit can be borne in quantity.

The varieties named above are what may be termed safe varieties, those that succeed best with less care in ordinary soil which may be within the amateur's reach. Much depends upon the way the Vines are grown, and, doubtless, the best Grapes are secured from inside borders; but for amateurs who only have a small house, and who grow plants also, I would recommend an outside border, as the roots are less injured by too much water, and are readily fed during the growing season. For very early Grapes inside borders are a necessity, but I do not think it advisable for the amateur to grow these until he can master the ordinary culture, and have ripe Grapes from July or August till the end of the year. Of course, both the varieties noted above are not what are termed keeping Grapes, and though there is no difficulty in having them till Christmas, or later if placed in bottles, the Hamburgh, when left on the Vine a long time, loses colour and gets a reddish tint, though the flavour is little affected. By having two lots of Vines or houses one can have the second house much later, and there are other advantages with the kinds named. They may be grown without heat, which is a great gain to the amateur, and if started, say, in April, or what is termed naturally, only depending on the sun's rays, there will be ripe Grapes in August or September. Last season I had a 3 lb. bunch of splendid Black Hamburghs given me by an amateur, cut from Vines which had borne well annually for twenty-one years. They were perfect in colour and finish, but he cropped carefully, and every few years ran up a new cane from the base, cutting away an old one. Many growers think they cannot overfeed. This is a mistake, and my advice is to feed from May to the time the berries are colouring, but do not dig about the roots and do not crop the soil over the roots. Food given in the way of liquid-manure or surface dressing is best, but space does not permit my going more fully into this matter. My advice is to feed only when growth is able to absorb the food. W.

Gooseberry-bushes. — Looking over a large break of yearling Gooseberry-bushes recently, the owner stated that he had an order for 25,000 from one market-grower, and that his price was £3 per thousand. I did think that, considering the plants were on the ground for one year only, this was a fair price, and that it represented, where the take was good, some £60 per acre return. There seems to be an opening for the production of good class bushes for market sale, as the demand yearly is very great, and very often cannot well be met. A few good varieties, such as Lancashire Lad, Crown Bob, Whinham's Industry, Keepsake, etc., are those most in demand. The intending raiser of young bushes should be himself a grower of Gooseberries for market, doing his bushes well, as then he can command cuttings in plenty. Three or four-year-old bushes, as a rule, give the best shoots, but older ones will do well if kept thin by pruning, and clean, also well manured, and at least have the bulk of their fruits gathered green, so as to relieve the bushes early. Cutting making should not be left until the ordinary winter pruning, as that is usually done in frosty weather. The moment leaves begin to fall is the time to commence taking cuttings, which should be of good length and stout, as, to secure good bushes on fairly tall clean places, the shoots should be strong. Cut and tied into bundles and carried into a shed, the process of making should at once begin, making a clean level base, cut close under a leaf-bud, and shortening back the top, so as to leave a cutting from 10 inches to 12 inches long, then removing all the leaf-buds but the top four. So soon as a quantity is prepared they should be set at once into soil that has been deeply worked and moderately manured, being fixed in the ground fully one-third their length, and firmly, so that frost may not lift them should it be severe. Such cuttings soon make roots.—A. D.

FIGS IN THE OPEN AIR.

Although the Fig cannot be said to fruit at all freely in the open air in this country—speaking generally, that is to say—even when afforded the shelter of a wall, yet in the warmer parts, and particularly along and near the south and south-western coasts, it succeeds admirably, and affords abundant crops of well-ripened fruit. A good many of the numerous failures experienced are, however, doubtless due to errors in management, mistaken ideas as to pruning, a too rich soil, etc. Now, Figs do not require a rich soil, unless vigorous growth and luxuriant foliage are alone required, a fruitful growth being principally promoted by a firm and rather poor root-run in a sound, loamy soil, preferably of a calcareous description. Where this does not already exist much the same results may be secured by mixing a quantity of old mortar rubbish, spent lime, crushed bones, or chalk with the staple. Little or no manure is required, but liquid-manure may be given beneficially while the trees are swelling a crop of fruit, especially when this is a heavy one.

In pruning, the long, straight, sappy shoots, which are freely formed by over-luxuriant trees, and are useless for producing fruit, must be removed, or at any rate severely checked, and the short, twiggy growths, upon which the fruit is chiefly formed, be carefully preserved and nailed in. Large, old trees in warm and sheltered positions usually bear freely with little or no care, but in dealing with young examples all the points mentioned above deserve attention.

Here, in West Sussex, south of the Downs, in a warm and dry climate, and soil of a similar nature, Figs succeed admirably in the open air, frequently producing two crops of ripe fruit in the season. I have already (the last week in August) gathered the first crop from a large old tree, some 20 feet in diameter, in the open, some of the ripe Figs being quite as large as a good-sized "William" Pear, and the second crop, consisting of several hundreds of fruit, now about the size of a bantam's egg, is rapidly swelling up, and if the autumn proves fairly fine and warm will yet become ripe for the most part. At the village of Tarring, near Worthing, there are extensive Fig-orchards of great antiquity, which used to be a source of considerable profit to their owners, but, like everything else in these degenerate days, the returns have fallen off greatly of late.

The Fig is one of the best of all town trees or plants, thriving in even the most smoky districts, and the foliage being exremely handsome. B. C. R.

ROSES.

Tea Roses for Hornsey.—Will you please advise me as to Roses most likely to thrive under following circumstances: Ground situate at Hornsey. West frontage, with plenty of sun. Soil rather heavy. Clay subsoil, well drained. I would prefer Teas.—AMATEUR.

*** You might grow any of the following twelve Teas: Anna Ollivier, Corinna, Mme. Hoste, Dr. Grill, Elsie Fugier, Francisca Krüger, Edith Gifford, Mme. Lambard, Marie Van Houtte, Bouquet d'Or, William Allen Richardson, and Emile Dupuy; the last three are climbers. The following H. Perpetuals and H. Teas are also very suitable: General Jacqueminot, Mrs. John Laing, Duke of Edinburgh, Alfred Colomb, Boule de Neige, Mrs. R. G. S. Crawford, Viscountess Folkestone, Augustine Guinoisseau, Captain Christy, Kaiserin A. Victoria, Gustave Regis, and Caroline Testout.

La France Roses not opening.—I have some La France bush Roses. They flower freely, but the blossoms do not open properly; the centres remain folded. Is this due to soil? The soil is of a chalky nature, the subsoil chalk. When the bushes were planted some specially-prepared loam was put about the roots.—ALICE.

*** This is an erratic Rose—in some cases good, and in others very disappointing from its balling in, as you mention. Soil has no effect that we have been able to discover. Try Caroline Testout in its place. It is a better and much more certain Rose. Also Mrs. W. J. Grant, Mrs. Whitney, and Denmark.

Climbing Roses, etc. (*K. W.*).—Blairii No. 2, Celine Forestier, Climbing Bessie Johnson, Climbing Jules Margottin, Coupe d'Hébé, Gloire de Dijon, Madame Plantier, and L'Idéale are all good and sweet-scented Roses for a fence. Yes, Spiræa Thunbergi, Rhododendrons, Mahonia Aquifolium, St. John's Wort, Hollies, and Spiræa callosa and its varieties will all do beneath trees; but you must feed them a little each season if the trees are large. You do not say what trees. Ground beneath Poplars, Elm, and Beech is difficult to clothe.

Rose Mme. P. Cochet (*Wilhelm*).—Mme. P. Cochet is larger than W. A. Richardson, as a rule, but it does not have the deep orange found in the latter. It is an improved form of the lighter edged flowers found upon W. A. Richardson, and comes constant to that, whereas W. A. Richardson is somewhat variable. The growth differs very little, but we certainly prefer W. A. Richardson.

Winter Violets.—Those desirous of having a good supply of Violets during the dark days of winter must lose no time in getting the plants transferred to the frames or pits in which they are to remain, so that they may be well established before the short days are upon us. Presuming that a good plantation of young runners of the desired sorts was planted out in spring and have been carefully tended since, they will now be fine sturdy plants, with plump, well-filled crowns. After trying various plans, I can now recommend the following—viz.: Take some ordinary Cucumber-frames and set them in a position where they will get a maximum of sunlight, raise the back of the frames on bricks so that they may present a sharp slope to the south, then fill them about three-parts full of stable-manure, treading it in firmly so that it may yield a gentle, lasting heat; on this spread a good layer of soil similar to that used for Cucumber or Melon-beds, then lift the Violets, with good balls of earth attached to them, and set them on the bed, allowing the crowns to be about a foot apart; fill in between the plants with fine soil, press all down firmly, and give a good soaking of water. The glass lights need not be put on until the plants begin to flower in November; then the lights must be tilted up on all favourable occasions, as Violets enjoy plenty of air. I find Marie Louise to be the best double kind for early winter flowering, but the older Neapolitan makes a good succession to it, and with a good stock of the Czar and other single varieties a good supply of this sweetest of all flowers will be assured.—J.

Helenium grandicephalum striatum.—This is at least a distinct form, though, considering its colour and the comparatively small size of the flowers, it is not a very showy plant. It is, however, a strong grower, and soon forms a big bush 5 feet high that makes it a telling subject among shrubs.

THE VINES AND VIRGINIAN CREEPERS AS CLIMBERS.

THERE is, perhaps, no feature in the adornment of our gardens and woodlands where the gardener's art can be more effectively displayed than in the use of climbing shrubs. There is a peculiar charm about these plants which no other class possesses to the same degree. It is due to their surpassing grace, and to some extent also, no doubt, to the strong suggestion they give of the luxuriance that more especially belongs to the vegetation of warmer, sunnier lands than ours. Our indebtedness is shown in this, as in every other branch of ornamental gardening, to the flora of other countries.

It is not for the beauty of the fruit that the wild types of Vitis are grown in these islands, it is for their luxuriant habit, surpassing grace, and wealth of handsome foliage, which in several instances affords the richest of autumnal colours—yellows, purples, and crimsons—that constitute their great value.

Some thirty species are at present in cultivation that can be grown out-of-doors in the southern parts of this country, a very small proportion, of course, of the total number of species known, most of which are semi or purely tropical. They are all of climbing or rambling habit, and their variety in foliage and different degrees of vigour in growth enable one or other of them to be employed for almost every purpose to which climbers may be put. Whilst some are especially valuable for the walls of houses, others may be used for covering arbours, pergolas, the pillars of verandahs, old tree stumps, or sloping banks. In the case of the stronger, taller-growing species they may be made to clamber over living trees. Little need be said on the matter of cultivation. They are moisture-loving plants, and require liberal treatment at the root. Where space is limited they can be kept at any required size by means of pruning, but the most luxuriant effects are, of course, obtained where they can ramble without let or hindrance. Where they are intended to spread over living trees they should always be planted sufficiently far away from the trunk to allow rain and light to reach them. Success, too, will be better assured by giving them a pocket of good rich soil to start in. In the majority of the species increase can be accomplished by means of cuttings or by single "eyes," treated like those of the common Grape-Vine. Some, however, are very obdurate, and can only be increased by means of seeds. Layering will occasionally prove successful with those that refuse to root from cuttings. Grafting should only be resorted to as a last resource.

The most important kinds are the following:—

V. ÆSTIVALIS (Summer Grape).—This species is probably the oldest of North American Grape-Vines cultivated in England. The leaves measure from 4 inches to 6 inches across. The berries are small—about the size of Black Currants—but have been improved by cultivation.

V. CALIFORNICA.—This is the best of the American Grape-Vines for colouring in autumn. It is one of the strongest growers, climbing in its native home over lofty trees. Its leaves, which turn a deep crimson in autumn, especially after a hot summer, are rounded and covered with down.

V. CORDIFOLIA (Frost or Winter Grape).—A strong, vigorous-growing plant with leaves measuring 3 inches to 6 inches in diameter. The berries are black and only palatable after they have been subjected to frost, hence the common name of Frost Grape. A moisture-loving Vine, affecting in a wild state the banks of streams.

V. LABRUSCA (Northern Fox Grape).—Before the introduction of V. Coignetiæ this was perhaps the most striking and effective of the true Grape-Vines in cultivation in Britain. Its leaves are amongst the largest, both they and the young branchlets being covered on the under surface with a rusty-coloured or sometimes whitish down. They are of stout texture and vary considerably in shape. In a wild state the fruit has a musky flavour, but by cultivation it has been much improved, and numerous varieties of the species are grown in the United States. In England it proves to be a strong grower, and deserves a high place amongst ornamental climbers.

V. VULPINA (the Southern Fox Grape).—A very distinct and handsome species. Its small, bright green leaves may be used as an effective contrast with those of the Labrusca and Coignetiæ, or may prove suitable in situations to which the larger-leaved species would not be adapted.

V. COIGNETIÆ.—This is the newest, and in some respects the most beautiful, of all the Vines. It is a native of Northern Japan, its nearest ally under cultivation being the North American V. Labrusca. For many years a Vine clambering over a tall Pine in Mr. Anthony Waterer's nursery at Knapp Hill has been at once a puzzle and a delight to all who have seen it. The foliage before falling turns a glorious crimson, making one of the most beautiful of autumn garden pictures. Up to within the last year or so, however, its identity could never be ascertained, no specimens in herbaria or in living collections exactly matching it. There is now every reason to believe that it is Vitis Coignetiæ, of which numerous plants have been lately raised in this country from seeds collected in Japan. The under-surface of the leaf is covered with a woolly down, which in Mr. Waterer's specimen is reddish-brown; the colour, however, varies; in some instances it is nearly white, but similar variations are met with in other species. We hope that in a few years' time it will constitute one of the most striking features of our gardens in autumn. The leaves measure each from 6 inches to 10 inches across. In size of leaf and vigour of growth it is, at least, the equal of any other Vine in cultivation.

THE HOP-LEAVED VINE, which is the variety of V. heterophylla known as humulifolia, is the most generally grown and most beautiful of the various forms of this species. Unlike any of the species hitherto mentioned, it has, besides its handsome foliage, the additional recommendation of producing in autumn a profusion of pretty turquoise-blue berries. The leaves are smaller than in the common heterophylla and are usually more deeply lobed. This Vine requires in most places a position on a wall in order to induce it to fruit with proper freedom, and appears to succeed better where it is restricted for root room. A variegated form of V. heterophylla is very pretty, the foliage being mottled with white or faint pink. A sheltered, sunny position is necessary to develop the variegation to its full extent.

Of the numerous varieties of the

COMMON GRAPE-VINE the following may be alluded to:—Purpurea: This is one of the deepest purple-foliaged plants we possess. Although the colour becomes most intense in autumn the leaves have a bronzy-purple tinge from the first. It is not so quick a grower as the ordinary form. Var. laciniosa or apifolia is the Parsley-leaved Vine. Its leaves are very deeply cut, frequently into several leaflets, which are again deeply lobed. Besides these there are the Miller's Grape, with smallish leaves covered with white down, and the "Teinturier" Grape, the leaves of which assume a beautiful claret colour before they fall.

THE VIRGINIAN CREEPERS.

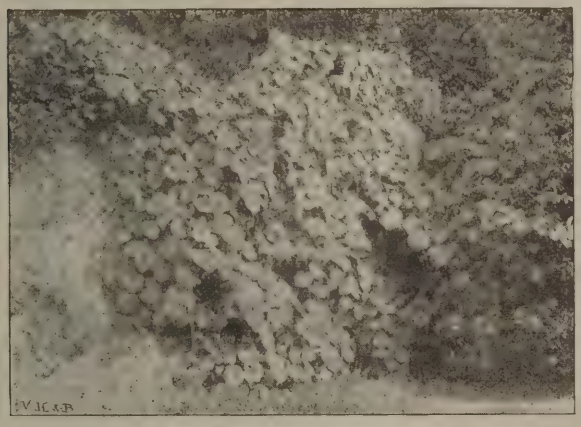
These were formerly kept distinct from the Vines under the name of Ampelopsis, but they are now all included under Vitis. The

BEST KNOWN VIRGINIAN CREEPER is V. quinquefolia, known both as Ampelopsis quinquefolia and as A. hederacea. So far as autumn colour is concerned it is the finest of the American Vines, its foliage changing in autumn to various shades of crimson, scarlet, and purple. For covering arbours, walls, or old tree-stumps there is no climber which produces so luxuriant an effect in so short a time as the Virginian Creeper does. The following varieties are in cultivation: major, incisa, and hirsuta.

A. MURALIS.—This is a splendid creeper, a name current in this country and on the Continent, whilst the same plant is known in America as Vitis Englemanni. It is a distinct form of the Virginian Creeper, possessing the same shaped leaves and developing equally, or even more, brilliant autumnal colours. Unlike the ordinary form, however, which requires support if it is intended to cover a wall, this is

American Vine-shaded bower in small garden.

Claret-coloured Vine in a Surrey garden.



Japanese Vine (V. Coignetiæ).

Hop-leaved Vine (Vitis heterophylla humulifolia).

Vine (V. vinifera) growing on a gazeebo.

self-supporting, and will attach itself as firmly to any suitable surface.

V. arborea (Ampelopsis bipinnata). — A species of considerable beauty of foliage, differing from any other North American species here mentioned in having bipinnate leaves. The numerous leaflets constituting a single leaf are small and deeply toothed. It is not a quick grower in this country, and is naturally of a shorter and more bushy growth than is characteristic of the Vines generally.

Veitch's Virginian Creeper (V. inconstans, syns., Ampelopsis Veitchi and A. tricuspidata). —The unfamiliar name of V. inconstans is the one that properly belongs to the plant so well known as Ampelopsis Veitchi. It is very useful for covering walls, but loses its character with age. As is the case with so many of the Vines, this shows great variety in the shape of the leaves. In young plants the leaves are small and very often scarcely lobed at all, whilst in older ones they are cut into three lobes and occasionally into the same number of separate, short-stalked leaflets. This tendency to variation shows itself also in the colours the leaves put on in autumn. In the best forms the foliage assumes various rich tints of purplish-red and crimson, whereas others have a large admixture of brown in the colouring. There is also a form whose foliage has a bronzy hue more or less throughout the season, but especially when young.

OUTDOOR PLANTS.

QUEEN OF THE PRAIRIE (SPIRÆA LOBATA).

This beautiful herbaceous Spiræa produces blossoms of brilliant rose colour on feathery terminal racemes; it flowers in June, and few plants are more effective when well established. The foliage, which does not reach nearly to the flowers, is very much like that of our native Meadow-sweet (Spiræa Ulmaria) in character, very graceful, and richly tinted, with crimson-brown stems; and the plants should be allowed to be undisturbed from year to year (except for a mulch of good soil around their roots in early spring) to obtain the best results. A moist corner or the vicinity of a small stream will suit it well, for, like all Spiræas, it is semi-aquatic, yet it may be made to flourish well without this in an ordinary garden, if a low situation, not too much drained, be chosen for it. After planting (unless this be done with great care) the plant will sometimes almost disappear under the soil for a year or two; yet after a time, if mulched and kept moist in dry weather, the beautiful feathery spikes will reappear, and yearly increase in size and number.

I. L. R.

Queen of the Prairie (Spiræa lobata). From a photograph by Miss Mitchell, Eastleigh, S. Devon.

Pansies.—Those who in the South of England desire to have a good show of Pansies in the spring and early summer should either obtain seedling plants at once from some good blotched strain or else get plants from a florist. It is very important, in warm localities, that these Pansies should be well established in the soil ere the spring warmth begins, as otherwise they soon feel the effect of the drought. Old plants that have bloomed early should now be trimmed over, lifted carefully, divided, and be replanted at once.—A. D.

Anemone japonica (*Japan Anemone*).—As a cut flower this beautiful autumn flower seems to be in exceptionally good form this season, the white shape of the flower being beautifully chaste and lovely. A few blossoms in a specimen glass make a very pretty decoration, while a number of sprays, cut with long stems, such as the plant develops, are an invaluable decoration when lightly arranged in a trumpet vase of medium size. For baskets, bowls, and other receptacles this flower is equally well adapted, using a few light green fronds of Ferns and Asparagus with any copper-coloured foliage as a contrast. An épergne filled with these flowers, with richly-toned foliage for effecting a contrast, is simply arranged, the natural character of the flower being so elegant and artistic.—D. B. C.

NOTES ON LILIES.

The value of Lilies in the garden cannot be over-estimated, and from an ornamental and useful point of view I should place them next to the Rose. The number of kinds that are seen doing well in gardens generally is limited, compared to those catalogued, thus showing that many are either peculiar in their requirements or difficult to obtain. Still, there are a goodly number that may be grown in most gardens with success, provided they get ordinary attention; and I have made the following notes this season in my own and neighbouring gardens:—

Croceum or Orange Lily is charming, being free-growing and robust. In several cottage gardens near here—one in particular, where the soil is light and sandy—it thrives wonderfully, grown in large masses from 4 feet to 6 feet across, and very tall; and I observe these cottagers do not often replant them. In another garden they are growing satisfactorily at the foot of a south wall.

L. candidum or the Madonna Lily is known by everyone who has a garden. Nothing can be more attractive than a large mass of this when in good health. Yet it is seldom seen in this condition in large gardens, and I have often observed that it does better in cottage and farmhouse gardens. No doubt this is due to its being allowed to go undisturbed for many years. During the blooming period this year I have noticed that in cottage gardens, where they are growing against the foot of south walls, and have not been disturbed for years, in one or two instances the spikes had attained to a height of 5 feet. Many of the blooms were 6 inches across, without a spot of disease on them. I am under the impression these often fail from high feeding, which engenders disease.

L. testaceum is a charming kind with a sort of Turk's-cap bloom. In our own garden it thrives beautifully, planted in a south border amongst other hardy plants, and at present some spikes are from 5 feet to 6 feet high, with five or six large blooms on them. These have been in their present position nine years. These stems seldom get broken by the wind.

L. martagon (or Turk's-cap).—All kinds Turk's-cap are beautiful, especially the scar one, which is seldom seen in a robust conditio I have tried it in this garden without succes but the purple grows wonderfully well in almo any position. In the Grass it is quite at hom and I noticed some spikes in this position fr 5 feet to 6 feet high, carrying from thirty-fi to forty blooms. We have quite a colony them growing under some Nut-bushes. In th position they get no root disturbance, and t bloom-spikes are allowed to die off naturally.

All kinds of tigrinum do well in our mix border, and in the sandy soil of a garden ne Aldershot they grow like weeds.

L. Harrisi does not thrive with me in t open border; umbellatum is satisfactory Krameri does not succeed; speciosum is sat factory when in light soil and planted deep, a allowed to go undisturbed for years.

J. Crook.

Filling lawn beds (*Alice*).—One of t many evils attending the bedding mania is th for about eight months in the year, unle recourse is had to bulbous spring-floweri plants, the beds are unattractive. To pla herbaceous perennials in the autumn, and ro them out in order to make room for the summe bedding plants, would be vandalism. Th former require several months' growth befo they show their true form, and when on established increase in beauty year by yea the latter are at their best for but about tw months in the summer, require to be raise annually, housed during the winter, and ac seriously to the labour of the gardening sta Still, it must be admitted that for a certa season they are bright, and, therefore, despi their drawbacks, continue to hold a place in th summer arrangements of most gardens. My sotis dissitiflora might be tried for some of th beds. Good-sized young plants that have sprun from spring-sown seed, if planted now, woul flower well next spring. "Alice" says tha bulbs are too expensive for use in her beds but Narcissus poeticus recurvus can be obtaine now at even less than two shillings per hundre and would make a beautiful picture rising ou of the bright blue Forget-me-not. The bulb can be planted at a depth of 6 inches, and le in the ground, the Pelargoniums for summe bedding being planted between them. If th Narcissus leaves are not cut off before they tur yellow the bulbs will continue to give goo results year after year. If the gardener, how ever, in his desire for tidiness, cuts the leaves o when he puts out the "Geraniums," the bulb will be so weakened that their subsequen flowering will be impaired. If the leaves ar gathered up into bunches they will not be ver unsightly, and may be removed in July. Th Myosotis should be taken up as soon as it flowers are past their best, and planted back i the reserve or kitchen garden. Here it wi seed itself and furnish strong, self-sown seed lings in the autumn. Wallflowers, if pinche back once or twice when young, do not becom leggy, but develop into bushy plants that stan the wind well. Tulips may be planted 8 inche deep, and the Pelargoniums put out over them as recommended in the case of the Narcissi We have had a bed which was thus arranged i which the Tulips came up well each spring The latter bulbs can also be bought nowaday at an exceedingly cheap rate.—S. W. F.

Double Ivy-leaf Pelargonium Achievement.—This is a cross between th well-known Ivy-leaf Pelargonium Souvenir d Charles Turner and a pure White Zonal Pelar gonium. The characteristics of the two type of growth and flower as seen in the parents ar each traceable in this plant, the habit bein particularly sturdy. The flowers are large and handsome, semi-double, with smooth petals, and the colour is a distinct and pleasing shade o soft salmon-pink. The plant flowers profusely developing trusses of good size.—B.

Aster Novi-Belgi Harpur-Crewe.—This is one of the best of these useful autumn flowers, and is just now making a pretty display in the border. This variety has large pure white flowers, with a yellow disc, and usually attains a height of about 5 feet. The flowers may be cut in useful sprays, and make a welcome change in the decorative arrangements of the house.—D. B. C.

COUNTRY-TOWN HOUSES AND GARDENS.

In the accompanying illustration we have a happy representation of house and garden such as nowadays are unfortunately becoming rarer year by year, being slowly ousted by the stucco abominations, dear to the heart of the jerry-builder, known as "villa residences." However cramped and incommodious these may be, they generally wear that air of blatant self-assertion that is characteristic of the parvenu, and look with smug complacency over the 20-foot Grass bank, which the house-agent dignifies by the name of "the sloping lawn," where a wretched Araucaria imbricata, the most inartistic of all trees, makes, fortunately, but a half-hearted struggle for existence; or upon a geometrically-laid-out plot of glaring bedding plants, probably arranged for by the architect as being in keeping with the character of the building, which filled with pot plants, that made possible the conversion of a loft into a bedroom, was decided upon; when a porch appeared in the light of a desirable addition, and when, latest improvement of all, the bow-window, now covered with flowering Clematis, was built out. At all events, each succeeding innovation has been exposed sufficiently long to the mellowing influence of time to lose any appearance of crudity it might once have possessed, and all form parts of one harmonious whole that gains in picturesqueness as well as in comfort from this very irregularity of form. In passing through some little old-fashioned towns, distant from the main arteries of traffic, one may see examples of these delightful old houses with tolerable frequency. I am acquainted with a small, straggling town on the borders of two southern counties where at least five of such dwellings exist. They differ considerably from one another in appearance; indeed, the charm would be lost if there were where the guinea-fowl stray beneath the standard Blenheim Oranges.

One can sometimes almost fancy that these houses have a personality of their own. They do not withdraw themselves out of sight and hearing of humanity as do the proud mansions, neither do they submit to be jostled by the crowd as are the houses that stand in rows in the street; they take a sedate interest in life, and love to sit with folded hands in their scented gardens and watch with kindly eyes the world go by. S. W. F.

Gladiolus The Bride.—This variety is sometimes known as Colvillei albus, but I prefer the name of The Bride. It is a most beautiful Gladiolus, and it is also one of the most useful white flowers which we possess. Its bulbs are by no means dear when purchased by the dozen or hundred, and all who have the slightest demand for cut flowers should grow this variety

A typical villa garden. From a photograph by Mr. F. Mason Good, Winchfield, Hants.

dazzles the sight of those passing the pretentious gateway of the brand-new erection, glorying in name of "Villa Como," or some such equally inept title. Far other are the modest dwellings that are met with here and there in country towns and rural villages—houses that bear on their tranquil exteriors evidences of the finger of time, whose touch confers a dignity of its own on the most unassuming structure. As we gaze across the neatly-kept garden at such houses, which, for the most part, stand well back from the road, we are conscious of the placid air of repose that pervades the scene. Age has dimmed the red of tiles and bricks, while the white walls show but little of their surface through the luxuriant creepers. It is palpable that many alterations have been made since the dwelling was first built, additions conceived after mature consideration and carried out deliberately, without undue hurry. One wonders when it occurred to the owner to build on the gable: when the dormer-window, now two alike. One is thatched, with deep, overhanging eaves, and white walls; another is of red brick, sobered by weathering; a third is built of yellow-grey freestone, that with age has assumed a particularly soft colour tone, while the others each possess some distinctive merit. In their gardens, in full sight of the road, the old flowers flourish, not, however, to the exclusion of a certain admixture of later introductions. Wistarias embrace the walls in company with Magnolias, Banksian Roses, and the blue Passion-flower. Jasmine, Honeysuckle, and Clematis smother the porches, and in one case have scaled the supports of a deep verandah. The pride of one garden is its great tubs of Myrtle, in another it is the blue Agapanthus grown in like manner, while the white Madonna Lilies form the chief feature of a third. In all the Grass is like velvet, and the paths always seem to have been just weeded and raked. Adjoining, perhaps, the most picturesque is a miniature orchard, a perfect gem in its way, in quantity. It is exceedingly well suited for pot-culture, and it succeeds admirably in beds and borders in the open air. Bulbs for forcing may be potted and treated like those of Hyacinths, and if bought and potted now they will grow on slowly and flower freely in March and April, and at Easter their lovely spikes of white flowers will be valued more than anything. The bulbs are no larger than those of an ordinary Crocus, but I have often found such bulbs to produce from three to five bloom-spikes from a foot to 18 inches in height. Failure need not be apprehended; indeed, all who grow them are astonished that their culture is so easy. If pots cannot be spared, quantities of them may be planted and grown in boxes—*i.e.*, where the flowers are wanted only in a cut state. Their spikes last an unusual length of time when cut, and their graceful appearance fits them admirably for artistic decoration. After blooming their bulbs are not useless, but go on flowering year after year. In the flower garden, too, they

have a very charming appearance, but I am as much pleased with them in the mixed border as anywhere, and as the bulbs are thoroughly hardy and may be planted out at any time during the winter, this Gladiolus may justly be classed amongst the best of hardy flowers.—C.

DAFFODILS FOR FORCING.

AMONG flowers that may be forced into bloom quite early in the new year, and frequently before that time, are both single and double Daffodils. These are, without doubt, among the most popular at this early season; and, unlike some other forced flowers, these Daffodils when properly done lose none of that exceeding beauty that grace their more natural flowering in the open ground in the early spring months. On the contrary, the protection they receive when grown under glass rather adds to their beauty in at least two ways; first, by the purity of the flowers; and secondly, by a considerable addition to the length of their flower-stems. Growers of Daffodils in the open, and particularly in the so-called early districts, know something of the drawbacks from both, and where the flowers are gathered in the bud stage it is a very difficult matter to make the bunches appear at anything like their full worth. With judicious care under glass, however, the flowering stems are generally considerably longer—no mean advantage when required for market. The points in the culture of these flowers calculated to provide this increased length of stem are, firstly, bulbs that are perfectly healthy and of the first size; secondly, it is important that the bulbs should have received a thorough season of rest; thirdly, that they should be planted by the first week in October, and if a fortnight earlier so much the better. Other items requiring attention are shallow planting, by which I mean just covering the bulbs with soil; and lastly, their introduction into heat or glass structures preparatory to forcing. I give these points as of importance in their culture, after some experience and observation, and because many in attempting to force Daffodils for the first time are day by day straining every nerve in the direction of having them early in flower, when, as a matter of fact, the very course they are pursuing is in reality opposed to progress. In forcing these flowers it is quite possible to err in planting them too early. Bulbs that have been thoroughly dried and rested start away again into growth very strongly. Such bulbs as these must be made firm in the soil, as the mass of roots descending in a body frequently lifts the bulb from its place. To avoid risk in this direction it is always best to plunge in 6 inches of coal-ashes over all. Bulbs intended for forcing should have been planted at least six weeks previously. From experiments in this direction I have found that bulbs thus treated root, grow, and flower in a perfectly natural and uniform manner. On the other hand, bulbs that have been taken from the soil and potted up almost immediately are by no means so regular and uniform in growth and flower. This is important where pots of such things are grown for decoration and not expressly for cutting, as in the former a display of bloom is the one thing aimed at. Bulbs that have been thus duly prepared may now be introduced in the greenhouse, placing them at first in a quite cool position and away from drying influences.

Where several kinds are being forced, it may form a useful guide to the amateur or beginner if the natural order of their flowering in the open ground be followed. By introducing them into heat in this way much better results follow than by taking them in an indiscriminate way. Of the evil resulting from the latter an instance came under notice a year ago, where such kinds as Horsfieldi and poeticus ornatus had not only been introduced as the earliest batch, but, to make matters worse, were placed at once in the hottest end of the house, and quite near the hot-water pipes. Despite the heat they refused to move, to the astonishment of the owner of them. To force Daffodils successfully, a moist temperature of 40 degs. to 45 degs. at night is ample, and this should only be very gradually increased as the growth becomes apparent under the early treatment. A cool bottom is always best, and on no account should the pots be placed on open stages with hot-water pipes below. The syringe may be daily used to maintain a moist atmosphere, and as growth advances water may be given freely at the roots.

For very early work the Tenby Daffodil (Narcissus obvallaris) is the best of the single trumpet kinds, or, if healthy bulbs are procurable, Ard-Righ. The former, however, is the more popular, of good colour, forces well, and is much cheaper also. As a second early, Golden Spur is excellent in every way. Among doubles, the old Double Yellow is by far the brightest and noblest of them all, doing grandly as a pot plant, and also making a fine display when cut. The indispensable N. poeticus ornatus requires a long season of preparation to force well; first in frames, and from these through one or two stages, each of about a fortnight's duration, with slightly-increased temperature each time. If placed from the open direct into heat the chances are that the flower-stem will become strangled in the neck of the bulb. Get it to pass this critical spot in the cooler stages, if possible, and success is ensured. E.

MORELLO CHERRY.

ALTHOUGH there are two varieties of Morello Cherries, black and the red or Kentish variety, when one speaks of Morellos it is generally understood to be the black that is meant.

Morello Cherry flowers. From a photograph by Mr. G. L. May, Tiptree Hall, Kelvedon, Essex.

Amongst Cherries it is doubtful if there is a more useful kind than this. It will grow in a variety of positions, nearly always crops freely, and is at all times appreciated. It is the most esteemed for cooking purposes, preserving, and confectionery. It ripens its fruit in July and August, and against a north wall the fruit will hang until well into September. At first the skin is dark red, but with age it changes to black, and the fruit becomes even more juicy. The habit of growth is semi-pendulous, quite hardy, and the leaves are small, dark green in colour.

Morello Cherries succeed in a variety of positions and forms of training. In the open, as bushes and standards, heavy crops of fruit are obtained, the difficulty, however, with this form of growth being to protect the fruit from birds, which are partial to it, even if it is somewhat bitter in taste. It is somewhat difficult to get other kinds of fruit to succeed against north walls, but this Cherry revels in such a position. Some persons consider that this Cherry will succeed only on a northern aspect. That, however, is a mistake, as the finest fruit I ever saw came from a south wall, a tree planted against a west wall having extended its branches round the southern angle, covering also a chimney on that side. Whether it was the warmth of the chimney in addition to the southern exposure I do not know, but I know the fruit was yearly of exceptional good quality.

Morello Cherries, like all members of the Cherry family, are partial to sandy soil. That which is heavy and retentive of moisture is not so suitable, as the soil during winter and spring is rendered too cold. In preparing the site for this Cherry the ground ought to be deeply trenched, and if inclined to be wet some drainage in the shape of broken bricks or stones added. With the natural soil mix road-grit, old lime-rubble, or decayed vegetable refuse, to which should be added wood-ashes. It is surprising what a difference is made in the rooting of Cherry-trees by the addition of ever so little of such compost at planting time. When planting at the end of October, which is the best time, keep the tree well above the surface of the surrounding soil, as that which is trenched is sure to settle considerably, and it is bad for a tree to be eventually in a hole. The roots ought to be as near the surface as possible, so that they obtain all available benefit from external warmth. The perfect ripening of the wood yearly is the all-important point to study in the production of a full crop of superior fruit.

PRUNING this Cherry is so conducive to success, or otherwise, that it is well to pay special attention to the matter. All newly-planted trees ought to be cut back to within 6 inches of their base in February. The object of so severely cutting all growth of the previous season is to lay a foundation for the future good shape of the tree, whether it be a fan-shaped one for the walls or a bush in the open. These forms of tree are the most suitable for the positions named. Subsequent pruning consists of removing weakly and worn-out branches. The finest fruit is produced on young, vigorous shoots. Except in extreme cases, the points of the last year's shoots need not be removed. Morello Cherries will succeed with their branches closer than ordinary sweet varieties, as the latter fruit more freely from spurs of several years' standing, while in the case of Morellos young shoots are the most satisfactory bearing medium. The summer treatment of Morello Cherry-trees is a simple matter, and consists in keeping the trees clear of insect pests and supplying the roots freely with moisture in the case of a long spell of dry and hot weather. Black-fly is the first of the insect pests that attack the trees. When the weather is dry, early in the spring, when the shoots are but a few inches long, the points are often infested with the aphides. If they are not quickly exterminated the leaves at the point curl up, and thus a check is given to that free growth which is so desirable. Prompt action is necessary, as neglect for ever so short a period is sure to end in failure of the season's crop.

Dust the points with Tobacco-powder at night, and in the morning give the tree a vigorous syringing with clean water. In stubborn cases dip the points of the shoots in a strong decoction of Tobacco-water. Red-spider also attacks the leaves during the summer, owing to a scarcity of moisture both at the roots and overhead. As a remedy for this pest give the roots a thorough soaking with clear water and syringe the leaves with soft-soap and Tobacco-water, made at the rate of 1 lb. of the former to 2 lb. of the latter, thoroughly soaking it in hot water, making altogether 50 gallons to be used in a tepid state. S. M.

Tufted Pansy William Niel.—This old sort has been flowering in a remarkably free manner just lately, and the flowers have been of a large size too. The colour is a pleasing shade of pale rose, and is only seen in this variety of the Tufted Pansies. The cooler weather of late has suited most Pansies, and this variety in particular. I have not seen the flowers so fine for a very long time. The growth is not so compact as some of the newer sorts, yet it is of such a kind that it is valuable in the garden for fairly compact work.—D. B. C.

Aster Amellus bessarabicus.—The flowers of this handsome variety when cut with stems of a good length are very much valued for cut-flower work. It is one of the largest flowers of the Starworts, the colour being a rich blue. The height of this variety is about 2 feet.—D. B.

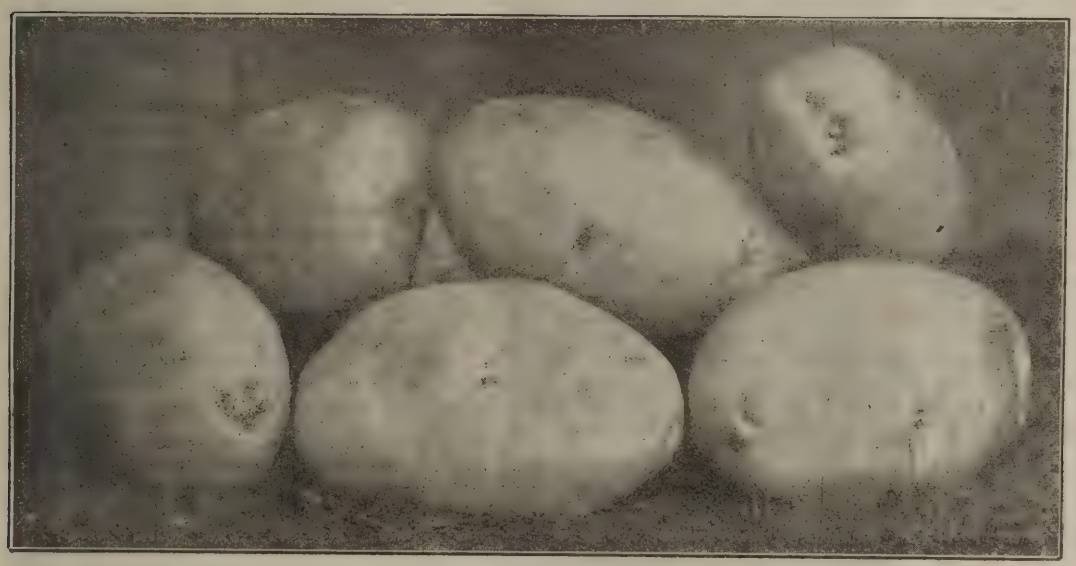
Dahlia Mayor Haskins.—I think the note by "S." on Dahlia Mayor Haskins is very misleading. Those who like a plant of the Gloriosa type will never choose Mayor Haskins, for the simple reason that the flowers of the latter are borne on very short stems, and are quite hidden in the foliage, while Gloriosa has flowers and stems over a foot in length, and may be seen all over the garden. At any rate, after growing each side by side, Gloriosa is the one I like best.—J.

THE KITCHEN GARDEN.

POTATO WHITE KIDNEY.

Owing to the prolonged drought the earlier Potato crop was small, and had it not been for some of the newer, robust kinds, such as the one illustrated, I fear many amateurs would not have had a profitable return. By the crossing of the robust large American type, such as Early Puritan and Early Rose, with some of our own varieties noted for flavour, we have obtained quantity and some sort of quality also. In a hot, dry summer the early American types are noted for their good boiling properties, this making them doubly valuable to those who cannot devote much space to the Potato. The variety illustrated is noted for its shape, its good quality, with quantity combined. It is well worth room in all gardens, being a pure white tuber, and, as its name implies, kidney shaped, and with few eyes. I have never seen it better than this season, and in a light soil, planted early, it was not injured by the frost of the first week in May, and was, therefore, fit for use earlier than usual.

For exhibition purposes it is unequalled, and, being so pure in colour, is always admired. Plants should be grown thinly and planted early, and not left too long in the soil when matured. Of course, such early varieties should be eaten in season—say, from time of lifting till November.



Potato White Kidney.

At that period they are at their best, and when they begin to grow out they lose flavour; therefore, I do not advise growing them for long storage. Another point it is essential to observe is that no one can safely plant them on a heavy clay soil, as, if the early part of the season is wet, there is poor quality and often much disease. These Potatoes, to be good, should have a light soil, an open, sunny quarter, and ample space—at least from 2 feet to 2½ feet at planting. I have seen such grand crops of these varieties, including White Kidney, on sloping banks, that it seemed to me a fit variety to plant where others would need more food and moisture. For some few years I have crossed the Ashleafs with the kinds named, and am, therefore, better able to judge of their cropping, and though crossing is a matter of small interest to the amateur, it is a profitable proceeding when crossing will increase bulk and preserve quality also, and no doubt the crossing by experts gave us an abundance of disease-proof tubers, kinds which it is the pride of the amateur to grow. Many amateurs can grow early Potatoes who have not room for late ones, and if the soil is suitable there is no crop which gives a better return, and land cropped with Potatoes is then in condition for other green crops, so that by growing these early kinds the amateur is in a position to lift the crop, and to plant the land with green crops, such as Kales, Cabbages, or other things, and thus making the best use of the soil. Of course, I need not dwell upon the importance of fresh quarters—yearly, if possible—and change of seed at least every other year, as the soil soon tires of Potatoes. If the area is small it is advisable to omit the Potato crop for one season and grow something else, in preference to heavy disease or failures. Fortunately, these robust growers are less fastidious as to soils, and I have seen it advised to grow them on poor land without food, but it is not the best policy. I do not advise rank manures at all, but well prepared, and failing this a good fertiliser or concentrated manure, which is cleanly and quick-acting; and if the soil is studied there will be good results at no great cost. It is important when giving food not to place it in direct contact with the seed-tubers. I prefer to place it under them, with a few inches of soil over it, so that the roots find the food, and this enables the plant to make greater progress. I need not go into planting, lifting, or storing—these are matters of common knowledge—but let me advise cool storage; and in saving seed of the variety named, in fact, any varieties, I would advise good large seed—small seed cannot produce the best results. W.

TOMATO GROWING.

I was interested in reading the article by "B. C. R." on Tomatoes in Gardening, August 21. I shall be glad if he will tell me what he considers a good crop per plant when grown in 10-inch and 12-inch pots in a cold greenhouse? This is the fourth year I have grown them. Last year from 15 plants I cut 56 lb., and I don't think I shall exceed that quantity this year. I am told I ought to get 6 lb. or 7 lb. per plant, and I have read of larger crops still. This year my plants have set four to six bunches of fruit, then they give out although growth continues. I give plenty of ventilation night and day, and feed them with manure-water made from sheep and pigeon's-dung, guano, superphosphate, etc., although I am careful not to overfeed. The varieties are Freedom and Dobbie's Conference, raised from seed by myself. If every bunch of flowers produced fruit I should get nearly double the quantity. Should I do better by growing them in tubs or boxes? The pots are placed just under the stage, a couple of laths being removed for the purpose, consequently they are screened from the direct rays of the sun. I should also like to know what variety "B. C. R." considers best as regards quantity and quality?—J. Pearce.

*** The weight of fruit obtained—viz., an average of nearly 4 lb. per plant—certainly cannot be described as a heavy crop, nor, on the other hand, is it a very bad one, plants grown in pots seldom producing more than half to a third the weight of fruit usually obtained from those planted out in a properly-constructed bed or border. Many nurserymen do not get more than 4 lb. or 5 lb. of fruit from each plant, whether grown in pots or planted out, while others may secure 10 lb., 15 lb., or even 20 lb. of fruit per plant. A very large grower of Tomatoes in Worthing obtains an average of 7 lb. to 8 lb. from the plants (in pots) he attends to himself; but many thousands of similar ones that have to be watered, etc., by men in the ordinary way do not produce more than about half this amount. On the whole, I regard anything over 6 lb. as a good crop for a pot plant, and over 10 lb. as phenomenal, though it should be remarked that the yield may be approximately doubled by simply allowing the plants to root out, through the bottom of the pots, into a bed of good but thoroughly sweet and porous soil beneath.

As regards feeding, the materials mentioned by Mr. Pearce are excellent, more particularly the infusion of sheep's and pigeon's-dung, which as a staple food can scarcely be surpassed, if equalled. Guano, too, is good, if genuine; I find a light top-dressing of the "Ichthemic," applied twice or thrice during growth, to increase the crop considerably, as well as improving the appearance and quality of the fruit. Superphosphate I usually mix with the soil, but it should be remembered that anything containing potash is very beneficial to Tomato-plants, and they also require large supplies of nitrogen (ammonia) as well. A county council lecturer, and a good Tomato grower, recently advised the application of sulphate of ammonia, in the form of a weak solution (¼ gill to the gallon), to Tomato-plants in pots at almost every watering, and I certainly think that the use of this agent—say, once or twice a week—would increase the crop appreciably.

Evidently it is the failure of a great part of the blossoms to set that reduces the average yield, and this nearly always arises, in the case of pot-plants at any rate, from lack of vigour in the plants, which the ammonia (or nitrate of soda would do nearly as well) will go far to counteract; but the soil must be rammed quite hard in the pots, or the stimulant will force the plants into a too luxuriant growth. Conference is one of the surest-setting Tomatoes in cultivation, though the fruit is somewhat too small, and if this fails to set freely there are very few others that would be likely to do better in this respect.

The quality and texture of the soil must also be considered. Fresh loam from an old meadow or common (if not too poor) forms the best staple, but the soil of some districts grows Tomatoes (as well as other things) much better than that from other places. That from a limestone or sandstone district appears to afford decidedly the best results. Add a little leaf-mould and some burnt earth, but little or no manure, unless well dried and sweetened in the sun. A grower near here who has a large houseful of plants in pots, and obtains heavy crops, mixes a quantity of crushed oyster-shells with the soil, and with the best results. Broken cockle-shells or some crushed limestone answers almost as well.

Plants in pots always "go off" more or less after swelling three to five trusses at the outside, however well fed, but if stopped beyond the sixth or seventh truss the later ones set and swell up much better, especially after some of the fruit below has been gathered. Plants in boxes usually remain longer in bearing, and consequently afford heavier crops.

As regards varieties, I have already mentioned my favourite kinds, and I study flavour and quality as well as productiveness. A good form of the Improved Large Red always crops heavily, and Early Ruby, Chemin Rouge, and Ifield Gem are all good croppers and setters. The last succeeds remarkably well in pots under careful culture, and has an unusually rich flavour. The fruit of Conference is too small to render it a really heavy cropper, and Freedom I have not yet tried.

B. C. R.

CHRYSANTHEMUMS.

Early-flowering Chrysanthemums.—These are certainly later in flowering this season than usual, probably on account of the long spell of cool and wet weather experienced during August. Previous to this time the plants were coming along splendidly, especially in those collections where they had received every attention, with a good watering occasionally during the very hot weather experienced at that time. Now, however, all is changed, the plants having made a lot more growth, and being rather taller than usual as a consequence. As a rule, by the middle of September there have been quite a large number of sorts to cut from, but just now in the open border the number of varieties in full bloom is very limited. At this date last year it was possible to cut from several sorts which now have not yet commenced to show colour. Those which have done well so far are: Harvest Home, Mme Marie Masse, M. Dupuis, Lady Fitzwygram, Vicomtesse d'Avene, Edith Syratt, Mme. Eulalie Morel, Mme. C. Desgrange and its sports in the Japanese section. The Pompons that have flowered have been very nice, these being: Lyon, Alice Butcher, Piercy's Seedling, Flora, Little Bob (syn. Scarlet Gem), Blushing Bride, and its sport Bronze Bride. Should the weather keep nice and open during the end of the present month and October we have the promise of a very bright display.

Annual Chrysanthemums.—From an outdoor sowing of seed of Chrysanthemum tricolor, carinatum, and other of the erect-growing annuals, I have had for a long time, and still have, such beautiful single flowers. They have been greatly admired and coveted for cutting; indeed, these annual forms, so hardy thus raised from seed sown in the open, are of the most pleasing form for indoor decoration The Dunnette varieties are charming also, and are distinctly allied. Where all three forms are sown great variety is obtained. To these, if desired, may be added the rather coarse-growing double white and yellow coronariums; but both these are best if propagated through the agency of cuttings, put in now and kept in a house or frame all the winter. A good stock of Chrysanthemum segetum, flowers single and golden or yellow, also gives an abundance of useful cutting flowers. All may be sown thinly outdoors in April in small clumps.—A. D.

Early Chrysanthemum Mons. Dupuis.—This is one of the few really good early-flowering kinds, and quite the best of its colour—a bright bronzy-yellow. It has a dwarf bushy habit and is very free-blooming. Late in August and all through September it will provide a wealth of well-formed flowers of good size.—H.

GARDEN PESTS.

Destruction of woodlice (*J. L. H.*).—Woodlice often congregate together in large numbers in cracks, etc. If such places can be found, pour in boiling water, or they may be trapped by laying pieces of slates, tiles, or bricks on the earth and leaving them for twenty-four hours. The woodlice will shelter under them. Potatoes or Apples cut in half and slightly scooped out and laid about, flat part downwards, will attract them; or very small garden pots, laid on their sides with a little dry horse-droppings at the bottom, and then partly filled with dry Moss, are good traps.—G. S. S.

Rose-tree pest (*J. R. B. W.*).—The insect you enclosed is the caterpillar of one of the moths belonging to the family Geometridæ. The caterpillars of this family are known by the name of loopers, on account of their backs forming a loop when they walk. The scientific name of this family is derived from the same habit, as the caterpillar appears to be measuring the ground as it walks. I cannot suggest any easier way of destroying them than picking them off the Rose-bushes, but you might spray or syringe the bushes with ½ lb. of soft-soap, the extract from ¾ lb. of Quassia-chips, to 10 gallons of water; or ½ pint paraffin-oil, 2 lb. of soft-soap, very well mixed, added to 10 gallons of water, and kept well stirred. If it were possible to kill all the caterpillars, so that there were no moths next year to lay eggs, you would not be attacked next season.—G. S. S.

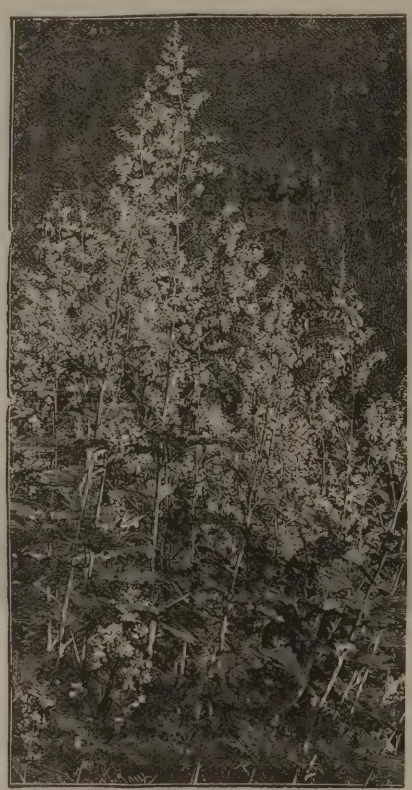
Earthworms' eggs in greenhouse (*J. F. Elgin*).—The eggs you enclosed are the eggs of one of the earthworms, as far as I can see, but they were so shrivelled when they reached me that it is rather difficult to be quite certain. However, by soaking them in water they almost assumed their proper form. The twig of the Apple-tree is infested with the "American-blight," one of the aphides (Schizoneura lanigera). All the rough bark of the affected parts should be scraped off, the parts well scrubbed with 2 lb. of soft-soap, and the extract from 1 lb. of Quassia-chips, to 10 gallons of water; or 1 lb. of soft-soap, ½ pint paraffin-oil, thoroughly mixed, to 40 gallons of water, and kept well stirred, or the oil will float at the top. Dress the stems in the winter with a whitewash of quick-lime and soft-soap.—G. S. S.

Name of caterpillar (*Morn*).—The caterpillars you sent are those of the buff-tip moth (Pygæra bucephala), a very common insect. It feeds on the leaves of various trees.—G. S. S.

Insect pests (*T. E B*).—The insects you sent are the grubs of a fly, but I am unable at present to be certain of its name. The white so-called eel-worms are immature specimens of the flattened snake-millipede (Polydesmus complanatus), a very destructive pest to the roots of plants. I should remove all the soil round the roots of the plants and burn it.—G. S. S.

THE PLUME POPPY (BOCCONIA CORDATA).

THIS forms handsome erect tufts from 3 feet to over 8 feet high, and is an admirable plant when properly placed. The stems grow rather closely together, and are thickly set with large reflexed leaves, the margins of which are somewhat lobed or sinuated. The flowers, which are very numerous and borne in very large terminal panicles, are not showy, but the inflorescence, when the plant is well grown, has a distinct and pleasing appearance. The plant is seen to best effect when isolated, and does well in ordinary garden soil or free sandy loam. It is a good plant for the wild garden, the leaves being fine in form and the plant prettier when growing in a scattered way than as a stiff specimen.



Plume Poppy (Bocconia cordata).

Caladium argyrites.—This is one of the most useful Caladiums grown, as it may be used in many ways where the large-leaved kinds could not, and is useful for house decoration of all kinds. Another purpose for which it is most suited is in a cut state for table decoration, especially when the leaves have attained age. It is not a strong grower, but if given good generous treatment good-sized plants may be had in 5-inch and 6-inch pots. Our method of growing it during the last four years is as follows: The bulbs are wintered in the pots they grow in, at the back of a warm house, about 55 degs. at night. In the spring they are shaken out and potted in 2-inch and 3-inch pots, according to the size of the crowns. These are plunged in a Cucumber-frame, and when the pots are full of roots they are shifted into 5-inch and 6-inch pots, and plunged again into a frame on a hot-bed with other foliage plants for table. They remain here till they are good plants, when they are removed to a warm house to harden the growth. The soil I use is rough peat, and one-sixth part turfy loam, with a good amount of sand, and a little dry sheep-dung.—J. CROOK.

LAW.

Nuisance caused by overhanging branches of a neighbour's tree.—Is there an Act of Parliament which will permit me to cut back the branches of a tree which stands in my neighbour's garden and overhangs my boundary? If so, please name the Act, and state whether it would be necessary to give my neighbour notice before cutting?—R. W.

*** There is no Act of Parliament expressly permitting such a step as that which you propose, but, nevertheless, such a course would be quite legal. It has been decided by the highest court of law in the realm that the owner of a tree which gradually grows over his neighbour's land does not thereby acquire any right to the space occupied by the tree, its roots, or its branches. The owner of the land into which the roots grow, or over which the branches hang, is entitled, without any previous notice to the owner of the tree, to cut off so much of the roots as grow into, or of the branches as overhang, his land. But in doing this he must be careful not to enter upon the land of his neighbour, neither must he cut off any portion that does not encroach on his land. Although it is not necessary to give notice, it is much more courteous and more neighbourly to do so; and, besides, if you gave notice, and the notice was not complied with, and it was difficult to do the work without entering on your neighbour's land, you might then go upon his land for the purpose.—K. C. T.

Cottage gardener's claims.—A took a cottage and garden for his private use on the condition that he should give it up at any time when it should be required for the use of an under gardener. He has now notice that it will be so required on the 29th of this month. Can he claim compensation for any work he has done to the garden or for anything he may choose to leave in it?—A. S. E.

*** Although a tenant at will, as it is called, A may claim compensation under the Allotments and Cottage Gardens Compensation for Crops Act, 1887, the provisions of which were fully explained in GARDENING for June 19th, on page 230. You should refer to that number, or get it from the publisher if you have not preserved it. Briefly, A may, on quitting, claim compensation for all ordinary crops growing in the garden when he quits, including fruit, if any fruit remains unripened, and for manure applied to any part of the garden since the taking of a crop from that part, and also for all work done to any land that has had a crop in preparation for another crop. Such work as digging can of course be claimed for.—K. C. T.

Questions by incoming tenant of farm.—I am taking to 100 acres of land this September. Will you tell me: 1, If the fallow is valued at so much per acre, or is the allowance for so many times ploughing? 2, Are Clover and hay valued at market prices or at so much per acre? 3, Is the straw valued by the ton or by the acre?—FARMER.

*** In your county (Leicestershire) Michaelmas tenancies are the exception and Ladyday tenancies are customary. But this does not much affect the answers to your questions. 1, The valuation for fallow proceeds upon the basis of paying the outgoer for the work he has done to the fallow, including ploughings, cultivatings (if any), the carting and spreading of manure (if any), and such other work as may have been done, and one year's rent, rates, and taxes, and tithe (if tithe has been paid by the outgoer) on the land fallowed. It is not the rule to allow a lump sum per acre independently of any consideration as to the work done

to the land. 2, These are not valued at market prices, but at consuming value. The consuming value is usually reckoned at per ton or per cubic yard, and is very seldom, or should very seldom, be valued by the acre. 3, Straw is generally valued in the same way as Clover and hay, although sometimes by the acre. In some districts no valuation is allowed for straw in the case of Michaelmas tenancies. Consuming value usually varies between full market value less the cost of transport, and half the market value. It may be generally taken as two-thirds the open market rate; but when hay and straw are very low in the markets the consuming value approximates closely to the market rates, and when the market rates are very high, as in times of scarcity, the consuming value may be only half the market rate. You must not suppose from this that the consuming value is a fixed sum per ton; it fluctuates with the markets, but in a less degree.—K. C. T.

Overhanging trees.—In my neighbour's garden there is a large tree, the branches of which overhang my property fully 6 feet and block the light from the top of my greenhouse. Can I cut off the overhanging boughs, or must I bring an action against my neighbour for deprivation of light and air? I am told I must first give him notice to remove the boughs, and that if he fails to do so I may cut them off and charge him with the cost of so doing.—C. J.

*** If you can cut off the overhanging boughs without going upon your neighbour's land for the purpose it is not legally necessary to give him any notice of your intention. But it will only be courteous to give him written notice, and if he declines or neglects to comply with the notice within a reasonable time you may then enter upon his land for the purpose. But it seems to me very doubtful whether you could recover from him the cost of cutting such branches, and I should not advise you to attempt to recover such cost. The branches when cut off will not become your property, and you should leave them on the boundary of your neighbour's land. You must be careful not to cut any part of the branches that do not overhang your land; all that you can do is to cut off the parts that actually overhang your land. I think an action for deprivation of light and air would fail.—K. C. T.

Disputes between neighbours.—My neighbour and I rent adjoining gardens, and when I entered there was no fence between the gardens. I put up the fence, my landlord finding the wood, and I found nails and labour. Three years ago the posts were broken off level with the ground through my neighbour tying his clothes-post to the fence with a cord which pulled the fence over. I then bought more posts and repaired the fence, which stands entirely on my land. Can I prevent my neighbour from fastening anything, either by cord or otherwise, to my fence?—Lancastrian.

*** As the fence is entirely on your land it is your fence, and your neighbour has no more right to meddle with it than he has to meddle with the garden itself. You should give him notice not to meddle with it in future, and if he persists in tying his post to it you may cut the cords or you may sue him for trespass. Your neighbour will also be liable to make good any damage he may cause by interfering with your fence.—K. C. T.

Question as to a ditch filled up by property owner.—I have bought a piece of garden ground, along one side of which there was once an open ditch, but which was filled up fifty years ago by my predecessor. My neighbour now claims the sum of two shillings a year from me, or he will open the ditch, and he wants me to sign an agreement to pay the sum of two shillings a year. I understand that he has made no claim for seven years past. The late owner never paid anything. Advice will oblige.—J. A.

*** To whom does the ground in which this ditch was cut, and in which the drain was laid, belong? If it is your ground no one can interfere with you, but the probability is that the site of the ditch belonged to your neighbour, who permitted your predecessor to fill it up fifty years ago. If your neighbour has never exercised any acts of ownership over the site of the ditch during fifty years, and your predecessor never paid anything in the shape of an acknowledgment, etc., your neighbour has now lost all right and site of the ditch. But in one place you say your predecessor never paid anything, and in another place you say your neighbour is now claiming after seven years, implying that, up to seven years ago, payment was actually made to him. I do not know which of the statements is accurate or how they are to be reconciled, so if you find there has been any payment by your predecessor within the last twelve years, I advise you to consult the solicitor who acted for you in the conveyance of the garden to you; but I should expect to find that you will have to pay the sum of two shillings a year demanded of you unless you want the ditch to be reopened. On the other hand, if nothing has been paid within the twelve years you may refuse to pay anything or to enter into any arrangement for paying anything, and as soon as your neighbour touches the land you may treat him as a trespasser.—K. C. T.

Removal of greenhouse.—If I erect a greenhouse in the garden of which I am a yearly tenant, and grow plants therein for sale as well as for pleasure, shall I be able to remove it when I quit?—S. H.

*** It does not appear whether you are a private occupier or not, but if you are a market gardener you may certainly remove the greenhouse when you quit. You must remember that the fact that you grow a few plants in the greenhouse for sale will not render you a market gardener, and the right of private occupiers to remove greenhouses is disputed. If you are a private occupier your better plan will be to place your greenhouse on the ground, and not in it, and to use no bricks and mortar in its construction. Or, if you do make a foundation of bricks and mortar, or build low walls, be careful to place the upper part of the building merely on the walls, and do not attach the upper part to those walls.—K. C. T.

Erection of greenhouse—consent of landlord.—Can I put up in my garden as a tenant's fixture a greenhouse wholly of wood without obtaining the consent of my landlord?—J. J. T.

*** Yes, the consent of your landlord is unnecessary, unless you have entered into a written agreement to make no alterations or erections without his consent.—K. C. T.

GARDEN WORK.*

Conservatory.

All the early Chrysanthemums will be under cover now, with air on night and day, but the ventilation should be given in such a way as to keep out rain. If the plants are kept out after the flower-buds show colour the flowers will probably damp and spoil. The fat, highly-fed flowers are difficult to keep unless a freely ventilated house can be given up to them, where a little fire can be used in damp weather. Go over climbers and reduce them still more, as the plants beneath will require all the light they can get now. Very little shade will be required now. Exhibitors of Chrysanthemums may possibly require to shade some special plant getting too forward, but this can generally be done by fixing a sheet of paper over it. Winter-flowering Heaths, such as gracilis, hyemalis, Caffra, cerinthoides coronata, and others will require a light, cool position. If taken to the conservatory place them at one end near the glass, and give a little more ventilation at that point. Among Tea Roses the new American variety Belle Siebrecht is sure to become popular as a pot plant. It has a full pink flower, substantial in character, and the plant is a vigorous grower. The Tree-Carnations are coming on, and when grouped by themselves thinly, with a base of Maiden-hair or other graceful Ferns, they are very effective, but the house must be kept cheerfully warm to suit these plants; indeed, a conservatory filled with choice flowering plants must have a little fire-heat now on cold nights and dull, damp days if the flowers are to be kept in good condition. Do the watering in the morning now when the lights can be opened to let out the damp. Avoid making any dust in the house, as floating dust must settle on leaves and flowers.

Stove.

Now that the stove plants have been gathered from other houses and pits it will probably be found that the house is not large enough to hold them comfortably, and it is better to discard a few things of the least value than run the risk of spoiling good specimens by overcrowding. Young stuff will do on shelves suspended at the back of the house, or from the roof where there is head room. Usually when the winter comes round every bit of space has to be made the most of. Some things, such as Caladiums and Gloxinias, will be going to rest, and the winter-blooming plants—Poinsettias, Euphorbias, etc.—will be coming on to take their place. The early-ripened Allamandas and other summer flowers may soon be shortened back to bring into greater prominence Passiflora princeps and other winter-flowering climbing plants. Night temperature now 60 degs. to 65 degs.

Mushroom-house.

This is the best season to make up Mushroom beds in buildings. The essentials of success are good stable-manure from horses fed on hard food, good spawn, and a building not too much influenced by outside atmospheric conditions. Then very little artificial heat is required, though if a succession of Mushrooms all through the winter is wanted it is better to have the means of keeping up a temperature of 55 degs. If it falls much below that in cold weather the production will fall off till the temperature rises again. Shake out the longest litter from the manure, and if kept in a dry place the litter will do for covering the beds to keep in the heat and moisture. The manure should be prepared in an open shed, or at least be protected from heavy rains. Lay the manure in a heap, so that there may be bulk enough to ferment, but as fermentation sets in turn it over, throwing the outsides of the heap into the middle. Two or three turnings will be necessary at intervals of three days if the manure is fresh. Another way is to mix one-fourth of loam with manure when fresh, and then one turning will be sufficient, as the soil, if dry, will absorb the surplus moisture. Build the bed up firmly, if against a wall, 15 inches at back and 12 inches at front. Three feet wide will be convenient for gathering the Mushrooms. Break up the spawn into pieces 2 inches or so in diameter, and insert just in the beds, 8 inches apart. Make all firm again, and when the spawn begins to run cover with 1½ inches of good loam and make firm. Spawn when the temperature of the bed is about 85 degs. or 90 degs., and not likely to rise.

Orchard-house.

This house will soon be wanted for Chrysanthemums, and all trees in pots from which the fruit has been gathered will be as well outside. If any trees require repotting this is the time to do it. Use the best loam, and add a little bone-meal and a little old manure. Ram the soil in firmly, as Peaches, and stone fruit generally, do best in firm soil. After potting stand the trees out on a bed of ashes, and when frost sets in place some long litter round the pots. They may remain outside till January.

Early Vinery.

The long spurs may be shortened a little to plump up back eyes. If necessary, dress the outside borders with bone-meal or some good manure. Keep off heavy rains by covering the borders outside with sheets of galvanised iron. Ventilate freely to give the Vines all the rest possible.

Ferns under Glass.

Get all the necessary potting done before the short days come. Prick off seedlings into shallow boxes. Use less moisture in the house where the fronds are required for cutting, and use as little shade as possible We cannot dispense with shade all at once, but shorten the periods of using it by rolling the blinds up earlier.

Window Gardening.

Boxes are beginning to look a little shabby. If it is intended to save the "Geraniums," etc, take them out, and fill the boxes with late-sown Asters or Wallflowers, edged with Forget-me-nots These will be much cheaper than shrubs, and will look almost as well. Indoor foliage plants must be frequently sponged to free them from dust now that fires are lighted again.

Outdoor Garden.

Prepare beds for herbaceous plants. Trench deeply and do not spare manure or compost. Plant bold groups of hardy bulbs. Tulips in colours, Daffodils in variety, Snowdrops, and Crocus may be dibbled in the lawn either in colours or in mixtures. Plant Scillas and Chionodoxas in warm, sunny spots in good-sized patches. They look well on the rockery. Plant Winter Aconites in broad masses about the shrubbery, preferably on shelving banks. Honesty (Lunaria biennis), Foxgloves, and the common Evening Primrose should be planted in masses in the semi-wild parts of the grounds. Appropriate spots for such things may be found in every garden. If planted now they will get strong and flower abundantly. The White Foxglove has a charming effect among dark-leaved shrubs. Alterations in the lawn may be carried out and new sites for Roses prepared by trenching and manuring. Try to get Carnations planted by the middle of October. When planted later the frost has more effect upon them. Laced Pinks should now be establishing themselves in the flowering beds. Masses of white Pinks may now be divided and replanted. Plant firmly and mulch with old Mushroom-beds broken up fine. Pot up tender plants from the beds. If there is a scarcity of "Geranium" cuttings, lift the old plants in good time and give them a little heat to start them. Growth made in heat will strike well soon after the new year's comes in.

Fruit Garden.

Good Strawberry runners are scarce, and many old beds will be left a year longer in consequence, or else old crowns if healthy, may be divided. I have used crowns from the best of the old plants and had good crops the next season. Nature suggests that the Strawberry should be propagated by runners, but when nature is not sufficiently productive, try crowns, and do the ground well and mulch on the surface. Those who desire to make a profit out of Gooseberry culture need not plant many kinds. Six sorts at the most will be sufficient, and for gathering green three kinds only will be better. Industry, Crown Bob, and Whitesmith cannot be beaten for green gathering. To these may be added, if more are wanted, Red Warrington for preserving, White Swan, Red and Green varieties of London, and Keepsake, a straw-coloured sort, good flavour when ripe, and also early for gathering green. Prepare land for bush fruits by trenching deeply and manuring liberally. Plants that, as a rule, bear heavy crops annually must have plenty of support. The past dry season has not suited Raspberries, especially when the plants have been badly nourished. Raspberries must have moisture, as their best-feeding roots are near the surface, and they must be fed there if the plants are to bear well. In a dry season Raspberries must be heavily mulched. Norwich Wonder, Baumforth's Seedling, and Superlative are good kinds.

Vegetable Garden.

Plant Cabbages for spring. Break a leaf over Cauliflowers turning in, or draw the leaves over the hearts, and put a strip of matting round. This will protect them from frost. Any Tomatoes outside had better be gathered and ripened indoors. The small green fruit may be pickled or made into jam. Fill spare frames with half-

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

grown Lettuces and Endives. Temperature of Cucumber-house at night should not be under 60 degs. A bottom-heat of 75 degs. to 80 degs. will be necessary. French Beans on south borders should be covered with tiffany on frosty nights. Beans in pits or frames should be covered at night, as frost may come any time now. Cucumbers in frames should also have warm coverings at night to keep them going as long as possible. Take up all Potatoes if the skins are set. When dried the tubers keep better in pits covered with straw and earth than in buildings. Windsor Castle and Up-to-Date varieties are turning out well and of good quality. Clear away all Potato haulm and other rubbish, and pass it through the fire to kill insects, mildew spores, and prevent it becoming a harbouring place for slugs and snails. Cut away the old bottom leaves of a part of the stock of Parsley to throw more vigour into the new foliage. Earth up Celery and Leeks when both the plants and soil are dry. E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 20th.—Turned potted trees out of orchard-house to make room for the Chrysanthemums. Repotted some of the trees and top-dressed others. Removed as much of the old soil as could be taken out without injuring the roots. Took inside the earliest Chrysanthemums. The lights will be left open all night. Trenched new beds intended for Roses. Added a good dressing of manure and some charred garden rubbish, as the soil is heavy. Cleared out Cucumbers which have been bearing all the summer, as we want the house for another purpose, and Cucumbers are coming on elsewhere.

September 21st.—Earthed up more Celery. Gathered Souvenir du Congrès Pears and several kinds of early Apples. Moved Heaths and some other hard-wooded plants into cool-house. Potted up a lot of "Geraniums" from reserve beds. Cuttings are scarce this season, and we shall have to strike others early in spring. Moved late Tuberoses to warm house. We want the flowers to come on faster. Cut back some of the shoots on early Vines. We must use the house for a time for Chrysanthemums. Thinned late Spinach, and ran the hoe through the surface.

September 22nd.—Loosened the tie from the last budded Roses, and rubbed off suckers and other shoots from the standards. Put in more cuttings of Roses on the north side of a wall. We are generally pretty successful with these. Planted a bed of Carnations, the layers being well rooted. Some later layers will wait a bit, possibly may remain on the plants till the spring. Moved Arum Lilies indoors. Gathered all the large Tomatoes from plants on south walls. Those not ripe will ripen in warm-house.

September 23rd.—Planted a small span-roofed house with Tomatoes to come early in the new year. Things move slowly in winter, but we shall get as many set as possible during the autumn months, and the plants are strong, and the house light and well heated. Finished lifting Potatoes. They will be stored in pits covered with straw and earth for a time. Planted another frame with Lettuce, the plants being strong, having been previously transplanted. Filled a frame in a shady position with cuttings of choice evergreen shrubs.

September 24th.—Tied leaves over Cauliflowers turning in. Cleared off exhausted Peas and Beans, and commenced trenching ground. Shall follow this up as time permits. A certain amount of trenching is done annually. Root-pruned several pyramid Pear-trees which are too vigorous. Cleared off exhausted annuals from flower borders. Planted large clumps of Daffodils about the lawn and shrubberies. We had several bushels of bulbs of sorts that were grown in boxes last year for cutting under glass.

September 25.—Moved a lot of early Chrysanthemums to conservatory to take the place of Begonias, etc., now off bloom. Did a little more to the climbers to let in more light. Trained in shoots of Tropæolum Fireball to cover as much space as possible with its bright flowers in winter. Brought in the stock of cuttings of bedding and other plants rooted outside. Filled a number of boxes with early-flowering bulbs for cutting. Narcissi and Tulips are the most useful.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Preserving French Beans for winter (*Mrs. L.*).—The Beans, whether French or Scarlet Runners, must be quite fresh. Cut off each end, just the tips only, put them into wide-mouthed bottles (they must not be washed) packing them in as evenly and lightly as possible, without bruising them. Mix on a plate a tablespoonful of soda and a tablespoonful of white sugar, with ½ lb. of salt. Pound these well together, put a heaped tablespoonful of the mixture into each bottle, fill up the bottle with cold water, and make thick corks of paper to keep in the steam while cooking. Put a newspaper at the bottom of a fish-kettle, wrap each bottle in several folds of the paper, put them into the fish-kettle, filling it with cold water up to the necks of the bottles, and bring the water slowly to the boil, letting it boil gently after it first boils up for fifteen minutes; then set the fish-kettle on the table until a little cool. Remove the paper corks, cover with wet bladder, and tie down securely. When quite cold store in a dark closet, and when wanted for use turn carefully out of the bottles into a basin; strain off the water, put the Beans into boiling water with a little butter and sugar, boil for five minutes, and serve as usual with fresh vegetables. Peas may be preserved in the same way. The bladders must be thoroughly cleansed with salt and Lemon-juice before used.—B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers (*which, with the exception of such as cannot well be classified, will be found in their different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1719—**Old Fig-tree** (*Lucy*).—It will not injure the Fig-tree to cut away any branches which may grow in the way of the garden-door.

1720—**Echeveria without glass** (*G. D.*).—Some few of them may be; but you give us no guide as to variety, and their requirements differ so widely.

1721—**Carnation decaying** (*B. Galway*).—We can find no trace of insect injuries, and you do not say a word about the conditions under which it is growing.

1722—**Unsatisfactory Pears** (*L.*).—The roots have got down into the subsoil. Lift the trees and get the roots to work nearer the surface, and the fruit will improve in quality.

1723—**Hydrangeas** (*Lucy*).—You do not name your locality. But Hydrangea paniculata grandiflora will do well on the banks of the lake, and Tritomas, if sheltered in cold winters.

1724—**Destroying earwigs** (*Backward*).—Earwigs can swim to the edges, and either crawl or fly out of the tub. Why put them into water at all, unless it is hot enough to kill at once?

1725—**Pyrethrums not flowering** (*Nemo*).—These do not usually flower a second time during the same year, but if you had cut them down more it might have tended to that result.

1726—**Cutting fruit-trees** (*J. Bonny*).—Wait until the leaf has fallen, then cut back the leader at A, as you suggest. Do not prune the Plums so hard. See our note in the issue for Sept. 11.

1727—**Getting rid of Fern** (*Wood*).—Dig over the soil deeply and pick the rhizomes out, when you will soon get rid of it, as it has a great objection to disturbance, even where growing naturally.

1728—**"Geranium" cuttings** (*Sharps*).—Such cuttings are much better than those from the open, being less succulent. You can put them in at any time up to the end of October, commencing again early in February.

1729—**Diseased Tomatoes** (*B. Darley*).—The Tomatoes are suffering from Potato disease, caused by the fact that during the late cold and wet weather you have failed to give them any fire-heat, which would have prevented it.

1730—**Watering Rose-trees** (*A. B.*).—It would probably not be necessary to water your tree more often than once a fortnight, unless in very active growth. Do not stop the shoot now, but cut off the immature tip next January.

1731—**Keeping Dahlia bulbs** (*W. Howieson*).—Any fairly dry and frost-proof cellar would do for these, especially if the tubers are not kept too dark. You can part off next May when planting again, and after the new shoots have commenced growing.

1732—**Trellis for Roses** (*T. B.*).—Your idea of a trellis is very good. Plant such hardy Roses as Gloire de Dijon, William Allen Richardson, Emilie Dupuy, Cheshunt Hybrid, Aimée Vibert, and Kaiserin Frederick. These will give good variety of colours.

1733—**Heating greenhouse** (*Ajax*).—We would suggest a small boiler being connected with the pipes, heating this by aid of an oil-stove, such as a Beatrice. You do not say how much piping, nor the size, but one of these stoves will give considerable heat.

1734—**Poplars throwing up suckers** (*Hope*).—We do not think you need fear the undermining to such an extent; but you will do well to grub out the suckers as soon as they appear, it only to check them from robbing the flower border. The Poplar is a very hungry feeder.

1735—**Mossy paths** (*H. A. S.*).—Moss will not grow upon very sandy soil, nor will it withstand the prolonged summer drought you mention. You cannot possibly have Mossy paths under the conditions set forth. Far better have a good gravel, as even Grass or turf would surely fail.

1736—**Moss-litter manure** (*R. D.*).—Moss-litter alone is not suitable for a hot-bed. It is not sufficiently durable, and it is difficult to build up a bed with it. Try to get some straw-litter to work round the sides of the bed and to mix with the Moss-litter. You might be successful with half of each.

1737—**Protecting shrubs from rabbits** (*Wood*).—Most trees and shrubs in a young state are eaten by rabbits, some seasons much more than others. Could you not lessen the rabbits, or plant larger trees? You would do well to ask a local gamekeeper what has proved the best remedy in your district.

1738—**Growing Amaryllis** (*An Old Subscriber*).—We suppose you mean Hippeastrums, and you will find it much better to leave these undisturbed, as any parting of the bulbs and offsets means removal from the pots, and separating the fleshy roots. This is much resented, and it frequently happens that a strong offset will flower.

1739—**Coleus plants in winter** (*A. Macmillan*).—Unless you have considerable heat you will not succeed in keeping these through the winter. They are propagated in spring and summer. Refer to our propagating notes in the issues for March 13 and 27, where illustrated articles upon soft-wooded plants are given.

1740—**Begonias reverting** (*South*).—Are you quite sure a few tubers of single-flowered varieties were not also divided in error? We have not found doubles revert to single form when increased by division or cuttings, and feel almost certain the explanation lies in the direction indicated.

1741—**Chrysanthemums not flowering** (*Novice*).—It is very early for many varieties yet, and we do not see why yours should not bloom in due course. They will naturally be rather later than others, but if they appear healthy, and you continue the same treatment, you will be rewarded by-and-bye.

1742—**Climbing Roses** (*Novice*).—Your lawn query will be dealt with in a separate note. You might choose from either of the following climbing Roses: Gloire de Dijon, W. A. Richardson, Climbing Perle des Jardins, Emilie Dupuy, Mme. Bérard, Reine Marie Henriette, and Aimée Vibert. These would give a good change of colour.

1743—**Treatment for Cyclamens** (*Venus*).—Repot your Cyclamen now, using a 5½-inch pot, and the same compost that you have been so successful with. Do not dry off, but afford a warm greenhouse treatment after the end of November. You have treated them very well, and we feel sure will have a good display early in the spring.

1744—**Name of Dahlia** (*Luke Benson*).—We have looked through several lists and do not find the name you mention. Dahlias increase in variety so enormously every year that we cannot undertake to hunt up names. Write to Messrs. Cheal, Crawley; Messrs. Cannell of Swanley; or other well-known growers; they may remember the variety.

1745—**Constructing propagator** (*G. White*).—We will gladly help you if you will let us know a little of the class of plants you wish to propagate. For example, are they ordinary greenhouse subjects, such as the Fuchsia, Bouvardia, and Coleus; or do you mean the heat-loving subjects; and also about how large do you propose to have it?

1746—**Growing Tuberoses** (*M. B. Athy*).—(1) There are many plans of growing the flowers, and it depends chiefly upon your conveniences and the time bloom is wanted. (2) Allow your Rose to get well ripened before removing to the greenhouse from the open. We should only shorten back the strongest growths, and do this when transplanting.

1747—**Vines making young growths** (*T. G.*).—There is no harm in a little growth now, especially if you afford ample ventilation; indeed, you should give all you possibly can now that the crop is secured. Cover the border with a little loose litter or stable-dung in winter only. Rain, unless to great excess, will not harm at this or any other season.

1748—**Unsatisfactory Gladioli** (*Abbey*).—You would do better to lift these each autumn. Cut down to within a foot or so of the bulb after it has died down somewhat, then lift and store in a dry place after a few days' exposure to a drying air, not necessarily sun; nor does it matter how long, so as the crown of the corm has become matured enough for the remainder of the flower-spike to fall.

1749—**Stone fruits in pots** (*Stanley Tatham*).—Stone fruits, including Peaches and Nectarines, can be—in fact, are—successfully grown in pots, but to go fully into the matter would occupy more space than could be spared here; but as the season for commencing their cultivation is near, no doubt the matter will be fully treated of, and you will see something about it in the "Week's Work" from time to time.

1750—**Grapes not colouring properly** (*Omega*).—We expect your Vine is Muscat of Alexandria, and this does not colour or finish well unless judiciously managed. You give us no data as regards ventilation and heat. It depends too upon the backward or forward condition of your crop. Far better ask some practical head gardener in your neighbourhood, and cease such heavy cropping. All Vines need much limiting in this respect.

1751—**Growing Ampelopsis Veitchi** (*E. L.*).—Small pieces of ripened growth of the previous summer are cut up into 4-inch lengths, and inserted in a sandy compost as soon as the leaf is off. Several are put into a 5-inch pot, and then stood in a close temperature of 55 degs. Pot off the following summer. You can root young sucker-like shoots in summer, if inserted in a sandy soil and partially shaded.

1752—**Keeping moths from Apple-trees** (*Alice*).—We have seen a mixture that is put upon paper bands, and these placed around the stems of fruit-trees late in autumn, the object being to prevent the moths from crawling up the stems. It was certainly efficient in that instance, but we regret not to know the name of the mixture, nor by whom supplied. If much troubled with the maggot we should use grease.

1753—**Growing Gentians** (*Mrs. Butler*).—The Gentians are not easy plants to grow artificially, and all of them have a great objection to root disturbance. G. acaulis—the Gentianella—is one of the easiest. The soil should be moist and yet well drained. Rather a stiff loam suits it best, and this should be very firm. By no means replant, but help with a top dressing of some manures, choosing these according to the nature of your soil.

1754—**Lily of the Valley not flowering.**—I have had a patch of Lily of the Valley for the last four years which has never produced any flowers to speak of, only one or two blooms in any year. I put some 2 inches or 3 inches of fresh mould over them some two years ago, so that they are now planted about 4 inches or 5 inches deep. Would their being planted so deeply interfere with their flowering? When would be the best time to re-make the bed? I should prefer to do so now, as I am rearranging the border in which they are situated. Would it be a suitable time now, or within the next three or four weeks, to replant them? And should they be replanted in clumps, or each plant separately? How deep should they be planted? I do not want to leave the re-making of the bed until next spring, if possible.—FRITZ.

*** *Plant now (3 inches is deep enough), and you may plant in clusters or single crowns, it is quite immaterial. Were yours imported crowns or forced clumps, in the first place? These are of little use.*

1755—**Growing large Onions.**—What is the largest and best Onion grown in the ordinary garden? Will they grow in any medium soil, and do they want much dung-manure? I want to try to grow some of the largest kinds. Will a reader of GARDENING tell me when they should be sown and how to deal with them when they shoot up for having a crop, say, at the end of the summer?—THOMAS MILWARD.

*** *Ailsa Craig, Improved Wroxton, and Inwood Favourite are among the best. Either sow in August and transplant early in spring, or sow in a mild heat in January and then transplant. The first method is best for those known as Tripoli varieties. Dig up your ground roughly now, previously giving a thorough dressing of night-soil or pig-manure. Early in January dress down the soil and give a layer of soot. Make the ground firm early in March, and either plant out the seedlings or sow seed upon the ground in shallow drills a foot or so apart, thinning out; cultivating at the surface all through the summer. The Onion enjoys a rich soil that has not too fresh a manure intermixed.*

1756—**Planting Tritomas, etc.**—Will you kindly inform me in the columns of your next issue—1, Best time for plantiog Tritomas? 2, Best time for planting Pampas Grass? 3, The time for taking cuttings from Genista Andreana, and should they be struck in heat? 4, The best time for planting Dodecatheons?—R. L. ROUTH.

*** *1 and 2, We consider October to be the best time for planting Tritomas and Pampas Grass, as the plants can then get a good hold of the new soil before the roots go to rest. Some advocate spring planting; but if an exceptionally dry summer follows, the plants, not having had sufficient time to obtain root-hold, feel its effects severely, and, if they do not die, make no progress till after the autumnal rains have set in. 3, Now is a good time to take cuttings of Genista Andreana. They should be taken with a heel, inserted in sandy soil, and kept close until rooted. It is not necessary to use heat in striking them. The best method is to cover the cuttings with a bell-glass in ordinary greenhouse temperature. The cuttings take a long time to strike, but probably some may be rooted by the spring. Most plants of this Genista are worked on the Laburnum. From seed a fair proportion comes true. 4, February is the best time for transplanting Dodecatheons.*

1757—**Propagating Irish Ivy.**—I shall be obliged if you will let me know the best time and method of propagating Irish Ivy from cuttings? I have two walls thickly covered and am desirous of covering another.—J. M. D.

*** *You can root these at any time of the year, but early spring is about the best. Take off a shoot 6 inches long, and insert in a sandy soil. You might root the cuttings by the wall, especially if a little sand be carefully mixed with the soil the cutting is placed into.*

1758—**Treatment of Yews.**—How should I treat Yews of six years' growth and of two? I want them to grow very thick for a hedge. I do not care about height.—R. A. B.

*** *We presume you mean English Yews, as you mention hedges. Plant about a foot apart for the six-year-old plants. Yews two years old are not large enough to commence a hedge; nor would we take the older ones from nursery rows for another four or five years. Simply cultivate between them well in the meantime.*

1759—**Flowering climbers for garden arch.**—I should be glad if you will tell me in your useful paper, GARDENING, what flowering climber you would advise me to plant for an iron arch over garden path, aspect north to south. I have had Virginian Creeper, but that makes too much leafage. I want Climbers that will flower well Please state the best time for planting?—A. E, *Norwood.*

*** *Bignonia grandiflora, Ceanothus hybridus cœruleus, Clematises, Honeysuckles, Roses, Wistaria sinensis; in fact, the number is very great. Will you please say what colour, and if you prefer evergreens? All might be planted now, or at any time, seeing that they are kept in pots with that object.*

1760—**Rose-trees blighted.**—I have perhaps 6 doz. standard Rose-trees (good kinds). They were well cut down by an experienced gardener early in March, and the first bloom was good, but since then they are all blighted very badly. Can you recommend a remedy for the future? I watered them well during the hot weather with ordinary tap-water.—H. C. CHAMBERS.

*** *Send a few leaves or twigs, and we can then better decide upon the disease; at present you are too vague. Read our notes upon "Enemies of Roses" in this issue for Aug. 21.*

1761—**White Lapageria not flowering.**—I have a large plant of the above which was moved carefully into a larger house about 1½ years ago. It flowered last year, but has not done so this year, and has shed all the leaves for 3 feet or 4 feet from the ground. Should I cut it down, to what extent, and when?—A CONSTANT SUBSCRIBER.

*** *If the wood is alive do not cut it down. There is something wrong either with your compost or watering. If the plant keeps alive it may flower well next year, provided you can alter the error in watering or compost. You give us no guide in that respect.*

1762—**Stephanotis not flowering.**—I have a Stephanotis floribunda in my stove that has been growing for six years, and has never produced one blossom. The plant is very healthy, and makes good growth every summer. It is potted in good soil, as recommended, and kept drier and cooler in winter. Allamandas, Jasminum gracillimum, and Ferns flourish in the same house. The Stephanotis is in a very large pot, and is pot-bound. Please suggest how it can be made to blossom?—SANDBOURNE.

*** *If you succeed with Allamandas and similar plants, and your Stephanotis is growing so healthily, it is difficult to account for its not flowering. You seem to be treating it similar to our most successful growers. Do not dry it off too much, and if you can afford a little more heat in winter it may remedy the matter.*

1763—**Removing Pyrethrums etc.**—May I remove Pyrethrums, Pinks, and Phloxes next month?—NEMO.

*** *Yes; you could not well have a better time, if done early in the month.*

1764—**Single Tulips for forcing.**—Oblige by informing me in early issue the names of the best white, yellow, and red Single Tulips for forcing, characterised by long stalks for cutting?—H. W. SMITH.

*** *The white, yellow, and red Duc Van Thol varieties are mostly used by market growers. It is a question of heat and darkness for sufficient time, as regards height.*

1765—**Moving Tuberous Begonias.**—Could I move flowering Tuberous Begonias into pots for the greenhouse, and if so how long would the bloom and foliage last? At present they are in garden beds.—BACKWARD.

*** *Not unless you lifted them very carefully, and even then they would probably drop many leaves and flowers, while they would not last more than six weeks. Lift after the growth has died down, and store the tubers for another season.*

1766—**Removing Conifers.**—Please say if I can safely transplant these now and oblige?—SPRINGFIELD.

*** *Yes, if you take care they do not suffer from want of water in the event of a few weeks' dry weather setting in. Your query upon lawns will be fully answered in an early article.*

1767—**Roses from cuttings.**—How long do Roses from cuttings take to root? They are in pots in a box covered with glass. Please give me the names of a few pure White Roses suitable for front garden facing south, and also for pot culture in a window? Double Roses, please.—ARCHIE.

*** *Generally about two months, but you do not say if green or ripened wood is used. It depends upon the condition and heat. You cannot do much with pot-Roses in a window; they are one of the most unsuitable subjects for such a position. Boule de Neige, Niphetos, Souvenir de S. A. Prince, The Bride, and Mme. Plantier are good Roses of the purest whites we have.*

1768—**Cutting down Dahlias.**—Please say when Dahlias ought to be cut down after the frost has done its deadly work? Also say when the tubers ought to be lifted, and what you think is the best method for keeping them through the winter?—W. AITCH

*** *If you leave the Dahlias long enough for the frost to do "deadly" work it is quite immaterial when you cut them down. Cut off as soon as the foliage is blackened, and store the tubers upon a fairly dry shelf in a cool, but frost-proof shed. If in the greenhouse, or too warm a shed, they will commence growing again prematurely.*

1769—**Moving Rhododendrons.**—I have a lot of good old bushy Rhododendron-trees which I am thinking of removing. Will it be safe to do so, and when?—FERNDALE.

*** *If carefully moved the Rhododendrons ought not to suffer much from the shift. It would be best to cut round each bush at a distance of 3 feet from the stem, with a sharp spade, going perpendicularly down to a depth of at least 2 feet 6 inches, then cut underneath the ball until all the anchoring roots are severed, and remove the bush with as much of the ball of earth as possible, to the new position, which must be ready to receive it at once. Fill in the hole with peat or leaf-mould, and make it firm. If the weather is at all inclined to be dry, give a copious soaking of water, and mulch heavily with long manure, rough leaf-soil, peat-moss, or some similar substance which will conserve the moisture. Early October would be a good season to carry out the removal, as the roots will have time to get hold of the soil before the commencement of the cold weather.*

1770—**Fuchsias blooming in January.**—In a recent issue of GARDENING I read with interest some notes on Fuchsias, and their repeated blooming. I have some fine plants which about two weeks ago were turned out into the open (not planted) as their beauty was over. Can I treat these plants so that they will bloom in January or February?—ALICE.

*** *Yes, if lifted soon and placed into a warm-house; but they would be better in March if not hurried too much.*

1771—**Keeping Maiden-hair Ferns during winter.**—I have just bought at a sale three Maiden-hair Ferns in pots. I have no greenhouse. How can I keep them through winter? Shall I let them die down, or how?—T. EDWARDS.

*** *Keep them in a living room as free from gas as possible. Do not over water. You cannot prevent them from dying down, but they will produce new fronds next spring.*

1772—**Brugmansia.**—I have three Brugmansias planted in the border inside a vinery. They grew and produced splendid foliage, but only one flower. Lately the leaves have got red-spider; they are breaking out at every joint. Temperature never lower than 50 degs. Shall I let them alone, cut them down, give them another position, pot them, or what shall I do to get the best results next year. They are quite 3 feet high.—A. N., *Belfast.*

*** *Lift and pot. You are giving them too much root liberty and treating them too liberally. This is the cause of such luxuriant growth at the expense of blossom.*

1773—**Duckweed on a pond.**—Can you kindly inform me how to get rid of Duckweed on a pond, where the water supply is not sufficient to keep it constantly flushed? Skimming takes a great deal of time, and is of no permanent use. Ducks are not desirable in a garden, and sea gulls eat the young greens.—BALSAMS.

*** *If you cannot have ducks it is quite impossible to rid your pond of this weed (Lemna). Constant and very frequent skimming will check it a great deal. Perhaps some of our correspondents can say if they have ever succeeded under like circumstances? Could you not have some ornamental water-fowl that would not encroach upon the garden?*

1774—**Victoria Plums cracking.**—I have a Victoria Plum-tree, four years old, and about a fortnight or so before the fruit is ripe enough to be pulled the Plums crack and the centre part begins to run. Can you tell me the cause or give me any cure? I have mulched the roots with stable-manure every winter, and there is a moderate amount of fruit on it each year. This year there was half-a-dozen Plums on it, while I had no crop on others at all.—AMATEUR.

*** *You seem to be treating your young tree too generously. A clayey and cold soil would also tend to splitting of fruit. Do not feed it so liberally.*

1775—**Magnolia.**—I have a Magnolia planted against the wall of my house, facing the south. The whole length is protected by a verandah, which has a glass roof rising to the sill of the first-floor windows. The Magnolia is of luxuriant growth, and bears a profusion of flowers. It now fills every available space, and, I fear, will shortly suffer from the check to its extensions. May that check be safely avoided by removing a pane of glass, and allowing egress to the Magnolia shoots, and further growth between the first-floor windows and above them?—R. D.

*** *As the plant is thriving so well beneath the verandah, we see no reason why you should not succeed in taking a few shoots to the upper portion of your house as suggested. It would not harm the lower portion even if it did not succeed.*

1776—**Treatment of Lilium auratum after flowering.**—Please inform me as to the right treatment of a Lilium auratum, grown in a pot, after flowering. Is there any book on Lily culture? Please say price, and where obtained, and oblige?—ARCHIE.

*** *Allow the plant to dry off gradually, and then store the bulb in a cool and dry place until it is time to repot. Write to Wallace and Co., Colchester, for Dr. Wallace's "Notes on Lilies and their Culture," post free, 4s. 6d.*

1777—**Planting Palm seeds.**—What is the best method of planting Palm seeds to bring them away quickly, as the kernel is very hard?—NURSERY.

*** *Soak them for forty-eight hours in tepid, soft water. Most Palms need considerable heat to germinate their seeds, and in very few cases do they grow quickly.*

1778—**Chrysanthemum Mme. Carnot.**—Which pot wou'd Mme. Carnot Chrysanthemum do best in: 24's or 32's? I have heard it will do best in the latter.—W. W.

*** *This depends upon how large you wish the plant, whether for many, or for one or two exhibition flowers; also very much upon the treatment and quality of compost. We should prefer a 24, or even a 16 size.*

1779—**Annual digging.**—Mine is cold subsoil on Yorkshire coast. Do you recommend annual digging in this case?—NEMO.

*** *All the more so, and a dressing of stable-manure in spring. Laying such a soil up rough and exposed to winter weather will benefit it very much.*

1780—**Culture of Oleanders.**—I should be very grateful for information on this subject? I bought a nice young Oleander, potted it in a mixture of loam, peat, leaf-mould, and sand, watered it constantly, and took great care of it, and its fine bunches of buds shrivelled and fell off without coming into bloom. It was in a cold greenhouse during the winter and spring, out-of-doors in the summer.—E. M. L. B.

*** *The culture of the Oleander is very simple, and from the account forwarded, "E. M. L. B.'s" treatment should have been crowned with success. It is difficult to say where the fault lay, without fuller knowledge. Perhaps the watering was too constant and the soil became sour. Over-potting and a too copious water supply would be detrimental. When these plants are watered, a good soaking should be given, and the soil should then be allowed to become almost dry before the next watering. This applies to almost all greenhouse plants. Slight and frequent waterings merely moisten the upper part of the soil, the lower portion often remaining dust dry. Many plants fail from this cause unknown to their owners, who are confident that, whatever else might have been lacking, ample water has been given. "E. M. L. B" had better examine the roots. If these are healthy and have filled the pot, given care in watering the plant should bloom next year. If the roots have not utilised the space afforded, and the soil appears sour, the plant should be placed in a smaller pot in fresh soil. Loam, peat, leaf-mould, and sand could not be improved upon.*

1781—**Hedging lawn-tennis ground.**—I wish to hedge round a lawn-tennis ground, aspect south, soil sandy and poor. Would Pyracantha answer? The hedge would be planted on the top of a bank 6 feet high. Would Pyracantha stand clipping, and is it evergreen?—H. A. E.

*** *Cratægus Pyracantha is an evergreen, and if not clipped too hard would be suitable for your purpose. You give no idea of the desired height of the hedge, but if not more than 2 feet, we would prefer the Olearia Haasti, as being both evergreen and floriferous. It would look well upon a bank, and probably be high enough for your purpose.*

NAMES OF PLANTS AND FRUITS.

*** ***Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, W.C.***

Names of plants.—*Signor.*—It is impossible to name a plant from the miserable specimen sent.——*J. T. L.*—We do not name florists' flowers.—*D. Evans.*—1, Smilax aspera; 2, Euonymus japonicus aureus; 3, Pyrus Malus floribunda; 4, Erica sp.; 5, Monarda didyma; 6, Tradescantia zebrina.——*A. Low.*—Send a better specimen; it arrived smashed.——*A. Collins.*—See foregoing reply.——*A. Juno.*—Campanula Medium, quite hardy.——*E. B.*—The so-called Mummy Pea; of no value whatever.——*W. T.*—Vallota purpurea; 2, Send in

flower; 3, Sparmannia africana; 4, Bougainvillea glabra; 5, Leycesteria formosa.——*Mrs. F. F.*—1, Aster Amellus; 2, Aster acris; 4, Phygelius capensis; 5, Lilium chalcedonicum; 6, Helenium rigidum.——*Samuel Smith.*—1, A Ribes species; 2, Insufficient specimen; 3, Thuja aurea; 4, Ruscus androgynus; 5, Salisburia adiantifolia; 6, Cassia floribunda.——*Bob.*—1, Achillea Ptarmica (The Pearl); 2, Heliopsis lævis; 3 and 4, Send fertile fronds.——*W. Cameron.*—Impossible to name from such scraps.——*J. W.*—1, Habrothamnus elegans; 3, Bougainvillea glabra; 4 and 5, Numbers mixed. Pink, Acalypha musaica; green, Alocasia metallica. —— *Phyllis.*—One of the Acroclineums.——*L. Ll.*—Hexacentris rosea.——*A Constant Reader.*—1, Pteris longifolia; 2, Acalypha musaica. The border your Vine roots are in wants remaking in all probability.——*L. P.*—Impossible to tell from the smashed scrap sent.——*E. M. J., J. A. Dearden,* and *I. M.*—Please send again.——*E. J. F.*—Send a better frond.——*An Amateur.*—Please observe our rules.——*D. Drummond.*—The Ferns arrived smashed flat. Please send fresh specimens if you wish us to identify them.

Names of fruit.—*W. L.*—You did not attach the numbers properly, and they all got mixed. The biggest kind is Cellini, and the second Lady Sudeley. We do not recognise the smallest.——*Ignorant.*—Apples: 1, Hawthornden; 2, Colonel Vaughan; 3, Not recognised; 4, Cellini; 5, Yellow Ingestre; 7, Golden Pippin. Pears: 1, Clapps' Favourite; 2, Forelle.——*W. S. Campbell & Son.*—Plum Purple Gage.——*Mac.*—2, Louise Bonne; 6, apparently Marie Louise. Send better specimens, and two of each.——*H. B.*—It is utterly impossible to name from specimens sent. We do not undertake to name more than four in one week, and of these we must have at least two typical specimens. Those sent are not characteristic. The name of the flowering shrub is Althæa frutex ——*Mrs. Seymour.*—Pear Durondeau, either for dessert or cooking. ——*D. F.*—1, Dutch Codlin; 2, Probably Norfolk Beaufin; 3, Alfriston; 5, Hawthornden. We do not name more than four sorts at once ——*G. Ormiston.*—13, Probably bad specimen of King of Pippins; 14, Alfriston; 16, Norfolk Beaufin. See reply to "D. F." and "H B."

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

L H. R.—We certainly cannot recommend you anything to destroy your neighbour's property. If your neighbour's tree overhangs your garden, you have your remedy. —— *Sweet Briar.*—We do not answer anonymous queries.——*Lynton.*—Thrips. The plants are kept too dry both at the root and on top. Stand them out-of-doors till the frost comes. There is no limit to their age.——*Abbey.*—Common in woods in England; there is no sale for it. ——*H. S.*—3, Cut it back after flowering; 4, Yes. Your other queries are answered elsewhere in the paper.—— *H. A. E.*—How can we give you a satisfactory reply without knowing the size of your slopes?——*T. J. E.*—You really must tell us something of what you propose propagating before we can give any reply respecting temperature required.——*T. S.*—Your Rose is simply one mass of green-fly. —— *Une Constante Lecteur.*—Kindly comply with our rules. —*L.*—Try Boulton and Paul or Barnards Ltd. of Norwich, Braby & Co. of Euston-road, London, or Bayliss, Jones, & Bayliss of Wolverhampton.

Catalogue received—*Bulbs.*—Messrs. Ant. Roozen and Sons, Overveen, near Haarlem, Holland.

VIOLETS.—Czar, 24, 1s. 4d.; King of Violets, double indigo, 15, 1s. 3d.; double red, 15, 1s. 3d.; double white, 15, 1s. 3d., all hardy. Winter Cherry (Physalis), 15, 1s. Solomon's Seal, 12, 1s. 3d. Doronicum Harpur-Crewe, 12, 1s. 3d. Fuchsias, crimson, hardy, 6, 1s. 3d. Yellow Day Lilies, 12, 1s. 3d. Anemones (French), mixed, 36, 1s. Pansies, yellow or mixed, 20, 1s. Jacob's Ladder, blue, 4, 1s. 3d., free. —KATE, Harley Park, Callan, Ireland.

HARDY PERENNIALS. — 200 varieties. Cheap. Catalogue free. Yellow perennial Foxgloves, 20, 1s. 3d. Montbretias, scarlet, orange, 20, 1s. Sulphur perennial Marguerite, also white, 12, 1s. 3d. Hardy crimson Afghan Lily, 15, 1s. Double white Primroses, 12, 1s. 6d. Gentiana acaulis, 15, 1s. 3d. Lobelia cardinalis, 4, 1s. 3d. Canterbury Bells (Sutton), best mixed, 30, 1s. 3d., free.—KATE, Harley Park, Callan, Ireland.

EARLY-FLOWERING PRIMROSES, 100, 1s. 6d. Small-leaved Ivy, rapid grower, 100, 1s. 4d. 15 Perennial Phlox, 4 named varieties, 1s. 4d. 40 Rockery Plants, 4 named varieties, 1s. 4d. 20 Perennial Sunflowers, 4 named varieties, 1s. 4d. 4 Christmas Roses, 1s. 4d. Auriculas, 12, 1s. 6d. Osterach Ferns, 20, 1s 3d. Rose Sharon (St. John's-wort), 12, 1s. 6d., free.—KATE, Harley Park, Callan, Ireland.

FERNS.—Evergreen, 12 vars., fit for any decoration, 2s. 6d., free. Price List of all known British Ferns, 2d.—O'KELLY, Ballyvaughan, co Clare.

SURPLUS PLANTS for Autumn Blooming.—12 lovely Primulas, all colours, 10 grand Cinerarias, 12 everblooming Primula obconica, 12 Primula floribunda, yellow, a real gem, 4 fine Spotted Calceolarias, 4 Arum Lilies; 54 strong plants, 4s. 6d., free. 6 charming winter and everblooming Begonias, always beautiful, gratis with order. Half lot, 2s. 6d.; quarter lot, 1s. 6d., free.—HEAD GARDENER, 46, Warwick-road, Banbury.

CHOICE CARNATIONS. — Surplus layers of newest and best varieties, including Mrs. Eric Hambro, Lady Nina Balfour, Pink Beauty, Hayes' Scarlet, Mephisto, Miss Audrey Campbell, Countess of Jersey, &c. Lists on application.—SERGENCSON, Formby, Lancashire

CARNATIONS. —Special Offer.—Warranted well-rooted layers from a good Collection, from 3s. per doz.—E. O. HILLS, Fareham, Hants.

RARE CACTI, strong rooted plants. List on application.—MRS. BRAMWELL, Woodside, Eastleigh, near Southampton.

ROSES, &c.—Largest, grandest, cheapest, 50 var., 16s.; 24 var., 8s.; 12 var., 3s. 3 Climbing red, white, pink, 1s. Clematis all colours, with grand crimson, new yellow, 10 var., 3s.; 5 var., 1s. 6d.; 3 var., 1s. Carnations, 9, 1s. extra strong, free. List.—BROUNT, Crowboro', Sussex.

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Special Offer. All Best Quality.

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24s. per dozen.

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TRAINED ,, 3s. 6d. each; 35s. per dozen.

GARAWAY & CO.,
Nurseries, Clifton, Bristol.

LILY OF THE VALLEY PIPS.

The undersigned are open to undertake the purchase of Lily of the Valley Pips for a first-class Firm, and can supply the very best qualities by reason of their intimate connections with the most renowned cultivators of the "Mark" District. —SCHULTZE & PFEIL, Seed Merchants Rathenow, (Brandenburg).

100 ORNAMENTAL Flowering Shrubs and Conifers, from 9 in. to 2½ ft., carriage paid, for 10s 6d., to include Cedrus Deodara, Cupressus, Euonymus, Pinus, Abies, Ivies, Thuja, Syringa, Deutzia, climbing Roses, &c., all strong plants.—HENRY & CO, nr. Amersham, Bucks.

MATCHLESS ZONALS, Pearson's 1896 var. —Cassiope, Wolseley, G. Reid, Iris, Iseult, Zenobia, Mrs. Linzee, Phyllis, Trilby, Virginia, 8d. each; or set of 10 for 6s 3d., free.—HENRY & CO, near Amersham, Bucks.

MATCHLESS YELLOW CLEMATIS (graveolens), strong plants, 3 for 1s. 3d. Ampelopsis Veitchi, true, 3 years, 4, 1s. 3d.; 2s. doz. Bignonia radicans, splendid scarlet flowering climbers, 4, 1s. 2d., all free.—HENRY & CO., near Amersham, Bucks.

1,000 STRONG LETTUCE PLANTS, outdoors growing, sent free, 5s.; 500, 3s.; 200, 1s. 6d.; 100, 1s., free. Parsley, Cabbage, Brussel Sprouts, Leeks, Curly Green Kale, all same price, on rail. Lavender plants, 6, free, 1s. 6d.—J. HOLE, Brimley-avenue, Teignmouth, Devon.

GARDENERS AND OTHERS.—Surplus stock Echeveria wanted. State quantity and lowest price per 1,000.—W. TURNER, 14, Church-lane, Lr. Edmonton, N.

CARNATIONS.—1s. 6d. doz.: H. K Hales, Raby Castle, Salisbury Do., 2s. 6d. doz.: Crimson Clove, Duchess of Fife Rushden Beauty, Redbrae, Grenadin, Mrs Muir. Do., 3s 6d. doz: Germania, Gloire de Nancy, Mrs. Reynolds Hole, Mrs. Frank Watts, Queen of Bedders. Do., 4s. 6d. doz.: The Duke, Salamander, King of Scarlets, Kelsie, Uriah Pike. Do., 5s. 6d. doz.: May Queen, La Vilette, Alice Ayres, J. F. Bryant, Dundas Scarlet, Rose Celestial. One doz., car. free.—J. LANGFORD, Florist, Withington, Manchester.

AMARYLLIS! AMARYLLIS! AMARYLLIS!—Gigantic bulbs, perfectly sound, in grand condition. These superb bulbs weigh 10, 12, and 14 ozs., and measure 10, 12, and 14 inches in circumference, bearing immense spikes of sweet, fragrant salmon, pink, and other beautiful colours. Now is the proper time to plant these lovely Amaryllis for flowering in November, January, and April. Special offer: 1st size bulbs, 3 for 7s.; 2nd size, 3 for 4s 6d.; 3rd size, 3 for 3s. 3d. All carriage free.—Address WHOLESALE FLORAL DEPOT, 28, Paradise-street, Liverpool.

PLANTS FOR AUTUMN PLANTING, in large or small quantities.—Ellam's Cabbage, Savoy & Sprouts, Spring and Autumn Cauliflower, White and Purple-sprouting Broccoli, Curled Kale, Rag Jack, fine picked plants, 100, 1s., free; 200, 1s. 6d., free; 300, 2s., free; or 3s. 1,000, put on rail; special price for quantities over 1,000. Or Cabbage, Thousand Head, Kohl Rabi. 2s. 1,000, put on rail. Leeks Musselburgh, 200, free, 1s. 6d. Wallflower, Blood-red and yellow, 1s. 6d. 100, free. July-sown Cabbage, in varieties, including red, 1s. 100, free. Stocks, Brompton, white, scarlet, purple, and Queen, 100, free, 1s. 6d. Wallflowers, dark and yellow, very sturdy pricked-off plants. 2s. 6d. 100, free.—J. DUCKER, Florist, Haxey, via Doncaster.

LOVEL'S Yorkshire Strawberries.—Prepared runners, nicely rooted, now ready. Good market var., 5s. 6d. per 100; sample doz., 9d. Car. paid for cash. List.—W. LOVEL & SON, Plant Growers, Driffield.

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PRIMULA OBCONICA GRANDIFLORA.—The ever-blooming Primula. Always in bloom. Strong plants per dozen, 1s. 3d., free. Aralia Sieboldi, a splendid decoration plant and very hardy; like a Palm. Strong plants 6 for 1s. 3d., free.—C. SHILLING, Nurseryman, Winchfield, Hants.

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STRAWBERRY PLANTS.—Best varieties. Selected from fertile plants. Royal Sovereign, British Queen, Elton Pine, Latest of All, Noble, President. Sir J. Paxton (improved), James Veitch, strong plants, 25, 1s.; 50, 1s. 10d., or 3s. 6d. per 100. Carefully packed, carriage paid.—C. SHILLING, Nurseryman, Winchfield, Hants.

12 ASSORTED PLANTS for room or table decoration, for immediate effect, including Palms, Grevilleas, Aralias, &c., &c., 3s., or 6 for 1s. 9d., carriage free. —C. SHILLING, Seedsman, Winchfield, Hants.

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ORCHIDS.—Odont. Rossi, to flower during winter, 2 for 1s. 3d.; 6s. 6d. per doz. Odont. maculatum, 1s. 6d. ea. Oncid. tigrinum, 1s. ea. Oncid. varicosum, 1s. 3d. ea. Catt. citrina, 1s. 3d. ea. Den. Phal. Schroderianum in flower or spike, 2s. 6d. ea. Den. nobile, 1s. 3d. ea. Den. Wardianum, 2s. ea.—G. PARSONS, 217, Oxford-rd., Reading.

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12 HYACINTHS, 100 Crocuses, 60 Snowdrops, 60 Jonquils, 60 Tulips, 200 Narcissus and Daffodils, 60 Irises, for 8s. 9d.; half quantity, 4s. 9d.; quarter quantity, 2s. 6d., free. Hardy Climbers: Enormous stock. One each of Virginian Creeper, Honeysuckle, Hop, Evergreen Rose, Irish Ivy, Clematis, Pyrus japonica, Jasmine, Cotoneaster, Forsythia, Euonymus (variegated), Pyracanthus, for 3s. 9d. Beautiful Evergreen Shrubs: One each of Arbor-vitæ, Box, Cypress, Fir, Euonymus, Tamarix, Holly, Laurel, Mahonia, Berberry, Evergreen Oak, Yew, for 3s. 9d. Immense variety of Flowering Shrubs: One each of Lilac, Laburnum, Deutzia, Spiræa, Hydrangea, Mountain Ash, Guelder Rose, Broom, Almond-tree, Ribes, Snowberry, Syringa, for 3s. 9d. Roses: All best varieties, including Maréchal Niel, Niphetos, Gloire de Dijon, Red Gloire, A. K. Williams, Capt. Christie, La France, &c., &c., 9d. each; 12 for 8s. Polyanthus Roses: Charming clusters of bloom, pink or white, 6d. each. Moss Roses, pink and white, 9d. Evergreen Climbing Roses: Prairie Belle, Ruga, La Guirland, &c., 6d. ea. Bengal Roses, 6d. ea; 12 for 4s. 6d. For Hedging: Privet, Thorn, Myrobella Plum, Beech, 3s. 100; 25s. 1,000. *Thousands of Hardy Plants of all descriptions. Send for List.* Collection for Early Spring Blooming: 20 Wallflowers, 50 Daisies, 20 Pansies, 20 Forget-me-not, 20 Violets, 20 Polyanthus, 20 Primroses, 20 Dianthus, 3s. 6d. Chrysanthemums for early blooming, 12, 3s., choice. Gooseberry Bushes, Red, Black, White Currants, 2s. 6d. doz. Raspberry Canes, 50 for 2s 6d., strong. Strawberry Joseph Paxton, the popular favourite, year-old transplanted plants, 3s. 9d. 100. Herbs: Thyme, Sage, Mint, Parsley, Lavender, Sorrel, Fennel, Savory, 6 of each, 2s 3d. Forest Trees: Large stock. Lime, Chestnut, Ash, Beech Oak. Birch. Elm, Acacia, Poplar, 4d. and 6d each. Sweet Chestnut, Walnut, Mulberry-trees, 6d. each. All 2s. 6d. orders sent carriage paid. Send for full Catalogue. All plants, shrubs, and trees sent out are strong, transplanted stuff, not weak rubbish.

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"Farinadvance" (early), "Goliath of Gath" (second), "Monarch" (third), "Latest of All" (very late), 1s. 6d. doz.; 1 doz. each kind, 5s.; good plants. MONSTER FUCHSIAS, white, blue, yellow, flowers large as teacup, the 3, 2s., free. Large bulbs HERACLEUM, white flowers, large as cartwheel, 1s. 6d. each; 2, 2s. 6d.; 6, 5s., free.

I. COODY, F.R.H.S., BELCHAMP, CLARE, SUFFOLK.

CUTTINGS. — Geraniums, Pelargoniums, Marguerites, Hydrangeas, and similar plants.—MACLENNAN, Gardener, Dalmuir, N.B.

WANTED, Geranium Cuttings.—50 each Vesuvius, Flower of Spring, Master Christine, Lady Emily, Tricolor, Mrs. H. Cocks.—Mrs. RENDELL, Oakfield, Torquay.

GERANIUMS. — Cuttings wanted. About 2,000, in 4 varieties. 1s. 3d. per 100 given.—SOMERBY GARDENS, Brigg, Lincolnshire

CHRYSANTHEMUM LATIFOLIUM, Harpalium rigidum, Orange Montbretia, Afghan Lily, 50 for 2s. Erythrum uliginosum, Iris fœtidissima (coral-berried), mixed Perennials, Tradescantias, rooted, for house or greenhouse, 12 for 1s. Saxifrages in variety, 25 for 1s. 3d. Iris neglecta, handsome foliage plant, 6d. each.—GARDENER, Trenewth, Penryn, Cornwall.

LOVELY GREENHOUSE FERNS.—Annual Clearance Sale. Extraordinary Offer. 1d. each. A Box of 12 lovely assorted Greenhouse Ferns, with cultural directions, carriage paid, for 1s. 4d.; 2 lots, 2s. 6d. Don't delay sending till too late and then regret it.—R. C. WRIGHT, Thorpe, Norwich.

A. HISPIDULUM.—One of the prettiest Ferns in the world for cool greenhouse. Lovely tinted fronds. 2 given gratis with 2s. 6d. orders.—WRIGHT, as above.

ASKEW'S CRESTED NATIVE FERNS.—Splendid varieties. List, ½d. Fern Culture, 6½d, free. —W. F. ASKEW, Rothay Hotel, Grasmere. Illustrated Fern Culture, 1s. 1d.

PEARSON'S NEWEST ZONALS (1897).—Wordsworth, 1s. Southey, 1s. Shelley, 1s. A. Tennyson, 1s. Dryden, 1s. J. Milton, 1s. 1896: Cassiope, 9d. Zenobia 9d. Virginia, 9d. G. Reid, 9d. Phyllis, 8d. General Wolseley. 8d Iris, 9d. 1895: Seagull, 9d. Snowdrop, 9d. Dr. Macdonald, 6d. St. Cecilia, 7d. Mrs. D'Ombraine, 6d. Princess Alix, 5d. Donald Beaton, 6d. The 3 sets (20 plants) free by return for 13s. 6d. Strong, healthy young plants, correctly named, packed separately in damp Moss. Cash with order.—REV. VICAR, M.A., F.R.H.S., Everton Vicarage, Bawtry, Notts.

POLYANTHUS plants, 2s. 6d. doz.; Zonals, Continental double, plants, 2s. 6d. doz; Carnations, 2s. 6d. doz. All best strains.—GARDENER, Eastleigh, Moseley, Worcestershire.

200,000 ROYAL SOVEREIGN STRAWBERRY PLANTS.—Price, 10s. per 1,000. Warranted true and strong plants.—A. COVINGTON, Strawberry Grower, Brickhill-road, Wellingboro', Northampton.

GARDENING ILLUSTRATED.

No. 969.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* OCTOBER 2, 1897.

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ROSES.

AMONGST THE ROSES.

SEASONABLE NOTES.

TAKEN all round our Roses have been quite up to the average this season. We have had fewer insect pests than usual, but more mildew and red-rust. These summer enemies of the Rose I have already dealt with, but we have so much work to do at the present time and during the next few weeks that a few notes may help many querists, and save much pressure upon the correspondence pages.

One of the most important items at this season is to avoid the serious wind waving of long growths. These will form the most useful wood for pegging down next spring, and also upon walls, fences, and arches. It is very obvious that if we allow these to wave about and chafe each other many—and always the most prominent and important—eyes will be destroyed. We may perhaps best treat this in connection with the subject of autumnal pruning. Where such Roses as were pegged down were not pruned directly their first show of blossom was secured, there will be a considerable amount of wood that can now be dispensed with to advantage. Cut out shoots that are bearing a quantity of laterals. Thin out the wood, bearing in mind the fact that a young shoot of this summer's growth will be of far more value than one bearing a number of laterals, and that has already carried a crop of bloom. Drive in a stout stake, and tie the shoots to this securely. A certain amount of pruning may also be done to our standard and half-standard Briers budded this season. To leave long shoulders now means many breakages, while, even if they do not break off close to the Rose-bud, many of the latter may be injured from other shoulders chafing them. Until the bud is well set, and the growth of the Brier somewhat matured, it is not advisable to curtail growth and check the flow of sap; but we need have no further fear in this direction now. After the autumnal pruning has been attended to and weeds cleared off, the surface soil between the plants may be hoed deeply, and a dressing of manure applied. This will act as a fertiliser and also as a considerable protection during winter.

This brings us to a most important item in Rose culture—viz., protection or no protection. Several queries respecting the need for, and best methods of protection, have already reached us. It is one of those cases in which no hard-and-fast rule can be laid down. Much depends upon the season, the locality, and aspect, and especially if upon low and exposed ground or not. Although, as a rule, a low position is sheltered, it does not always happen so, and we must always remember that such are colder and moister than when plants are upon a high and well-drained soil. It is generally admitted that Roses are much more hardy than was believed, even so short as a decade since. Besides this, we have a better selection, both in the Teas—a class that was considered the most tender of any—and among the Hybrid Perpetuals and H. Teas.

All dwarfs may be earthed up and made quite secure at the base by drawing some of the surrounding soil towards them; if, at the same time, we place a few branches of Fir, Gorse, Birch, or others among and around the upper growth it will need an exceptionally severe winter to do any harm. Standards are more difficult to protect, and are also much more susceptible to weather influences. A few branches of Bracken and twigs of the trees already named may be tied around the heads of the plants, not drawing them in too tightly; but I would warn against over-protection. Have the material handy, and apply when the weather threatens to be severe. Even a little light litter scattered over and among the branches is a great help; but, unfortunately, our plants most want protection during the time a very keen and frost-laden wind is blowing, and it is obvious in this case that both light litter and leaves will soon be blown away and deposited in some sheltered nook or corner of the garden. Buds inserted in stocks this summer must now be overlooked and released wherever the tie is still secure.

A few notes upon rooting the various stocks for Roses and obtaining Roses from cuttings were promised in a recent issue. There could be no better time for this than the present. Practically the same system is pursued both with dwarf stocks and Roses. Among dwarf stocks obtained from cuttings, the best are Manetti, De la Grifféraie, and Brier; all are made the same. Select growth of the current year, a little more than half matured, and cut this into lengths of 9 inches or so. Make the bottom cut just below an eye, cut out all but the two or three top eyes, and the slip is ready to insert. Now, in the case of a Rose—that is, such varieties as Duke of Edinburgh, Ulrich Brunner, and Gloire de Dijon—select the same sort of wood, and make the cutting a little shorter. In this case we do not cut out any of the lower eyes, simply because a sucker from a Rose cutting is most valuable, whereas that from a stock is by far the worst feature in growing Roses upon any foster roots. When the cuttings are prepared, insert them somewhat thickly into a sandy loam, leaving no more than 2 inches of the wood above the surface.

Roses of more twiggy growth and of far less strength than the examples given may be rooted in pots or frames. Use wood in the same condition, and make the cuttings any length from 4 inches to 6 inches. Use a sandy loam and leaf soil, insert thickly, and plant out into the open early in the ensuing autumn. Dwarf stocks will need lifting the autumn after insertion and planting out ready for budding upon the next summer. Now, too, is a time when the collection of hedge Briers for standards and half-standards will be commencing. These root far more freely if got in during October, or at the latest by mid-November. They should be suckers of two to three years old, trimmed off closely at the roots, and planted in rows 3 feet apart, leaving a space of 6 inches to 9 inches from Brier to Brier. Plant them 6 inches deep, tread up firmly, and go over them a few times after frost and wind, again treading them up. A note upon seasonable work under glass, and especially among Roses in pots, shall appear shortly.

P. U.

STANDARDS *VERSUS* DWARFS.

(IN REPLY TO "H. B. H.")

A CORRESPONDENT suggests a few notes upon the merits or demerits of these two forms of Rose culture. He especially wishes to know which is the best "for decorative gardening, and for a constant supply of cut blooms." In this case the answer would undoubtedly be in favour of dwarfs. Still, there are some few instances in which a standard—such as when a single plant occupies a small round bed, or is placed upon a lawn—would have more effect than a dwarf. Much depends, too, upon the variety grown. A weak grower would soon fail as a full standard, while it would also be at a great disadvantage as a dwarf from the ground if its flower had the same tendency to droop as Rubens, Niphetos, Souvenir d'un Ami, and a few more. Yet we find these varieties thriving well as dwarfs in some localities, and often producing shoots of such strength that the drooping tendency of their blossoms is little detriment to general beauty and usefulness. As a rule, we may take it that these, with such as Souvenir d'Elise Vardon, Comtesse de Nadaillac, and Cleopatra are much best upon a hedge Brier stem of 12 inches to 18 inches. It is just sufficient to raise the bloom, and yet not so high that a weak grower cannot derive the needed sap. A full standard should never be attempted unless with a vigorous grower. In this form, Coupe d'Hebe, Blairi No. 2, Rêve d'Or, and others of like habit, will droop over and make one of the prettiest decorative features we can have. Much will depend upon soil and situation. The Brier as a short standard, and also as a dwarf, will not thrive upon a light soil so well as dwarfs upon the Manetti-stock. But if we take the question on the point of constant production of bloom, then it must again be dwarfs. We get growth from the base simply because it is the nature of Roses to push up suckers, whereas in the standard form there is no encouragement for eyes from the base. Even the budded shoulders of our standards are in so dry a position, when compared to dwarfs, that they seldom break so freely. A dry season will affect standards much more than dwarfs. The latter are by far the longest lived, seldom being killed right down, as is the case with too many standards, and, finally, from a decorative standpoint, dwarfs are invaluable for beds, walls, fences, arches, pergolas, and arbours, all of which are positions in which the standard is almost useless. We do not see what good a discussion upon the subject would do.

Two good autumn Roses.—I should like to recommend the climbing Rose Longworth Rambler, which is not as well known as it deserves to be. When well established it flourishes on arches in the coldest aspects, exposed to north and east winds. Just now the flowers are nearly as brilliant in colour as Crimson Rambler in two different Surrey gardens.

Mme. Laurette Messimy is a China Rose of most vigorous and hardy growth that never fails to give buds and bloom throughout the season, almost equal in colour to L'Ideal.—Fircroft.

Niphetos Rose.—Should I be likely to succeed in growing the Niphetos Rose as a bush in the open ground here, or should I, by having a climber, plant same inside a summer-house, bringing shoots through the trellis-work outside, facing due south? If so, would it be best to keep Rose in pot till spring, planting outside end of April? Should I be likely to meet with success with Innocente Pirola, Boule d'Or, L'Ideale? Soil, heavy clay. — Amateur, *Harringay*.

*** There is no reason whatever why you could not grow the Roses you mention. Give a little protection in winter, and they will do as well as any Roses. Read our Rose notes, in which protection is fully dealt with.

Tea Rose flowers for market.—Are the blooms of Tea Roses of any marketable value during the winter, and, if so, about what price would they fetch? Of course, they are grown under glass?—Nemo.

*** Yes; good Tea Roses always sell well in the market, especially during winter; but as to prices realised, we must ask you to excuse us venturing any reply. It varies so greatly with demand, time of year, and quality of the blooms. Send a few to some commission agent, but do not expect the same prices for other consignments. They may range from a few pence to 4s. and 6s. per dozen.

Evergreen climbing Roses for east border.—Will you kindly let me know names of evergreen climbing Roses for border facing east? I want to cover up a fence 100 feet long, 6 feet high.—Beckenham.

*** There are no strictly evergreen Roses, but the following have a tendency to retain their foliage much longer than others, and often carry it through the winter: Félicité-Perpétue, Flora, Rampant, Ruga, Princess Marie, and Leopoldine d'Orleans. Rêve d'Or, a Noisette, is also almost evergreen.

Gloire de Dijon Rose as a standard.—Is it possible and advisable to grow Gloire de Dijon Rose as a standard in a cold district? Can it also be grown and easily trained as a bush? I wish to plant some of these Roses at the back of a Rose-bed facing south-west. How far apart should they be planted, and in what shape or manner would you advise me to grow them? I am afraid a wire-trellis would be unsightly until covered.—Tete Noir.

*** You could not select a more hardy Rose than Gloire de Dijon. It will grow in either standard or bush form; the last is the hardiest and surest way, and would very soon cover a trellis. Plant 3 feet apart, if they are to grow as high as 10 feet or more; if not more than 4 feet, 6 feet apart would be close enough.

Roses for border.—I have a border under the kitchen window facing south, 8 feet long, 15 inches wide, in which I should like to grow some permanent flowers. The wall is 3 feet below the window. Do you think I could manage Roses here? If so, what varieties would be best? The soil is light, but could be made suitable if the position is not too hot.—Mary.

*** A really capital position for such Roses as Niphetos, Mme. Falcot, Marie Van Houtte, and Anna Ollivier. If you would like a Rose to grow up the wall, upon each side of the window, plant William Allen Richardson and L'Ideal. In that case only put three plants of the shorter growers beneath the window. Enrich your border with some cow or pig-manure, and dig it up as deeply as possible before planting.

Dwarf Roses for damp place.—Can any of your readers advise me as to the best Roses (dwarf) for planting in a rather damp, sheltered situation in Cornwall? The soil is good and the ground well drained, but we have so much wet in the winter that Roses do not, as a rule, flower well.—Rose.

*** Choose from such varieties as the following dozen. All of these open their flowers freely and will give a grand display, especially in autumn and early spring. Dr. Grill, Safrano, Mme. Falcot, G. Nabonnand, Mme. Lambard, Papa Gontier, General Jacqueminot, Baroness Rothschild, Fisher Holmes, Marchioness of Lorne, Thomas Mills, and Ulrich Brunner. The first six are Teas and the rest H. Perpetuals, and will give a good variety of colour.

Six hardy Hybrid Tea Roses, etc.—Will you kindly give me the names of six of the hardiest and freest-flowering (*a*) Hybrid Tea Roses, (*b*) China Roses, and (*c*) Bourbon Roses all suitable for bedding.—Tete Noir.

*** H. Teas: Viscountess Folkestone, La France, K. A. Victoria, Caroline Testout, Augustine Guinoisseau, and Marquis of Salisbury. Chinas: Common and Crimson, Mme. Laurette Messimy, Ducher, Duke of York, Fabvier, and Mrs. Bosanquet. Bourbon: Souvenir de la Malmaison. You will find no better bedding Rose in this class or section.

Planting Roses (*J. L.*).—Free growth cannot be expected of the climbing Roses if they have but the small root run suggested. Long shoots are the outcome of unrestricted roots. A good fibrous loam, fairly heavy and rich, would be the best soil to use. As soon as the roots have well filled it, liquid-manure could be applied with advantage, as this would tend to keep the plants vigorous. It would be unwise to plant very strong growing varieties in such small receptacles. The Banksian Roses, yellow and white, often do well in pots, especially on the continent, running up to 8 feet and 10 feet, and flowering profusely in comparatively small pots, while climbing Niphetos will also flower well, and the little Alister Stella Gray should also succeed.—S. W. F.

Rose plants after pruning. — Will "P. U." kindly inform me what ought to be done to avoid the bleeding and consequent decay of the branches of Rose plants after pruning?—R. B.

*** This would not happen if you pruned properly—that is, cut off close to an eye. The portion of wood above this naturally dies because no sap is drawn above the eye or bud. It may be, however, that you are troubled with the stem-boring saw-fly, the larvæ of which eats down the pith, and consequently kills so far as it penetrates. If this is so, put a little of the following mastic over the cuts: resin, one-fourth; pitch, one-half; and tallow, one-fourth; melting this before application.

Red-rust.—In reply to your correspondent respecting the disease, red-rust, in "G. C.'s" Rose-trees, get some good, freshly-dug chalk which has not been exposed to the air; be sure and get it from underground. Break it up, say about the size of a Walnut or hen's-egg, put it on the surface and well dig it in down to the roots. Get some cow-dung and dig in and a few ashes; sheep-droppings would answer better than cow-dung. Break some chalk into dust, rub it on the stem, and after a week or two rub some cow-dung on stem. It will all wash off and not hurt the branches. I do not know if the shrubs are in shrubbery, as some kinds cause rust. Cut roots well back from them. Horse-manure will cause rust. The chalk, after a year or two, will penetrate 15 inches to 2 feet deep. If you spread it on a clayey meadow you would see the result.—A. Farrell, *The Nursery, Biggin-hill, Cudham, Kent.*

*** Undoubtedly chalk is of great benefit to many soils, but it can do no more good, and even less, than half the quantity of lime would effect. On a wet and sour land chalk or lime neutralises the unproductive acids and tends to secure more uniform moisture. But as soils vary so much, and both chalk and lime the same, we cannot think our correspondent's suggestion one that could be used indiscriminately. Nor do we think it would have the least effect upon red-rust in Roses, having found this disease equally prevalent upon chalky soils. If it is so necessary to have perfectly fresh dug chalk, and to bury this again, why use some as a surface dressing? Manure cannot be the cause of red-rust. We fully agree with our correspondent that chalk will do more good upon some clayey meadows than manure, but lime would answer the purpose even better; while in other cases, upon a poor soil for example, lime or chalk would only tend to further exhaust it of necessary plant-food.

Roses unsatisfactory (*Chipperfield*). — We are inclined to think you have been cultivating suckers of the stocks your Roses are worked upon. Your treatment otherwise seems admirable. If you will send a few small pieces of the flowerless growth we will endeavour to advise you.

TREES AND SHRUBS.

Sweet-scented flowers and shrubs.—Will you kindly give me in the columns of Gardening a list of sweet-scented flowers and shrubs suitable for a small garden, standing due north and south, well sheltered, clayey soil naturally, but lightened with ashes, and well manured? I intend to devote the whole space to sweet-smelling plants.—J. P. Wright.

*** The following is a short list of evergreen sweet-scented shrubs: Carpentera californica, white, yellow stamens; Olea fragrans, white; Jasminum officinale, white; J. Wallichianum, yellow; Daphne Cneorum (The Garland flower), very free-flowering, flowers small, rose-pink; Ligustrum japonicum, L. lucidum, L. Quilowi, Magnolias, Olearia Haasti, very free-flowering; Choisya ternata, very fragrant, and Raphiolepis ovata. Of deciduous shrubs the undermentioned are meritorious: Berberis of sorts, Daphne Mezereum, D. M. album, and D. M. autumnale, Amelanchiers of sorts, Cerasus, Philadelphus of sorts (Mock Orange), Jasminum nudiflorum, Clethra alnifolia, Loniceras (Honeysuckles), Lilacs, and Azaleas.

Shrubs for east wall.—I am anxious to know the names of shrubs which might be planted on the east side of a wall, a good deal shaded by tall trees? Evergreen and flowering shrubs preferred.—N. C. Mansergh.

*** Although a shaded position is not conducive to free-flowering, the following shrubs might flower fairly well: The Mexican Orange (Choisya ternata), Escallonia macrantha and E. montevidensis, Garrya elliptica, Kalmias, and Veronica Traversi. Cratægus Pyracantha and Cydonia (Pyrus) japonica are usually trained to a wall, but may both be grown as bushes. All of the former are evergreens, and all flower well in favourable situations.

Irish Yews and Juniper for hedge.—Would Irish Yews or Junipers make a satisfactory hedge? Would they stand being cut in? and would they remain thick below? Common Yew and Holly would be too slow growers. Hollytwig.

*** Irish Yews and Junipers would not make a satisfactory hedge. They are of much too slow growth. The following would be better: English Yews, Quick, Arbor-vitæ, Thuja Menzesi, Myrobella or Cherry Plum, Euonymus latifolius, Cupressus Lawsoniana, Hornbeam, and Box.

Trees for shade.—We are wanting a tree to shade a tent on our lawn. It would not be more than 50 feet from the front of the dwelling-house. We should like a Copper Beech, but afraid that might be slow growing. Can the Editor tell us what would be suitable? We do not want a very high-growing tree, as it will be so near the house. When should it be planted? Our soil is clay on sandstone, and the garden very exposed to wind.—E. Y. W.

*** Laburnum, double-flowered Cherry Hornbeam, Liquidambar styraciflua, and Acer Negundo variegata would answer well. Plant now.

Elm-tree (*J. W., York*).—You may cut the tree down now.

Shrubs under the shade of trees (*D. M. A. and Dahlia*).—The following will thrive: Aucubas, English Yew, Hypericum (St. John's Wort), Skimmias, Box, Vincas, Symphoricarpus (Snowberry), common and Portugal Laurels, Dogwood, Ivies, Butcher's Broom, Cotoneaster, Escallonias, Euonymus, Loniceras, and Philly reas.

Hardy Ferns.—Please give a list of six hardy Ferns most suitable for a dark corner between three walls, only open to the east? Locality, Dulwich.—E. G. A.

*** The Male Fern (Aspidium Filix-mas), Hart's-tongue (Scolopendrium vulgare), Welsh Polypody (Polypodium cambricum), Prickly Shield Fern (Polystichum aculeatum), Black-stemmed Spleenwort (Asplenium Trichomanes), French Fern (Asplenium Adiantum-nigrum), Hard Fern (Blechnum Spicant), Scaly Spleenwort (Ceterach officinarum) should do well in in the position named, the first three varieties being of strongest growth, while with a copious water supply the Royal Fern (Osmunda regalis) should also flourish.

Eucomis punctata.—This makes a capital companion for Agapanthus umbellatus. The plants succeed under exactly similar conditions, flower at the same time and the Eucomis has the advantage of being sweet-scented.

INDOOR PLANTS.

BEGONIA GLOIRE DE SCEAUX.

Winter-flowering Begonias have undoubtedly advanced in popularity within the last ten or a dozen years, owing principally to the introduction of B. socotrana and the part it has played in giving us many distinct and beautiful varieties, all valuable for winter blooming. The hybrid illustrated was sent out by MM. Thibaut et Keteleer, of Sceaux, in France, during the year 1887. It was announced as a hybrid between B. socotrana and B. subpeltata, and in general appearance it is widely removed from any other variety that we have. The habit of the plant is stout and vigorous, and without any stopping it naturally forms a neat, compact specimen, well furnished with ample foliage of a thick texture and of a rich metallic tint. The flowers, too, are large and borne in good sized clusters, while their colour is a pleasing shade of deep pink. As a rule it commences to flower about Christmas, and a succession of bloom is kept up for the first three or four months of the year, thus enhancing considerably its value as a flowering plant. Unlike the other hybrids of B. socotrana, this does not have a dormant period, but grows away freely during the summer months. It can be readily propagated from cuttings, and will succeed in ordinary potting compost. Care should be, however, taken not to overpot it, as if full of roots better results are often obtained by assisting with a little manure water than by putting into very large pots. Neat little well-flowered specimens may be obtained in pots 5 inches in diameter, while an 8-inch or 9-inch pot is large enough for any purpose.

The illustration shows a two-year-old plant grown from a cutting. It was cut down once, and at the time the photograph was taken it was over a yard high.

A winter-flowering Begonia (Gloire de Sceaux).

Climber for greenhouse wall (*Ilex*).—The best climber for "Ilex" to plant in her shady greenhouse would, undoubtedly, be the Lapageria, this subject flowering best in partial shade. Good drainage should be afforded, and a deep bed of rough peat with a liberal admixture of charcoal provided. The charcoal should be in pieces ranging in size from that of a Cob-nut upwards. Charcoal dust should not be used, as this merely tends to choke the drainage, while larger pieces keep the soil open and sweet. When in full growth the Lapagerias enjoy a copious water supply, and delight in a moist, cool atmosphere, so that, during the summer, the syringe may be used on their foliage with good effect. When flowering, however, the syringe had better be dispensed with, as, when grown under cover, the blooms are apt to spot if moisture lodges upon them. There is no need for the employment of heat in the culture of this beautiful climber, as, in the south-west of England, it succeeds admirably in a sheltered position in the open. There are two varieties—the pink Lapageria rosea, and the white L. alba; both are equally beautiful, the latter coming purer in colour under glass than in the open. A good look-out should be kept for slugs and snails, which are very partial to the succulent growths thrown up from the earth, eating them off as soon as they appear above the surface. The Lapageria occasionally may be found doing well in loam; indeed, the original imported plant is said to have had loam adhering to its roots, but in practice success has been more generally achieved by the use of peat.—S. W. F.

Brugmansia suaveolens.—This plant, known by some as Datura arborea, becomes large and showy when planted out in a greenhouse or conservatory and allowed to extend as much as it pleases. We have one which flowers twice a year—first early in spring, and again in autumn. When it has done flowering we cut it in close to the old wood, and it soon runs up again to a height of 9 feet or 10 feet. It would do well enough if left uncut, but it takes up too much room, and its broad, handsome leaves and wide-spreading branches shade so much everything around it that we are obliged to restrict its growth, and as it blooms profusely twice annually, as just stated, under the cutting-back system, we have no desire to grow it otherwise. Its trumpet-shaped flowers are quite a foot in length, and fragrant. They do not remain long fresh in a cut state, but when left on the plant they do not wither quickly, and they open in succession for a considerable time. Where it cannot be planted out it may be grown in a large pot or box. It is never troubled with insects, and it is very easily propagated by means of cuttings. Some of the smaller growths, if taken off now, put singly into small pots, and kept in a close place for a fortnight or so, will root freely and make good plants in spring.—C.

Treatment of Cacti (*T. Fisher*).—The requirements of Cacti differ very much, but as a rule you cannot go far wrong by keeping them dry during the winter. Still, it would probably be going too far to withhold water for so long a period as from September to February. We should be inclined to follow the advice of the seller as far as was reasonable; but if in a very dry position you might water once or twice. There are Cacti which need a warm house, and others that will even admit of a frost. Under any circumstances keep them much drier than other plants, and if they can be placed upon a shelf so much the better. Some Cacti grow quickly, others are very slow indeed. We wish you had given us the names of yours, when we could have given you a more definite reply.

BURNT EARTH.

After a hot summer, continued early autumnal showers cause seeds of all kinds to make a vigorous growth, and the surface soil being constantly moist it is impossible to destroy the seedlings as they appear. When they have to be raked off the ground I make a point of burning them, and in this way get a lot of charred material that is valuable. In the case of gardens that have been many years under cultivation, this burnt matter exercises a very marked effect. This season I used it liberally for Carnations, and I never had the Grass so strong and so fine in colour. If I had to do with ground of a retentive character, I should plant my Carnations in soil consisting of one-third charred garden refuse, as not only is it stimulating but it helps to keep the roots in good condition when the plants are at rest. One third of it with two parts of loam forms a fine mixture for layering them in. It is also of great value in seed-sowing in the open ground. After the soil has been well forked and sweetened, a couple of inches worked into the surface will do much towards assisting germination by keeping the soil free and open. The effect of a dressing of charred earth on such things as Primroses and Polyanthuses is very marked. I make a practice of taking up and dividing my Primroses annually. I replant on ground that has been fallowed through the summer, and give it a dressing of a couple of inches of charred and earthy refuse. I find that the doubles especially make a much finer growth, the foliage taking on a rich green hue, and keeping in good condition through the summer. Byfleet.

Nicotiana affinis poisonous.—Probably many of your readers who cultivate this sweetly-perfumed Tobacco-plant are not aware

that the leaves are capable of stinging the flesh severely, as I had good reason to know, for, carrying a few of these plants in pots, with my shirt-sleeves turned up, the leaves came in contact with my bare arms, and I felt a sharp, stinging pain, which, however, soon passed away, but the marks spread out into large patches of red, and now, after six weeks, they are still quite red, and look as if it will take another month to get rid of them. I shall be careful in future not to let them come in contact with bare arms again.—J. G., *Gosport.*

THE KITCHEN GARDEN.

POTATO WHITE ELEPHANT.

This Potato much resembles Beauty of Hebron in shape and colour, except it is larger. The colour is white, flushed with pink, deeper about the eye. It is a large-growing Potato, and for one so long in the tuber crops quite freely. Its cooking qualities are undisputed from nearly every kind of soil, boiling quite mealy, while the flesh is absolutely white, the flavour leaving little to be desired. The keeping quality of this Potato is quite of the best; not only is it good when lifted, but in the spring it retains its high quality. It is perhaps not quite so good a disease-resister as some other sorts during continued wet and warm weather. For the amateur and cottager, where space is limited, it is decidedly to be recommended, as it produces more usable sized tubers from a limited space than any other Potato. For the requirements of some persons the tubers grow too large, especially

Potato White Elephant.

those who do not appreciate Potatoes cut before they are cooked. To obviate this extreme growth, instead of rubbing off the shaws or sprouts to within two, as is the case with the bulk of varieties when extra size is required in the tubers, allow all growths to remain even if each tuber produces half-a-dozen. The consequence is the crowded state of the haulm prevents a free development of the leaves, and necessarily smaller tubers, but not less in number. As a rule, plenty of space between the rows is desirable where large tubers are not objected to. V. M.

BROAD BEANS.

Although these vegetables are now out of season, and, still further, do not generally command high appreciation, yet they have admirers who like them when well grown. As the time for obtaining seed for next spring sowing will soon be here, it may interest readers who barely know which to buy, to learn that there are four distinct types of these Beans. The dwarfest is the Panchester, of which there is a green-podded variety called Beck's Green Gem. The plants, if sown thinly in rows 20 inches apart, branch and reach a height of about 18 inches in good ground. They produce pods freely, but these are short and contain about three Beans only. These are of the best quality when cooked. Then come the Long Pod, for the first gathering, and Johnson's Wonderful, later and stronger. True stocks of these should have the pods nearly erect; but still they vary a good deal. Both these are favourite garden varieties, reach to a height of 3 feet, and should be pinched back to about 30 inches, as in that way podding is facilitated. Early Long Pod, sown thinly in rows 2 feet apart, may be got in, on a sheltered spot, before Christmas. There is yet a further long-pod section that have drooping pods. This is the Seville or Aquadulce type, some very long-podded selections having been made from it. As a rule, very large pods are produced sparingly on plants, so that for productive purposes they are no gain. Bunyard's Exhibition seems to be a combination of the Long Pod and the Seville, and is a capital selection. Lastly come the Broad Windsor type, of which the best is the green form. These are diversely named selections, differing little or none; otherwise the pods are broad, Beans large, and produced usually in pairs in pods only. Three Beans in a pod is a rare circumstance, and although some selections purporting to give three Beans in a pod have been made, they soon revert. A very good green-podded form is Robin Hood. To have Broad Beans at their best, stiff-holding ground should be selected for the later or main crop; but where light ground only is available, then it should be, in the winter, trenched two feet deep, leaving the bottom soil below, but breaking it up well, then laying on it a good dressing of half decayed manure, and turning the top spit of the next trench on to that. Poor results may always be looked for from Broad Beans where the soil is shallow worked, and the roots cannot go too deep in search of food and moisture. Then, in all cases, sowing should be made early. If the first be made in December or January, others, for succession, should follow in February and March, but seldom later, except in strong, deep, holding soil, or in northern districts. Early Long Pod, the Seville, or Exhibition, and latest Johnson's Wonderful, give a good succession, or, if preferred, the Green Windsor. The winter Beans being, when fully grown, large, are best if allowed to become firm, then cooked, and have the skins removed before served to table. So served, with either gravy or melted butter, they are delicious. The Long Pod Beans, cooked when shelled, should always be young and tender. Because of the natural tendency of Broad Beans to attract aphis, which through the dark colour of the sap, causes them to become black, and are termed Black Dolphin, it is wise to pick off the tops of the plants after they have set bloom well below, as the insects prefer the young tops. These, when gathered, if infested, should be thrown into boiling water. A mulching of long manure between the rows does much good. A. D.

Flourball Potato.—I saw several roots of this fine late robust variety lifted the other day in a Wiltshire garden, and the produce was excellent. I am sure it would run to 4 bushels to the rod easily. The tubers are red and round. The sample turned out was specially even, not a trace of disease being visible, but the haulm had ripened off. I think, judging by what I have seen, it is a good all round variety.—F. Tooley.

Earthing Celery.—When in a large garden recently I noticed that when the earthing of Celery was proceeding one man went ahead and tied a piece of bast round each plant to keep the stems erect. That seemed to be needless trouble, especially that the tie seemed to be rather tight and would later on interfere with the swelling of the stems. The best plan is to place two men at the work with light digging forks, one on one side working forward, the other on the other side working backward, and each having one hand at liberty holding up the stems of the plants as they add soil, gently pressing it in about the plants as they go on. Once several inches of soil is added the proper moulding later is easy enough.—A. D.

Cauliflowers.—Owing to the rage for large heads of these valuable products, the tendency in relation to the Autumn Giant strains has been to produce large-headed and coarse-leaved stocks. In very many directions these have, during this season, given most unsatisfactory results in giant leafage and split, irregular heads. It does seem that we should do well to hark back to the old early London strain, and use that more for giving heads from July to September, trusting to later plants and less coarse-grown Autumn Giant for later use. We have no dwarfer or more perfect Cauliflower than the Snowball, and, if that variety were crossed with a good stock of the London, a good white solid, and not at all coarse summer Cauliflower would result. Of Cauliflowers exhibited in the autumn, nine-tenths are far too big for cooking, and generally show coarseness.—A. P.

Lettuce Long Standen.—This is an extremely useful as well as highly ornamental and finely flavoured variety, and has afforded better results than any other kind this season. It partakes more of the habit of growth of the Cabbage than the Cos section, yet the foliage is more upright—it is probably a hybrid form. The foliage, which is beautifully crisped and fringed at the edges, is of a light golden-green hue, almost yellow, and deliciously tender and sweet. The plant stands dry weather admirably, and, as its name implies, stands a long time before running to seed, even in dry, hot weather, and even then forms a stem but slowly. Its attractive appearance causes it to sell readily, though by many it is mistaken for a kind of Endive. It transplants well, and attains a considerable size even in poor soil.—B. C. R.

GARDEN PESTS.

Beetles in lawn (*E. S.*).—The beetles you sent are specimens of the common dung or dor-beetle. They and their grubs are perfectly harmless to plant-life. The beetles bring anything they can find in the way of excrementitious matter, forming it into a ball, in the centre of which they lay an egg. If you take care that there is nothing of the nature I have mentioned on your lawn, I do not imagine you will be further troubled by these beetles. Why the Grass round the holes should disappear I cannot say, unless the insect in making the burrow cuts through some of the roots.—G. S. S.

Grubs injuring Canterbury Bells (*H. W. Beedle*).—The grubs attacking your Canterbury Bells are the caterpillars of the dart-moth (Agrotis segetum), a very common insect. These caterpillars are very destructive in gardens, feeding on the roots of many different kinds of plants; it is hopeless to try and kill them by means of any insecticide. Copious waterings of soapy water will sometimes bring them to the surface, or watering the plants thoroughly with liquid-manure helps the plants, and is distasteful to the caterpillars. A ring of soot or gas-lime (the latter should not be less than two months' old) laid round plants will protect them. Hoeing round the plants they are attacking is useful; but turning them up out of the ground is the most effectual way of destroying them.—G. S. S.

Winter-moth (*W. H. Marriott*).—The Winter-moth will attack Pear as well as Apple-trees. As you are probably aware, the sticky composition should not be put on the stem of the tree; a band of grease-proof paper should first be put round the tree, and then a band of coarse canvas, sacking, or some similar material, smeared with cart-grease or Davidson's composition. The former I presume could be obtained at any wheelwright's; I am afraid I cannot say where the other can be had. These bands should be put on at the end of this month. The points to be observed are that the bands should be so fastened that no moth could creep underneath, and that the sticky material used should be in such a condition that the moths cannot cross them.—G. S. S.

HOUSE AND WINDOW GARDENING.

HYACINTHS IN GLASSES.

As the time of the year is now at hand when attention must be turned to obtaining a supply of suitable bulbs for the spring display, there may be readers of GARDENING, who are contemplating the above method of culture. It is needless to discuss the question of whether better flowers can be grown in water or in soil, for the system is usually a matter of convenience among amateurs rather than anything else. Most people like a few fragrant flowers for the adornment of their rooms, and glasses are more suitable for the windows of rooms than pots, therefore Hyacinths are often grown in this manner by those who are not furnished with the facilities afforded by a greenhouse.

The first step is, of course, to get the bulbs and glasses, and speaking first of the former, the best to obtain are those of medium size and symmetrical shape. It does not follow that very large bulbs produce the best flowers, while on the other hand bulbs even and of medium size are best suited for the glasses. Towards the middle of October is early enough to obtain bulbs and commence operations, and by careful management a part of the supply can be placed in the glasses at once, and the remainder preserved on a shelf in a cool room for succession. The Hyacinth family presents a large variety of colour, so that there is no difficulty in obtaining a display of white, blue, pink, and such-like kinds. It is the best plan to obtain the glasses of even size and equal pattern, and these are supplied by most horticultural sundriesmen.

Having got glasses and bulbs, the former should be filled with water sufficient to immerse the lower half of the bulb. If the latter are inserted too deep in the water the growth will rot off in its early stages. Clean, soft rain-water is the best to use; but hard water if quite clean is preferable to using dirty soft water. A few pieces of charcoal dropped into the receptacles is of great assistance in keeping the water pure. The next step is the treatment of the bulbs prior to the commencement of growth. Naturally the Hyacinth commences root action before there is any perceptible movement in the growth of leaves and flower-spike; and here the same treatment as if the bulbs were potted, should be given. Place the glasses in any dark, cool place, such as a cellar, and pay careful attention in occasionally replenishing the receptacles, and removing them as it becomes necessary.

It will be seen that numerous white fleshy roots are emitted from the base of the bulbs, and these quickly absorb the water in the glasses. If the latter are allowed to become and remain empty, the roots loose their means of sustenance, and consequently wither and die. The developing flower-spike being dependent on the support it receives from the roots, soon follows suit, the result being that trouble and expense are entirely thrown away through neglect in keeping up the supply of water. When the glasses are full of roots, and the spike is plainly showing itself, they should be removed to the light, in order that the latter may be strengthened and aided in its development. A somewhat shaded position should be given for the first few days, till the growth assumes a green hue, and then stand the glasses in the window where they may receive the benefit of the scanty winter sunlight.

As the spikes develop and the flowers open, some support will be necessary, as their weight is apt to break them down. For this purpose, cheap wire supports may be obtained, and, being neat in appearance, they are very suitable. Hyacinths in glasses, when in bloom, are very pretty for the decoration of the dinner-table, even more so than when grown in pots, and to those who have not the facilities for pot culture this system is very suitable, as it is extremely interesting to watch the steady development of these charming flowers.

H. H.

Climbers for window-boxes (*J. L.*).—Annual Tropæolums are about the best flowering climbers you can grow to hang down from a verandah window-box. Tropæolum Lobbianum, especially the brilliant vermilion variety, is very attractive and grows quickly, and the well-known Canary Creeper (T. canariense) mingles its yellow blossoms effectively with the former. The perennial T. tuberosum sometimes does well in a window-box, while Eccremocarpus scaber and Mina lobata might also be used. Carnations, if well grown, look pretty hanging down from a balcony, and abroad beautiful colour effects are given by these flowers grown as suggested. The Ivy-leaved Pelargoniums, notably the bright cherry-pink Souvenir de Charles Turner and the soft salmon Mme. Crousse, cannot be beaten as decorative plants for window-boxes. With these latter well-flowered Paris Daisies, both yellow and white, would associate well.—S. W. F.

LILIUM AURATUM AS A POT PLANT.

As a reader of your valuable paper, and one who has gained considerable knowledge from the same, I take the opportunity of forwarding to you a photograph of Lilium auratum I grew this year. I hope you will be able to reproduce the picture in GARDENING. The question has been asked in GARDENING several times as to whether Liliums can be grown successfully from old bulbs. The photograph I send shows about thirty good flowers out at once, and then there followed twenty-two magnificent blooms, making fifty-two in all. There are three bulbs in one pot, with therefore an average of over seventeen flowers per bulb. They were all splendid blooms. I may say that after blooming last year as new bulbs they were put out of the greenhouse to ripen, then brought in and put at the back of the pipes, and in February were shaken out and repotted, with the result as shown. I think this is encouraging to others to try bulbs a second time, if not longer.

ROWLAND READING.

Lilium auratum in a pot. From a photograph by Mr. R. Reading, Love an Cottage, Bath Road, Walsall.

POTTING SOIL.

I HAVE noted that many amateur gardeners often labour under two impressions about potting soils that are quite opposite, and are both erroneous. One is to suppose that pot plants generally can be grown in any sort of material, the other is an idea that unless the best loam is available it is useless attempting the cultivation of many subjects at all.

If the soil be free from mineral impregnations (iron in particular), wherever the turf is composed of close, moderately fine Grass that has lain for some years, it may reasonably be expected to answer. It should not be dug more than 3 inches in thickness, so that it may be thoroughly permeated by the roots of the Grasses, as the mechanical influence of these root fibres, in keeping the soil in a porous, open condition, congenial to the plants which are to be grown in it, is of equal importance to the chemical elements contained in the soil. Autumn is the best time of the year for getting this turfy material together, as the roots of the Grasses are at that season the most abundant, and have then attained a tough, matured state, which enables them to last, or in gardening parlance wear well. It should be stacked up in the open air in a heap, ridge fashion, so as to throw off the rains, laying the Grass side of the turves downwards. As with most amateurs, it has to be used for many species of plants, some needing a little manure, others a good deal, it is better not to mix any with it at the time of stacking (as is sometimes done), because when it is prepared for use, manure, more or less, according to the requirements of the subjects to be grown, can be added. In respect to peat soil it is somewhat different; for plants that absolutely require soil of this nature it is necessary to procure it of a sufficiently open description, such as is obtainable from high-lying ground where Grass and Ferns grow freely; and not either the soft, boggy stuff with almost the consistence of putty, or that of a hard, impervious nature, generally met with where the strong varieties of British Heaths grow. Both of these latter are to be avoided; the former is totally unfit for anything but Rhododendrons, or some other hardy shrubs, and the latter is usually poor, and, even when well mixed with sand, not well suited to the roots of tender plants. Peat may generally be dug somewhat thicker than loam, but, like it, should be stacked up out-of-doors, where it is much better than under cover, except for so long as is requisite to dry it sufficiently for use. No more soil, either peat or loam, should be got in at once than is necessary to last a year, as after that time deterioration takes place by the decomposition of the fibres. Leaf-mould should also be procured to mix with the loam for Primulas, Cinerarias, and similar subjects, and it should in every case be well decomposed and be sifted through a fine-meshed sieve before being used; with the above, some well-rotted stable-manure, silver-sand, and Sphagnum Moss, amateur gardeners will find that they have got all that is needful in the way of soil for whatever class of plants they may choose to cultivate.

H. B.

OUTDOOR PLANTS.

NOTES ON HARDY FLOWERS.

Campanula grandis alba.—In its best form this is one of the finest of the Bellflowers, but it is not one of those things that may be allowed to remain untouched for several years. It increases rapidly, forming a crowd of young growths, and these individually are not sufficiently strong to throw up strong flower stems. Every other year the plants should be taken up, divided, and the strongest crowns replanted in well-enriched ground, for this is a strong rooting kind that soon exhausts the soil about it. If the planting is done early in October the plants will get well established, and will bloom in very different form than when left untouched for several years. (See illustration.)

Asclepias tuberosa.—This is one of the most brilliant of summer-blooming perennials, and one that appears to be unknown to the majority of hardy flower lovers. When well established it is wonderfully effective, and should be grown wherever soil and situation are favourable. It belongs to that class of fleshy-rooted things that are impatient of removal, and which therefore do not yield the full measure of their beauty until they have remained undisturbed for two or three years. A well-drained soil with full exposure to the sun are indispensable factors in the well-being of this Asclepias. In low-lying situations where the soil is of a heavy nature I do not advise it being planted, and in northern districts it should have the sunniest place that can be found in the garden.

Anemone japonica Lord Ardilaun.—Several new forms of the white Japan Anemone have been distributed of late, but this is the best of them. Lady Ardilaun, which was sent out at the same time, will never be thoroughly popular, as in some gardens it positively refuses to make healthy growth, the leaves being affected with a kind of rust which completely paralyses growth during the summer months. Lord Ardilaun, on the contrary, is apparently as vigorous and reliable as the type, and is a fine thing for the herbaceous border. The flowers are large and composed of two rows of petals, having a particularly elegant appearance when opening, much resembling the Niphetos Rose. It is safe to predict for this variety a large measure of popularity when it becomes known.

Gentiana septemfida. — In gardens like those of Mr. G. F. Wilson, at Wisley, one sees this Gentian in very fine form. It grows there into clumps several feet across, and flowers in great profusion. Seeing how distinct and fine this species is, one wonders that it is so rarely seen in cultivation. Planted in good loamy soil it grows freely, and once well-established it will increase in bloom-bearing capacity. This Gentian must have good drainage, unlike its relative, G. acaulis. It has thong-like roots that run down a foot or more into the ground, and for this reason frequent disturbance is not advisable. The flowers are about the size of those of the Gentianella, but paler, and are borne in clusters, opening successionally over a period of several weeks.

Phlox amœna.—Among the dwarf Phloxes this is the most effective, and when better known must take high rank among hardy perennials of low stature. It is of free but compact growth, and the flowers are produced in great profusion. The flowers individually much resemble in size and colour those of Silene pendula. It is a plant for any garden offering no cultural difficulties, and owners of small gardens should make note of it.

Campanula arietina.—This is so distinct from Bellflowers generally that, if only for variety's sake, it should find a place wherever this indispensable family of hardy flowers is grown. It forms cushion-like masses of foliage, the slender but wiry flower-stems running up to a height of about 9 inches. Although of very lowly growth, this Campanula is by no means delicate, soon growing into large, tufty masses. Like all the dwarf members of this family, it must have a free, well-drained soil, and where the latter is liable to become close and waterlogged in winter, should have a place on rockwork or where the roots are somewhat above the ordinary ground level.

Geum Heldreichi. — The common Scarlet Geum is one of the most brilliant of summer-blooming perennials, but G. Heldreichi, of recent introduction, is even more effective. The flowers exhibit a mixture of orange and scarlet, which is wonderfully telling. Even in the form of quite small specimens it is very showy, and I feel sure that when well established and grown in groups of half-a-dozen or more plants, it will prove one of the finest hardy flowers we have. With me it grows as freely as the older members of the family.

The tall White Bellflower (Campanula grandis alba). From a photograph by Mr. J. C. Smith, Nandana, Penrith.

Lilium pardalinum.—This Lily appears to be unknown to the majority of hardy flower lovers. It is a beautiul species, and much less liable to disappoint than such kinds as auratum and speciosum. In Mr. Wilson's garden at Wisley it grows with great freedom, and is one of the finest things to be seen there in the summer months. Two years ago, after a long period of heat and drought, I was charmed with the fresh, vigorous appearance of large groups of this Lily growing on elevated ground, in full exposure, in light soil. I would urge all who are fond of Lilies to give this a trial, for apparently it needs nothing more than a fairly good, free, well-drained garden soil to ensure its well-being.

Byfleet.

Tufted Pansy Sunset.—This has been a most persistent bloomer throughout the spring and summer, and even now is one of the best at present in bloom. The growth of the plant is dwarf, and flowers are profusely borne. The blossoms are of a good size, of circular shape, the ground colour is a good yellow, with a broad margin of crimson on the upper petals, which is less dense during the warmer weather. The eye is of the richest orange, and the flower is fragrant.

INEXPENSIVE BEDDING-PLANTS FOR SPRING.

"Alice" has inquired how to fill some geometrical beds with inexpensive plants in spring. She says she cannot afford bulbs.

It is easy to fill beds which have been full of summer bedded-out plants, so that they will look green during the winter and give a good display of bloom in spring by growing spring bedding-plants from seed and making a reserve garden, where they can be put during the summer, after having been divided, when taken taken out of the bed in which they flowered. Thus a large stock can soon be obtained with very little expense indeed.

But I cannot pretend that I admire geometrical beds on a Grass-plot, such as "Alice" sends a drawing of. If they were mine I should do away with them and put other beds in their place. I will, however, tell her how to fill them in an inexpensive way during those months when they are not occupied with summer bedding-plants.

Wallflower-seed, sown in March or April, comes up very freely, and the young seedlings ought to be pricked off as soon as they can be handled. If they are pricked off early into a reserve bed in the kitchen garden, at a distance of about 7 inches apart, they will be fine bushy plants by the end of September, when they can be planted into the beds out of which the summer bedding-plants have been taken. These beds ought to be well manured before they are put in, as no plants like and require feeding more than Wallflowers. They will then be green during the winter and give a splendid display in spring; but it is most important that they are pricked off the seed-bed as soon as possible. If left there they form tap-roots, and these are fatal to them. Once they have formed a tap-root they will not form a fibrous mass of roots as they ought to do, and then, of course, the plant either dies or would be better dead, so poor and lanky does it look. Wallflowers are best grown thus as annuals and thrown away after they have bloomed. Then Polyanthuses and Primroses are easily grown in the same way, only I prefer sowing the seed of these in shallow boxes in a greenhouse. They germinate very slowly, but if so sown in February or March will be nice little plants by May, when they can be pricked out into the reserve beds. After they have flowered they can be taken up and put back into a reserve bed, and most of them will flower well again another year. I wrote an article about them a few weeks ago in Gardening, which I think would be useful to any novice who wishes to get up a stock of these most showy and satisfactory spring bedding-plants.

Forget-me-nots are also spring bedding-plants which are easily grown from seed. And so are the old-fashioned Sweet Rockets. The white one is an especially favourite spring bedding-plant of mine, as it is not so often seen as Wallflowers or Forget-me-nots, and in a mass its tall, feathery spikes of flowers are most pleasing and effective.

Another old-fashioned spring-flowering plant of which I am fond is

London Pride.—It is very quickly and

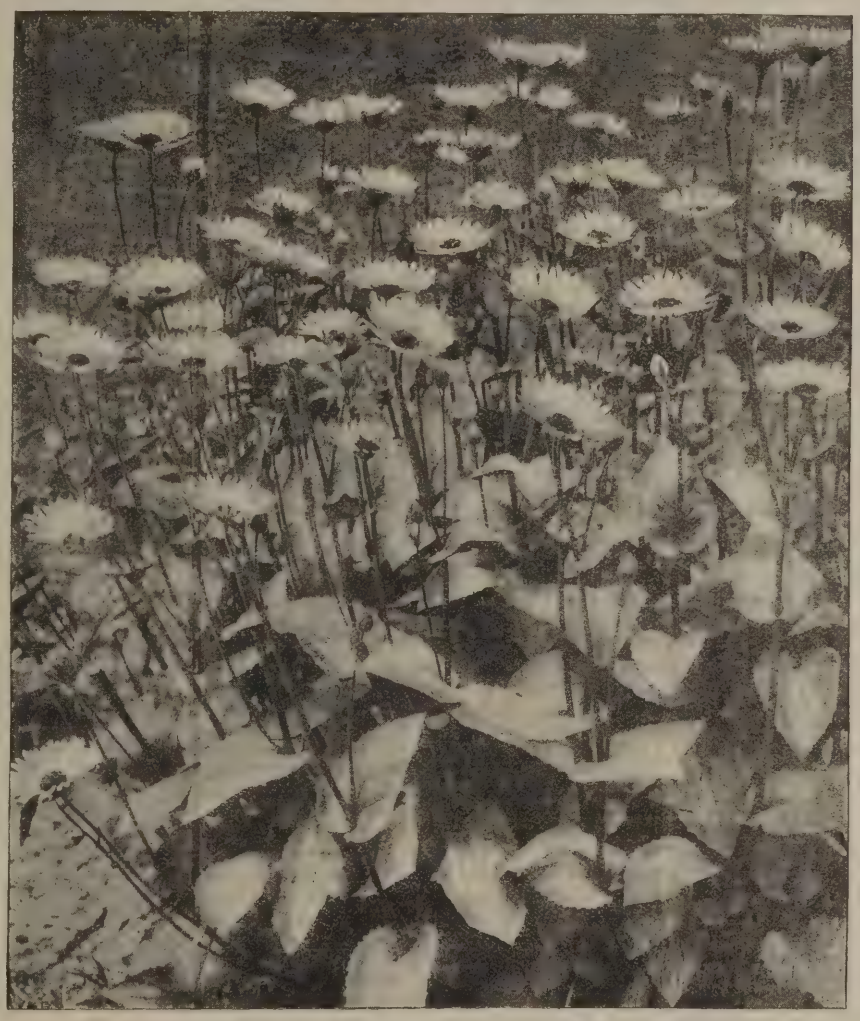
easily increased by division, and anyone who buys a few plants of it can soon procure a large stock.

Double Daisies, red, pink, and white, also increase very rapidly by division, and are most effective if massed in spring.

"Alice" must try these things if inexpensive gardening is her object, and shortly there will be other articles by me, giving further particulars about these and other inexpensive bedding-plants which can be grown easily from seed and by division. Mrs. Jocelyn.

THE LEOPARD'S BANES (DORONICUMS).

There are probably many more names than there are really distinct kinds among these, but on one point there is no doubt, and that is their value for planting in large groups and bold masses to give colour in early spring and provide flowers in abundance for cutting. There is hardly any soil in which they refuse to grow, for I have had them do well in that which is light and sandy, whilst the magnificent groups that suggest this note are growing in a tenacious clayey loam. Those who have them are mostly content with a tuft or two in the mixed border, but they deserve planting in a bolder way, for, apart from the bulbs, there is nothing in spring so early, graceful, and showy as these. Although names are numerous, they practically all come under about two types, the dwarf varieties being forms of D. caucasicum or austriacum, and the tall kinds descendants of D. Pardalianches. A variety (see cut) of D. plantagineum, named excelsum or Harpur-Crewe, is specially noteworthy, as it blooms more or less continuously from spring to autumn, whilst it grows tall and is the best of all for cutting.



Group of the large Leopard's Bane (Doronicum plantagineum excelsum).

African Marigolds.—Looking over the long, mixed border at Hampton Court Palace recently I noticed here and there very fine clumps of orange and lemon African Marigolds. These were of even growth, and gave large, rounded double flowers of perfect form. They were some of the most notable things in flower in the gardens just then. But by way of contrast were also many clumps of others of a truly wretched strain, the flowers neither single nor double, and most unornamental. This remarkable difference between what is bad and what is good, merits special notice, because those who get the bad strain think there is nothing better, whereas a first-class strain can be purchased as cheaply, and is just as easily grown. I do not know from what source the respective strains were obtained, but it is not likely we shall see the bad one grown in these gardens again.—A. D.

Apera arundinacea.—A very beautiful plant of this exceedingly handsome Grass was exhibited at the last meeting of the Royal Horticultural Society, and was recognised with an award of merit. The growth is rush-like and bears very freely long drooping feathery plumes. As the plant was exhibited it made quite a unique display, and was generally admired. The plumes would be invaluable for decoration.

SOME SMALL BEDS MASSED.

"N." wants to know how to fill three beds in front of her house in a permanent and effective manner. One bed is 4 feet by 12 feet, and I think it would look gay and uncommon if planted thus with Crocuses, Hyacinths, Gesner's Tulips, Davuricum Lilies, Phloxes, and Aster Amellus bessarabicus. It would thus look gay during March with Crocuses, April with Hyacinths, May with Tulips, June and part of July with Lilies, August with Phloxes, and September with Asters. I should use Violet Crocuses, Charles Dickens Hyacinths, which are rich blue and very good bedding ones, and the Davuricum Lily named Incomparable, which is an especially fine one of rich scarlet, and produces large trusses of bloom. The Phloxes I recommend are Avalanche, Sylphide, and Themis (whites), Michael Cervantes, Sibylle, and Souvenir d'Emile Liebig (pale pinks), Flambeau, Tempête Aurore, and Pantheon (salmons and roses), Coccinea, Pont-Bignet (deep reds), Robur (deep violets), and Lucie Baltet, Esclarmonde (lavenders).

Before planting, some rotted manure and a liberal supply of leaf-mould must be deeply dug into the bed. Then the Phloxes must be planted out at a distance of 2 inches from the edge of the bed, and three plants at even distances apart across the width of the bed. Down the length of it I should plant them at a distance of 1½ feet apart; thus there would be eight plants down the length and three rows of them, twenty-four plants in all. Immediately between each two Phloxes I should then put in an Aster bessarabicus. Having done this, I should then lay all the bulbs on the surface of the soil that is left unoccupied—the Lilies at a distance of 6 inches apart down the centres of the soil between every row, so as to keep them as far from the plants as they will go; the Hyacinths everywhere, even close up to the Phloxes, Asters, and Lilies, at a distance of 6 inches apart, and the Tulips netted in between them alternately. The Crocus bulbs, being small, will net in again between all these others, and can be planted everywhere where there is a free inch and a half of soil to lay them on. They can hardly be planted too thickly for good effect.

I have proved in my own garden that this bed is a very pretty one, and this is the way I plant it: I lay all the bulbs on like this, and then let the gardener plant them in a few inches deep with a trowel. If mulched every autumn with manure and watered during dry weather this bed will last and be successful for many years undisturbed. Of course, an occasional watering with liquid-manure is a great help to it, but not an absolute necessity. As will be seen by those who know the plants I recommend for it, it will be a mass of violet in March; give the appearance of being merely a bedded-out bed of blue Hyacinths in April, look in May as if it was full of enormous scarlet Tulips (as their long, stiff stalks over-top the other things at that season of the year); in June appear to be a bed of huge scarlet Lilies; in July and August give a mixed effect from its collection of Phloxes; and in September it will again be violet with a mass of flower from one of the most effective and best Michaelmas Daisies (Asters) we possess. This Aster has the great advantage of not having the spreading roots so many of the Asters have, and which in a massed bed of this description would be fatal to the bulbs in it.

"N." also has three small beds 3 feet by 6 feet. If they were mine I should plant Tea Roses in one of them and Hybrid Perpetual Roses in the other. In the Tea Rose bed I should put a complete carpet of blue Scilla sibirica and Scilla nutans alba, netting the bulbs in alternately at a distance of an inch apart. The Scilla sibirica will give a mass of vivid blue in March and April, and when they are over the white Scilla nutans will occupy the entire bed and give a wonderful effect.

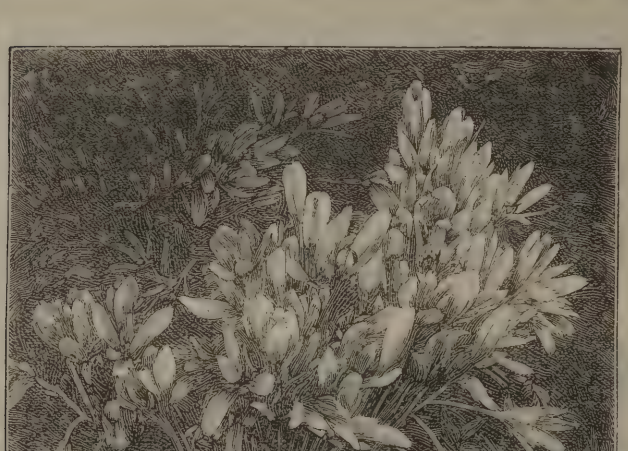
The bed of Hybrid Perpetual Roses I should fill with a collection of Daffodils (Narcissus), putting a clump of four bulbs between each two Rose-trees all over the bed. I should use Emperor, Empress, Horsfieldi, Grandis, P. R. Barr, Sir Watkin, maximus, and princeps; they will all flower at once. The Roses I should plant in two rows, and four Roses in each row (eight in all). If liked, yellow Crocuses could be netted in amongst them and everywhere over the soil; this would make the bed gay when the other bed with Scillas was bright with violet; but I think the clumps of

Narcissus look better standing out by themselves than when they have a carpet of Crocus leaves beneath them. However, that is a mere matter of opinion, and in a small garden, if there are no yellow Crocuses elsewhere in it, this would be a way of having a bed of them without doing any real harm.

The eight Tea Roses I should choose would certainly be Grace Darling, Mme. Berard, Maman Cochet, Mme. Eugène Verdier, Vicomtesse Folkestone, Gloire de Dijon, Perle des Jardins, and Bouquet d'Or. Mrs. Jocelyn.

THE COLCHICUMS.

These remind us, if a reminder is necessary, that the bulb season proper is fast approaching. Their ever-welcome flowers are just now making a good display, and as our illustration shows, they may be naturalised in the Grass, where they have a pleasing effect. They seem quite at home in such a position, gaining strength, which means an increase of bloom, every year. The kinds chiefly employed are the old C. autumnale and C. variegatum, the tessellated Colchicum. C. speciosum, a noble kind, shows a wonderful variation, some being nearly as large again as those usually grown, although the colour has improved little if at all. C. byzantinum is also worthy of attention; it seems to come exactly between autumnale and speciosum. It has faultlessly formed flowers, not so deeply coloured as those of the latter, and pale almost white in the throat and base of the segments. The double varieties of C. autumnale are very charming, as the double white, rose, and other forms which last longer than the single kinds. Colchicums should always be planted with Grass, Stonecrop, or some dwarf plants as a groundwork; otherwise, the soil gets splashed up and the flowers spoilt. C. Parkinsoni is quaintly coloured.



Colchicums in the Grass.

BORDER CARNATIONS.

As a large grower of these popular flowers I thought perhaps a few hints at this important season respecting their cultivation might be acceptable. I am pleased to observe week by week the increasing interest taken by the readers of Gardening Illustrated in the Carnation. Certainly I cannot call to mind a more beautiful or valuable flower; it is acceptable at any time of the year, and its cultivation is certainly not difficult. When I am asked—which I frequently am—what flowering plants are best for the cottagers' garden and what I recommend for the cottagers' flower show, I invariably mention the Carnation, and yet not one single schedule of the cottagers' show which has come under my notice has contained a class for it; it is generally the Aster, Stock, Zinnia, Dahlia, "Geranium," and such like. This must be due to oversight of those who arrange the schedule, and not because the cottager cannot grow the plant. Assuming that the layering was done some eight weeks since, the layers will be well rooted and fit to plant out into their permanent quarters, and this should be done without delay. I always endeavour to get some of our best kinds put into beds during August, and complete my planting during September. I know some consider this early, but I find it is not one day too soon; the soil being warm the young plants take to their new quarters at once, and get thoroughly established before bad weather sets in. It is useless to plant Carnations in November; it is too late for them to make sufficient roots to fix them for the winter, and the first thaw after a sharp frost lifts them out of the soil, and, if not attended to by way of pressing them into the soil directly it is dry enough for this purpose, the drying winds of March will make sad havoc of them.

Preparation of the beds in which they are to be planted is an important item; in fact, too much stress cannot be layed on this. The soil should be rich and porous, but it must be made so without the use of crude manure. No rotten manure should be dug into the beds. It must be done quite in a different way to this—viz., by mixing a good heap as follows: Good, sound loam, one-half; leaf-soil, one-third; bone-meal, one 5-inch potful to each barrowful of soil; the same quantity of old soot. Mix all well together. Dig one-half of this into the borders or beds in which the layers are to be planted; the other half to be placed on the surface, and when dry enough to tread without sticking to the boots the beds or borders should be made quite firm.

Planting is also most important. The layers should be taken off carefully, with a good ball of soil attached, and carefully placed in a hole sufficiently large, being placed in it without squeezing. The soil should be carefully placed round the ball, and the former made moderately firm about it. If the soil is at all dry give a good watering with a rosed can; this will settle the soil about the roots of the layers. It is surprising in what a short space of time the young plants will become established. I always pot up some of my strongest layers and winter them in a cool-frame, but I take care that the lights are kept off at all times, except when heavy rains are falling or the weather is very severe. Last year I reserved about 1,200 plants in this way, and these came through the winter very satisfactorily indeed. In my case it is absolutely necessary to pot up a considerable number in order that they may be placed out in the flower garden, where a few beds are required after some of the earlier spring bulbs and other things have done flowering. There are enemies amongst the Carnations in common with most other plants, and these must be destroyed. I suppose the greatest pest is wireworm; this, however, is rarely met with in old vegetable gardens. The pests are more likely to be introduced with the new soil, such as turfy-loam; therefore this should be carefully looked over before being placed on the borders. If, however, any should be found in the beds or borders, they should be baited with pieces of Carrot, which should be placed on a wooden skewer, and thrust into the soil, and examined every day. There is also another pest, which I consider far more troublesome—viz., the Carnation-maggot; this is very tiresome in some gardens. Aphis or green-fly is always present in very hot weather, but this can easily be destroyed in many ways, but perhaps the simplest is to puff a little Tobacco-dust into the points of each plant. In the summer I place a layer of spent Mushroom-bed over the soil; this is beaten fine with a five-tined fork, and spread over the soil to a depth of 2 inches; this acts as a stimulant, and keeps out drought. The plants should also receive several soakings of manure-water; I like that from the cow-sheds.

T. E. Arnold.

The Gardens, Cirencester House.

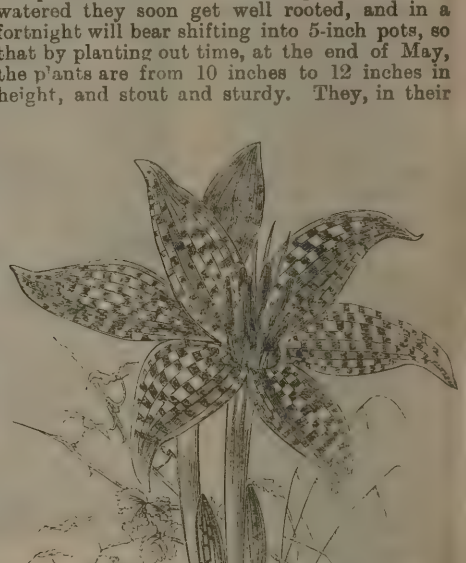
Tuberous Begonia Lafayette.—This excellent double flower of rich crimson seems to be but little known, its merits as a suitable sort for bedding being most pronounced. A beautiful basketful of plants was exhibited recently, and were lifted from a bed in the open the day previous. The plant is specially adapted for bedding.

OUTDOOR VIOLETS.

What is the best way to get the large single Violets and of a good dark colour? Will they do in a wood? Can anything be done with old roots that have got poor? How should fresh ones be started?—Little Toad.

*** One of the largest and best of the single Violets is California; this variety is exceedingly fragrant, long-stalked, and of elegant form. Another variety of about the same dimensions, but possessing wider petals, is Princess of Wales. Both are of good purple colour. It is useless to think of cultivating these fine Violets with success in a wood. All the finer kinds require careful culture over a lengthened period to show their true value. A dozen blooms of either of the two varieties here mentioned, when at their best, will make a large button-hole. The old roots are of no use. At the end of April or commencement of May runners should be taken off the old plants and planted in well-prepared soil, in rows 12 inches apart, the individual plants being 10 inches from each other. The bed, if dry, should be copiously watered, and a top-dressing of well-rotted manure given. If the weather should be very sunny after planting a few lightly-foliaged boughs can be laid over the plants temporarily. Liquid-manure applied during the summer will add greatly to the strength of the plants. All runners should be cut off as soon as they form, when, by the autumn, the plants should be studded with flower-buds. An exhaustive article on the culture of Violets appeared in Gardening Illustrated, March 21, 1896. S. W. F.

Dahlia plants.—One reason given by a lady writer, on page 410, for not raising young Dahlia plants from cuttings in the spring differs from an ordinary grower's opinions. The proper course to take when receiving newly-rooted plants from the florist in the spring is to at once put each singly into small pots, and if they have been properly packed the plants will have small balls of soil and roots. When potted and put into a warm frame or greenhouse and watered they soon get well rooted, and in a fortnight will bear shifting into 5-inch pots, so that by planting out time, at the end of May, the plants are from 10 inches to 12 inches in height, and stout and sturdy. They, in their way, bloom early, finely, and for a long season. Such plants give better results than do pot roots. It is, however, all a question of proper treatment and culture.—A. D.



Colchicum Parkinsoni.

Acanthus mollis.—I beg to send you a photograph of a specimen of Acanthus mollis which has recently blossomed in my garden. The plant is about ten years old, but has never bloomed before, neither do I think that it often does in England. Two of the spikes were 6 feet high, and its foliage is very handsome. The plant is growing in a south aspect, and protected by a tarred wooden fence.—Alfred Playne, *Lynhames, Maidenhead.* [*A very fine plant well placed.*—Ed.

FRUIT.

ESPALIER PEAR-TREES.

Few fruits are more valued than good Pears, and the amateur can grow them so well that if they are given a little attention they may be termed profitable. The espalier is a convenient mode of culture, as the cultivator can so readily get at all parts of the tree, and, what is better, the flow of sap is more evenly distributed. With many fruits there is a rush to the top, and the lower part of the tree becomes impoverished. The variety illustrated, Marie Louise, is one of the best Pears for training in this way. It is not a gross grower trained thus if ample attention be paid to the formation of strong, lower branches. As regards its quality it stands in the front rank. It is a long, handsome fruit, smooth skin, greenish-yellow, flesh melting, juicy, and sweet, being in season during late October and November. It does best on the Quince-stock, as on the Pear it grows too freely. It is also much earlier on the Quince. I prefer this variety grown as an espalier to any other form, as though in warm soils it succeeds well as a bush, in heavy, wet soils it is not so good, and should be given a wall. The fruits of Pears of most kinds are better when grown in the open than on walls, and the best are from espaliers, as here the sun and light circulate freely through all parts of the tree and the fruit is of better flavour.

It may be asked, does espalier training produce the best results? And in a measure much depends upon the soil and situation. There are few, if any modes of culture so suitable for amateurs as espaliers. The trees are more easily looked after, and what, in my mind is so important when grown thus, form a nice finish to the garden. They may be employed for dividing the kitchen-garden from the lawn, or even planted by the sides of walls in narrow borders, or as an edging to the front quarters. Trees grown thus are more readily protected from birds, and in severe weather, if in bloom, they can be sheltered much better than bush-trees. It may be asked, what about the initial cost, and it is not more than good bush or wall-trees. Good trees may be obtained for a small outlay. Of course there is the cost of supports to be considered, but it is not great. A few young Larch poles last for years, or, as a permanent fence or support, iron standards and strained wire form a neat support, and last many years if painted occasionally. Few fruits lend themselves to greater advantage than the Pear trained thus. The wood gets well exposed to light, and becomes firmer and more fruitful, and the training is so simple. Let me advise amateurs who have little knowledge of fruit culture to purchase well-balanced trees at the start, those with at least two or three tiers of branches. Grown thus, the tree is so shaped in its earlier stages that it gives much less trouble in after years, an important point being to allow a free top-growth of the leading shoot, stopping breast wood to form spur, and encouraging the side or main leaders on each side of the tree to make a fair growth at the terminal points. This continues the formation of the tree and encourages a free flow of sap at the base. Every season till the height desired is attained, three shoots must be made, two side ones, another at top, and others will be pinched back to the fourth leaf. They will then form what are termed fruiting spurs, and from these the best fruits, while the tree is making wood, will be secured, as the new wood will not fruit whilst forming the tree, but the two-year-old will if not overcrowded with shoots.

I have dwelt rather long on the pruning at the start, as the foundation of the trees is a strong point, and once the work is mastered it is simple and interesting. A few words as to

Planting, and now is the season to select trees. I prefer early planting as soon as the leaf falls, and if the soil is unsuitable it can be prepared in advance so much the better. In heavy, wet soils drainage is important, and much may be done to assist the same by giving lighter materials—brick rubble at the base, and a liberal addition of old mortar rubble or road scrapings. In certain gardens fruit-trees cannot thrive if drainage is deficient, and the above will aid greatly. In light soils one can often add heavier materials. I have used such to advantage, and in such soils more food can be given. Bone-meal is excellent, but avoid rank animal manures. If these are given they are best as a mulch on the surface after planting. Firm planting is also a necessity, well treading the soil; also, planting when weather allows, not to get the land in a pasty condition. By early planting the soil is in better condition, and trees get a better start, and do not suffer the following season if hot and dry. W.

Marié Louise Espalier Pear-trees.

The Blackberry.—This highly esteemed and much sought for fruit is becoming more popular every year in private gardens. Thirty years ago one would not think of growing Brambles in our gardens. Five years ago a large quantity of Blackberries were planted here, which proved successful, so much so that they are admired by everyone. By cultivation and an abundance of manure the fruit has improved considerably in size, quality, and flavour, some hundreds of pints being gathered yearly. The plants are grown to a trellis 5 feet 6 inches high, and 8 feet apart between the lines running north and south. There is adequate space to admit of the necessary labour and attention being given. After the fruit has been gathered, the old canes should be cut out to admit light and air to ripen the young growths selected to be tied to the trellis about 9 inches apart, and the useless ones cut out. Avoid cutting off the points, but where such is practised, it should be done in the spring, before the flow of sap becomes active. A dry, sunny position should be chosen, and give a heavy mulch of farm-yard manure.—G. S. Macdonald, *Poltallock Gardens, Argyllshire.*

Peaches in Cheshire.—I think the following details may be of interest to your numerous readers, with regard to some Peaches grown in Cheshire. We planted a young Peach-tree Nov., 1894. This year is was allowed to carry three dozen Peaches. Many more were pulled off at thinning time. The last few days we gathered some of them, five of which measured 11½ inches in circumference, one of them weighed 13 oz., the others 12 oz. each, the whole of them being very large and good. The variety is known as the Princess of Wales. —J. Hughes, *Gardener to Mrs. Park-Yates, Ince Hall, Chester.*

Primula obconica fimbriata.—This is a fimbriated form of the well-known P. obconica. Any variation in the form of the original should be welcomed, so long as other points are equal. This being so, we may safely look forward to the new kind becoming popular.

ORCHIDS.

Dendrobium (*J. A. H., Melford*).—The name of your Dendrobium is D. superbiens. It is certainly one of the most striking of that genus which inhabit the northern part of Australia—namely, York Peninsula and some of the islands in Torres Straits, from whence it was introduced into this country by Messrs. Veitch in 1876. The longevity of the flowers of this Dendrobe is remarkable. If the plants are kept in a moderately cool, dry temperature while in bloom, the flowers will remain fresh for six or seven weeks, and this during the season when Orchid blooms are scarce; it becomes, therefore, exceedingly useful for decorative purposes generally. After the flower-spikes are cut, the plant should then be allowed a long period of rest. Place it in the lightest and dry part of a house, where the winter temperature does not fall below 60 degs. Any undue excitement as regards heat and moisture while the plant is at rest will cause premature growth, which, in the majority of cases, lacks that amount of sturdiness which is so essential to strong-flowering bulbs. While at rest only just sufficient watering should be given to prevent undue shrivelling of the pseudo-bulbs. About April or May the plant will again commence to grow, and when the new shoots are a few inches high numerous young roots push out from their bases, and immediately these appear the plant, if necessary, should then be repotted, or, if no greater rooting space is needed, the old material should be picked out from between the roots and fresh compost substituted. The plants will thrive in pots, which should be small in proportion to their size. Overpotting must be strictly guarded against, because if the roots get into a mass of wet material they quickly decay, and the growths make no further progress. Therefore, when repotting, use but very little compost, and pack it firmly around the base of the plant. The best potting material is peat and Moss, well mixed together, with the addition of a few thick pieces of crock intermixed with it. After repotting place the plant in the hottest and sunniest position available in the plant-stove or Cucumber-house. Until the roots have laid hold of the compost and around the inside of the pot water must be afforded only in small quantities; but when firmly established and until growth is completed it may be afforded copiously —W., *B.*

Tufted Pansy Pencaitland.—This is a wonderfully free-flowering variety, and the blossoms are produced on a beautifully dwarf and tufted form of growth. The blossoms are very white indeed, of medium size, and with rays, the only objection being a free suffusion of yellow around the eye on the lower petal. Yet as an effective bedding sort it should be in demand.—D. B. C.

GARDEN WORK.*

Conservatory.

Rearrangement with a view to make the most of the space is a necessity with most of us at this season. But it is better to throw out an old plant or two than overcrowd. Tacsonias are still beautiful, but will have to be thinned and shortened as more light is wanted. I was in a conservatory a few days ago, and planted in one of the beds was a very large old plant of the White Brugmansia just opening its flowers. It usually flowers earlier than this, but the plant had been cut back hard rather late. It is a noble plant where it has root room and abundance of water with liquid-manure once or twice a week. It is beneficial to cut back rather hard sometimes, and it breaks freely out of the old wood. Cuttings strike freely any time during spring or summer. Oleanders which have been outside should be placed in a house where there is a little warmth to get the flowers open. Tree Carnations and Bouvardias are charming things now, but must have a night temperature of 50 degs. to 55 degs. In a cool-house damp settles on the petals and spoils them, and the buds do not open well. Rhododendrons if well set with buds should be potted up now for forcing. It is better not to use strong heat; let them come gradually. With so many Chrysanthemums forced flowers will not be required in quantity much before Christmas. Among new Tea Roses Belle, a new American variety, is sure to become popular for the conservatory and for cutting. It has longish, pointed buds of a bright pink colour; the plant is vigorous and of free growth, and each shoot has one or more flowers. Maman Cochet (a salmon-shaded pink) is also a beautiful Rose for pot culture. Very beautiful also is Mme. Pierre Cochet, with apricot-coloured flowers, very distinct. Ivy Pelargonium Ryecroft Surprise is a fine variety for winter flowers. It has a robust, sturdy habit, and produces large trusses of bright pink flowers at every joint; good for cutting. It is a good plant for a vase or basket with the shoots trained over. Does not ramble like many of the Ivy "Geraniums," but it will cover well where it goes. The large-flowered Chrysanthemums will now be opening their blooms, and a little fire will be necessary to keep the petals from damping. Be careful about making dust, as the leaves soon get choked in a dusty house.

Stove.

Euphorbia jacquiniæflora flowers freely when the growth has been well ripened. The best way to treat it, if required for cutting in winter, is to plant it out in a light position in a warm-house Other useful winter-flowering plants—Begonias of sorts. The new Continental variety, Gloire de Lorraine, will become a favourite for winter work, as it grows so dwarf and sturdy, and is literally covered with flowers, in which condition it may be taken to the conservatory. It shows up well among light, fanciful, Maidenhair, and other Ferns. Well-coloured little Crotons in 48 pots will be useful for late work; and when well done the variegated Cyperus is very effective as a table plant. Small Maiden-hairs or Selaginellas planted on the tops of the pots are an improvement for table work. Mixtures of Ferns—two or more varieties in one pot—are rather pretty. Pterises—argyrea and straminea—forms a happy contrast. See that nothing suffers for want of water, nor yet have too much Orchids which have been taken to a light house to ripen pseudo-bulbs should be brought on now, unless they are kinds which grow naturally in a low night temperature. Be careful of the fuel; keep the flues clean, so as to take all the heat out of it, without rushing it up the chimney with an open damper. This refers to all fires.

Early Peaches.

Those who contemplate planting Peaches under glass should prepare the borders now. In cold districts, where the soil is of a heavy nature, keep the borders well up, and concrete the bottoms to keep the roots off the clay. The top spit off a clay sub-soil will generally grow good Peaches, but the roots must be kept out of the sub-soil; and some old mortar or plaster should be mixed with it to keep it sweet, and to permit of liquid stimulants being given when the trees bear heavy crops. At the beginning good loam is rich enough for Peaches; if manure of any kind is used the trees make too much wood, and it takes some time to induce them to settle down and bear freely. Early Rivers, Early York, Hale's Early, Stirling Castle, Crimson Galande, and Dymond are all good varieties. If the houses are small then I should plant Early Rivers, Rivers' Early York, Hale's Early, and Stirling Castle in first house, and Crimson Galande, Dymond, Alexander, Noblesse, and Barrington in the second house; Princess of Wales, Sea Eagle, and Walberton Admirable are suitable for the latest house. Plant the trees as soon as the leaves fall. If the borders are right and not too rich Peaches soon come into bearing.

Pot Vines.

The most useful Grapes for forcing are the Black Hamburgh and Foster's Seedling, and they may be grown under the same conditions. Strong, well-ripened canes, shortened back to 6 feet, ought to carry 10 lb. of Grapes if well nourished. But the Vines must be well grown and well ripened, otherwise it cannot be done, though judicious manuring will do something. I have found a good artificial manure very useful for pot-Vines. It may be used freely as a top-dressing, or mixed with the soil when the last shift is given. Sometimes when strong stimulants are given the berries may be large, but do not colour well, but the manure helps the colouring and encourages early ripening.

Window Gardening.

Prepare for winter by arranging all tender plants indoors. If carefully managed a spare room may be made into a temporary greenhouse in winter, but before frosts set in provide heavy curtains to the windows and stop up the chimney, and keep the plants dry. There are plenty of flowering plants. The Scarborough Lilies are very bright; Cyclamens are coming in; Heaths, such as gracilis and Caffra, are seen on the hawkers' barrows; and there are plenty of early-blooming Chrysanthemums.

Outdoor Garden.

Improvements involving the removal of evergreen shrubs and trees may be commenced. Turf, also, may be taken up and relaid now. Those who prefer to make new lawns by sowing Grass-seeds may sow yet; but it must be done at once, and the ground must have been put into good condition. If only a small lawn has to be made I should use turf, and under any circumstances all slopes and margins should be turfed. In some districts good turf is expensive, and where economy must be studied seeds may be employed; but they must be sown thickly, lightly raked in, and when the surface is dry run a light roller over them to press them down. Afterwards keep off it till the seeds are up and the weeds begin to shoot, for weeds will grow as soon as the Grasses, and should be pulled out during the autumn. It is important that the seeds be sown thickly, for the birds may take some, and others may fail to make good plants. Four bushels per acre will not be too much for sowing now. In laying out new grounds do not raise steep banks. In the summer the shrubs and plants on these narrow, steep mounds are starved for want of moisture, and only the hardiest things thrive. The same thing occurs if steep, imitation rockeries are run up with little or no suitable provision made for supplying the plants with food. This is a good time for overhauling rockeries where the strong, common things are overgrowing the weak ones of better character. Look after the tender plants. We shall have frost soon that will destroy tender plants.

Fruit Garden.

Prepare sites for wall-trees. Where the subsoil is cold clay adopt some means for keeping the roots out of it. Six inches of good concrete, 4 feet square, to form a station for each tree will save a lot of trouble by-and-bye, and if old trees have previously occupied the same site, change the soil for the young tree. A good arrangement will be to dig out the site for each tree 4 feet square and 2 feet deep; place 6 inches of concrete all over the bottom of the hole, and plant the tree so that the collar is well above the natural level In the future, if the roots dip down over the edge of the concrete into the cold subsoil, they can be easily lifted. This is especially necessary for Peaches, Apricots, and the best dessert Plums. Black Hamburgh and Sweetwater Grapes which have been ripe some time will keep better now if cut and bottled, and the bottles suspended from a shelf or rack in a dry room. Black Grapes retain their colour longer in the dark. Three good Strawberries to plant now are Royal Sovereign, Sir J. Paxton, and Latest of All. They are also equally as good when forced under glass; but the time for forcing is not yet. Let the plants remain out till sharp frost is expected, then plunge the pots in a cold-frame or pit. If late Melons in frames are to ripen properly the linings should be removed so as to throw a little extra warmth in the bed. Good Plums are scarce now, but Monarch is a good, rather late Plum, and Golden Drop and Grand Duke are still in season.

Vegetable Garden

If a constant supply of French Beans must be kept up, sowings should now be made in a warm-house or pit where a temperature of 60 degs. or 65 degs. can be kept up at night. They are often grown in Pine-stoves and other forcing-houses in winter in 6-inch pots, five Beans in a pot. Cucumbers in warm-houses will now require a good deal of attention in pinching, tying, top-dressing, etc. If Cucumbers are allowed to grow out unstopped—at least, so far as the side shoots are concerned—the plants never bear so well, simply because the house gets crowded with useless growth; but when first planted it is desirable to let the main stem run well up the wire before stopping the leader, as this increases the vigour; but the side shoots should be stopped one leaf beyond the first, and this stopping should be regularly carried out. Only a limited number of fruits should be left on the plants if the latter are to remain through the winter. A supply of green Mint, Tarragon, Chervil, and Basil should be provided for winter by potting up roots now. The Chervil will do in cold-frames, but the Mint, Tarragon, and Basil will require heat by-and-bye. There should be no spare frames now. All should be filled with something useful, such as Lettuces, Endive, Cauliflowers, etc. Continue to prepare manure for Mushroom-beds, and fill up all vacant spaces in the Mushroom-house.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 27th.—Root-pruned several pyramid Pears. Potted more bulbs for forcing. Made up Mushroom-bed in house. We always use a proportion of loam with the manure to shorten the time when making up. Planted more early Cabbages. Moved the last of the Violets prepared to the frames. A few of the strongest crowns were potted. Thinned late-sown Spinach. All waste matters, such as lawn-sweepings, Grass, weeds, etc., are formed into a compost and mixed with loam.

September 28th.—Gathered fruit of various kinds as it becomes ripe. Cut and bottled the remainder of Grapes from early houses, and opened the house altogether for a time. Finished moving Cyclamens and Primulas to house from pits. Took and replanted the Box which had become worn in some places. Relabelled the herbaceous plants in a long border where the labels have either worn out or been removed. Labels are continually disappearing from various causes.

September 29th.—Tied and stopped Cucumbers in warm-houses. Shifted on young plants of Pteris Wimsetti, one of the best furnishing Ferns, and comes true from spores. Pulled up Tomatoes in two houses to make room for late Chrysanthemums. Added fresh manure round a frame of Melons to throw a little warmth into the bed to finish off the fruit. Finished shifting on the Poinsettias, and moved to warm-house.

September 30th.—Shifted Deutzias, Spiræas, Solomon's Seal, Rhododendrons, hardy Azaleas, and other plants for forcing. They will be kept in cold-house or pit until required to force. Pruned and potted some Tea Roses to flower under glass, but not to be forced much. Rearranged conservatory to make room for early Chrysanthemums and others things now requiring much space. Some old plants have been thrown out.

October 1st.—All Tomatoes on walls outside which are large enough to be of any use have been gathered, and will be ripened on boards in a house where there is a little sun. Stirred the soil among freshly-planted Strawberries, Spinach, etc. Finished planting Carnations for the autumn. What remains to be done will be put off till spring. Planted a lot of bulbs of various kinds. They were many thousands in number, and were grand bulbs for cutting last season.

October 2nd.—Pricked off Cauliflowers in temporary frames. Took cuttings of Calceolarias and dibbled them in cold-pits. Cleared off some of the beds in flower-garden, and planted them with Tufted Pansies, Wallflowers, Forget-me-nots, and a few golden-leaved shrubs in groups. Bulbs, also, have been planted freely. Crocuses, single Snowdrops, and Winter Aconites have been planted in large patches to throw sheets of bloom in spring.

Replies to queries.—*Owing to the extreme pressure on our space, and the large number of questions received, we are compelled to leave over replies to late letters in all departments until next week.*

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1782—**Drying Pampas Grass.**—Kindly tell me when to cut and how to dry Pampas Grass to make it white?—B. A. C.

1783—**Alpine plants in pots.**—Would you kindly inform me through your paper the names of ten of the best alpines to grow in 6-inch pots for show in beginning in September each year? Also, any hints on soil or cultivation of the same?—Constant Reader.

1784—**Extracting dye from Woad-plant.**—Would you be obliging enough (or any of your readers) to indicate to me a simple mode of extracting the (blue) dye from the Woad-plant, of which I bought some plants advertised in Gardening for June last? A few words on this point in Gardening would greatly oblige.—A. C.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1785—**Plantains** *(B'ham).*—Please see reply to "E. F. W."

1786—**Peas failing** *(Enniskillen).*—Your Peas are eaten by birds, and we fear they must be numerous.

1787—**Tulips at Mulligar** *(R. Harding).*—You will find their culture described in Gardening, June 26th, page 245, last.

1788—**Montbretias** *(Westmeath).*—These want a warm, well-drained soil and sunny position. A note on the subject in present issue may help you.

1789—**Exogonium Purga** *(Cartouche).*—Exogonium Purga is a stove climber, and it would be useless to try this Mexican plant out-of-doors in England.

1790—**Book on Vines** *(W. E.).*—Get Barron's "Vine Culture," price 5s. 9d., post free, from the author, Sutton Court-road, Chiswick. It is the best book on the subject.

1791—**Stove** *(P. J.).*—The firm you mention is as good as any, and their stove will be sure to please. You cannot do better than put the whole matter into their hands.

1792—**Lilium Harrisi** *(Reader).*—You should have allowed your Lilies to dry off and have a partial rest ere this. You will not be able to flower them a second time without.

1793—**Crested Anemone foliage** *(J. Graham).*—Very fine indeed. We have seen nothing so vigorous before. The kind is evidently A. coronaria (the Poppy Windflower).

1794—**Moss on lawn** *(Regina).*—Your soil must be very wet to grow the weed so strongly. Drain, then rake off as much as possible, and treat the same as we recommend for Moss in our leading article for the issue of September 25.

1795—**Tobacco-plant** *(A. B.).*—These require a heat of at least 60 degs. to do them well. Please say age of your plant, and give us a little data as to your requirements. We can scarcely go into the whole culture of these.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

1796—**Bulbs from Natal** (*H. C., Ashby*).—Put the bulbs in the conservatory, and afford them as nearly as possible the same treatment as regards heat and water as prevails in their native habitat. You can have no better guide than Nature in this respect.

1797—**Specimen Dahlias** (*Townsend Bros.*).—The Dahlias you send are very nice well-developed blooms. We should not say that they are any great advance on varieties already in commerce, but they are kinds with which growers would have every reason to be satisfied.

1798—**Antirrhinums** (*Mrs. King*) —Not only should they have been kept in the greenhouse, but in a strong and moist heat. A temperature of 55 degs. will suit them through the winter. Do not overwater at this season, and see that what you supply is at least the same temperature as the house.

1799—**Strawberries in pots** (*S. S., Hants*).—The crop to be a paying one should have worked out a little better, as Strawberries are in hand a long time. It is true, of course, they are outside the greater part of the time. Still, we think forced Strawberries hardly pay to grow for less than 4d. per pot.

1800—**Jadoo-fibre** (*Penman*).—This material is of a boggy or peaty nature, and is best mixed with turfy loam or other firm soil to give it consistence. Generally, where it can be obtained, the best of pot material is two-thirds turfy loam, the rest being well-decayed leaf-soil, old hot-bed manure, and sharp sand, well mixed.

1801—**Plantains on lawns** (*E. F. W.*).—Employ an active boy to cut out every Plantain with a sharp knife as low down as possible, and to place a pinch of the sand on top of the severed root. That would kill it. Then, in the spring, give the lawn a dressing of fine soil. Well rake it about, and sow seed of fine lawn Grass, and well roll it in.

1802—**Liquid ammonia** (*E. F.*).—This liquid is employed to syringe plants infested with thrips, and should be used in weak form, not more than half a pint in a gallon of water. Solutions of the mixture require to be employed with exceeding care. A good syringing with clear water should follow soon afterwards to prevent clogging the leaves.

1803—**Laurel-hedges** (*Flactem*).—If carefully transplanted, there is no reason why the six-year-old Laurel-hedge should not live, especially if the operation is carried out tolerably early in October, as the roots will then have time to take hold of the ground before they go to rest for the winter. Of course, younger plants would suffer less from removal.—S. W. F.

1804—**Canna-roots** (*Ireland*).—When Canna-roots are lifted from the soil and the stems have been cut down, they should have the soil well shaken out, be partially dried, then be blocked in shallow boxes thickly, and be covered up with Cocoa-fibre-refuse, ashes, or moderately dry, fine soil, and kept in the greenhouse or in other warm place, but not exposed to drip.

1805—**Ferns and Stephanotis** (*Wilts*).—Ferns growing on freely in heat may be repotted at any time, although the best time for these or for Ferns under cool treatment is in the spring Stephanotis usually is allowed to rest somewhat in the winter, and gets fairly cut back to encourage the making of new growths the following season; therefore the best potting time is in March.

1806—**Palm-seeds** (*Nursery*).—These seeds may be sown thinly in pots or pans filled with peaty soil at almost any time, but always the sooner after received or ripe the better. Of course, they need to have a warm temperature from 70 degs. to 75 degs. at least, and bottom-heat. Place the seeds thinly into the soil regularly over the surface, and just bury them. If the pots or pans can be placed in a glass-covered frame in a warm-house so much the better.

1807—**Strawberry-runners** (*F. W. G.*).—Your Strawberry-plants, put out in the early summer and now making runners, are but following the course of Nature; but, all the same, are not doing that, be it noted, to produce fruit next year. These must be cut away close to the plants at once, and none others will be made this season. The plants will then utilise their foliage and root action to form strong, blooming crowns for next season's fruiting.

1808—**Figs** (*Podgey*).—Presumably your Fig-tree is outdoors on a wall. If so, then the winter will kill the Figlets. Prune the tree by cutting out old and especially bare branches, fitting into the wall with strong young shoots, as these produce next year's fruit. Were your tree in a house where there was strong heat, you might have three crops a year instead of one only, as now. If not possible before, do pruning and nailing as soon as the eaves have fallen.

1809—**Cleaning ground** (*Aldershot*).—As your soil is vacant dig and clean it well at once, using a long fork, and removing and burning all weeds. Then get on to it a good dressing of manure and dig it in deeply. Some time usually elapses ere manure decomposes, and although you cannot sow or plant till the spring there would be no waste. The ground may need forking over lightly before you sow seeds. The ground being so poor should need a good dressing of manure, say a cartload to 6 rods.

1810—**Shifting Myrtle-tree** (*L. H.*).—We would suggest that you rake off some of the surface soil, if possible, and add a mulch of rich compost. If you cannot do this, place a layer of good coal-soot on the surface—say, an inch thick; slightly cover this with fresh loam, and water freely. Your plant is either too dry or starved. Myrtles are almost hardy, and if brought to the cool conservatory for winter and fed freely, will not only bloom well, but are really showy plants at all times.

1811—**Marguerite Carnations** (*Elgin*).—Unless you have at Elgin a very moderate temperature through the winter, it may be doubtful whether your Marguerite Carnations will live out all that season. If the best plants were carefully lifted into pots—not large ones—and placed in a greenhouse, they should with some warmth flower during the winter. If the plants will live out the winter it will be great gain, even if they bloom little, as cut back in the spring they will then bloom profusely all the following summer.

1812—**Gas-lime, etc.** (*Harrow*).—Why use gas-lime on a Strawberry-bed? It is only fit to put on to bare ground, to lie for several weeks, and then be dug in. A bushel per rod is a heavy dressing in such a case. Common lime is best for Strawberries, and be hoed or lightly forked in. For a bed that has fruited a good dressing of half-decayed manure will do more good. Road-scrapings is poor stuff alone, except for clay soil. It is good for pasture. Road-manure is very good, and is worth from 3s. to 4s. per cartload.

1813—**Heating greenhouse with gas-boiler** (*R Weatherill*).—If you ventilate so as to do away with fumes the gas will not harm your plants. Cannot you arrange so that the ventilating pipe will pass through the house? This would give you considerable heat, and if care be taken to keep the atmosphere fairly moist, we think you would gain. The tubing you mention is rather small We cannot guess at the name of plants, but if you send a piece as guide we will name and give a few cultural hints. We are not aware of any so spelt.

1814—**White Swan Poppy** (*Florist*).—This variety is more generally called Snowdrift. It is one of the beautiful Shirley Poppies. Fortunately, you can still sow so as to get it in good form next summer if attended to at once. Sow in boxes or pans of good loam, but not too rich. Prick out early next spring, placing them 15 inches apart. A second plan is to sow in April, but very thinly, and allow the seedlings to flower where sown. It grows a little over 1 foot high, and is one of our very best summer cut-flowers. Autumn-sown plants are best.

1815—**Plants for walls and verandahs** (*W. T. H.*).—The following plants are suitable for growing against walls and training up verandahs: Cratægus Lælandi, Jasminum nudiflorum, J. officinale, Lonicera (Honeysuckles), Roses of sorts, Aristolochia Sipho, Clematis montana, Passiflora cœrulea and P. cœrulea Constance Elliot, Ivies of sorts, Bignonia grandiflora, Wistaria sinensis, Ceanothus azureus grandiflorus, Ampelopsis Veitchi and A. hederacea, Menispermum canadense, Berberidopsis corallina, Bridgesia spicata, and Akebia quinata.

1816—**Logan Berry and May Berry** (*Amateur*).—We know the Logan Berry and have found it much as described in the cutting sent. It is very similar to a red Blackberry, and much sharper in taste than the most acid Raspberry. The May Berry is a yellow American form of the same, but too new for us to give a decided opinion. It grows well, is quite hardy, and will probably become a popular small fruit, especially for dessert where unusual colour is an object. Improve your soil with a little stiff manure, such as pig or cow-dung, and they will grow very well.

1817—**Peach-tree** (*H. W.*).—Peach-trees from seed are often long in getting into bearing, and when they do may be but of poor quality. Nevertheless, as you have a two-year-old seedling that has become strong and needs removal, you may find that carefully lifting it and planting so soon as the leaves turn yellow will help to check coarse growth and turn to fruiting. You must, however, plant it close to a sunny south wall, where you can nail the shoots to it thinly so that the warmth may ripen them. Peaches fruit in this country outdoors only on warm south walls, carefully trained.

1818—**Carnations for cool greenhouse** (*S. B. H., Berfan*).—The Tree or Winter-blooming Carnations would do well in your house. Select such as La Neige, Winter Cheer, Reginald Godfrey, Mary Godfrey, Uriah Pike, Duke of York, Lizzie McGowan, Miss Joliffe, and Mme. Leopold de Rothschild. Those you mention are Border Carnations, and only suitable for summer flowering outside. Give a compost of turfy loam and a very little coarse sand. You can purchase plants now in 4-inch pots. Shift these on at once, giving them a 5½-inch pot. Your soil outside is evidently unsuited to Carnations.

1819—**Propagating India-rubber-plant** (*A Subscriber*).—Please refer to our issue of February 6 for illustrated notes upon propagating the India-rubber-plant. You must keep the foliage wiped over about once a week, and be careful to supply tepid water at the roots now that colder weather is approaching. Your Nerium Oleander must remain in the greenhouse. It is too cold for these outside after September. You might shorten it a little and repot early in the year, using a compost of leaf-soil, peat, and turfy loam in equal proportions. A dash of coarse sand is a help in keeping the compost open.

1820—**Ferns in tank** (*Scheme*) —During summer the Arum is one of the best plants when treated as you describe. We have frequently known it stand quite a severe winter in the Southern counties. Could you not arrange for a constant flow, however small? This would be a better plan, and if you can fill with soft water, we do not see why this cannot be followed. The Water Lilies would do well so, and you might also make use of Villarsia nymphæoides, yellow; Aponogeton distachyon, very sweet scented; Myosotis palustris, Limnocharis Humboldti, and Nymphæa rosea would be sure to suit you.

1821—**Woolly Peaches** (*A. T. B.*).—Wooliness in the flesh of Peaches is not a besetting sin of all varieties, but it is of some. Generally the fruits under glass are less woolly and more juicy and richer flavoured than are outdoor fruits, although good sorts have been wonderfully fine outdoors this season. If you are much troubled in your Peaches with wooliness, give them, just before the leaf-buds push, and again when the fruits are half grown, a very moderate dressing—say 1 oz per square yard—of sulphate of potash. Some fresh lime and wood-ashes, or ordinary potash, lightly forked in over the roots, may do great good.

1822—**Diseased Tomato** (*Langford*).—Your Tomatoes are suffering from an attack of the Potato fungus (Phylophthora infestans). That, finding no more green Potato leafage, has now settled on the Tomato plants. The only possible check in such case as yours, where the Tomatoes are outdoors, would be found in a dressing of the Bordeaux-mixture, sulphate of copper, and lime; but as it is poisonous it could not be safely applied to Tomatoes. When plants are under glass, more warmth, a dry air, and less water, with picking off the diseased leaves and fruits, will often check it. Your plants have been much too grossly fed.

1823—**Apple Roundway Magnum Bonum** (*C. B.*).—This is the best flavoured amongst large Apples; indeed, its flavour is excellent. It is a robust-growing variety; the fruits large, somewhat conical, and not particularly handsome. As a cropper it is not of the best. We should prefer it on the English Paradise-stock to somewhat dwarf its growth. There is no reason why it should not do well in Staffordshire. Lord Nelson is a fair Apple, but not so good as Lord Grosvenor or Lord Derby; the first rather early, the latter later, and a good keeper. Lord Nelson is very little grown now, being superseded by better sorts.

1824—**Lemon-tree not fruiting** (*E. Allman*).—Seedling Lemons do not fruit well in all cases. Yours will evidently need grafting with some fruit-bearing wood. As a rule, the seedlings are far more fruitful than the Orange, and growers are content to raise plants and not trouble about grafting. This is the cause of so much variation in the quality of imported fruit. As your plant has grown so well for twenty to thirty years, we do not see how we can further advise you. Choisya ternata is increased from cuttings of ripened wood inserted under a hand-glass in a cool greenhouse. Do this early in the summer, and use a very sandy compost.

1825—**Caulking hot-water pipes** (*M.N.C.S.*).—Mix some white-lead and red-lead together. Ram in a ring of tow first, taking case to do this so that the spigot end of the pipe is evenly inserted into the boss end. Now mix the red-lead and tow as you proceed, thoroughly ramming this in with an iron chisel. But you would do far better to get a plumber to do the job, as a novice is almost certain to muddle it. We have a liking for the india-rubber ring, now generally used, excepting close to the fire. They are cheaper, more durable, and much quicker to fix. Any ironmonger can supply, or you can get them direct from advertisers in our pages.

1826—**Plants for London greenhouse** (*A. B. P.*).—There is nothing you could have better during winter and very early spring than a selection of Hyacinths and Tulips. Pot at once; any good loam will do. Stand in a dark place until growth has commenced, then bring forward to more light and heat. Ericas, Genista fragrans, and Zonal Pelargoniums are suitable for winter, with Cinerarias, Cyclamen, and Azaleas for spring. In summer you could have Fancy Pelargoniums, Fuchsias, Marguerites, and heaps of other subjects, while Ferns, especially the Pteris tremula, Pteris serrulata and its varieties, would be useful throughout the year.

1827—**Morello Cherries and Currants** (*M. S.*).—Morello Cherries bear fruit from the shoots of the previous season; therefore in pruning these cut out what old wood you can, but be very careful to save plenty of strong young shoots to tie into the wires. It would have been better to have done that earlier. However, do it at once. The Currants fruit on spurs borne on old wood; therefore cut hard back all summer shoots to two leaf-buds, except leaders, if you wish the branches to grow taller. You see, here is a case in which the pruning treatment is exactly different. Black Currants, like Morello Cherries, bear on the young wood, and must not be pruned.

1828—**Making Asparagus-bed** (*North Devon*).—The best time to make a bed for Asparagus is during the winter, and plant or sow early in April. We advise purchasing two-year-old plants—say Connover's Colossal or Battersea Giant—planting them in rows 2 feet to 2½ feet apart, with 2 feet between plants in the rows. If you sow seed, sow thinly and, when a few inches high, thin freely. The bed should be dug 2 feet deep, well enriched with manures, not only on the surface, but all over the soil. On your land do not make a raised bed, but a flat one, as by so doing, beds will not dry so quickly. If you write to us we will advise how to plant at season named.

1829—**Clay soil** (*E. Y. M.*).—Stiff soils are invariably benefited by the addition of grit. We have used road-scrapings, and the best manure usually is just partially decayed stable-manure, as the fibre in it helps to keep the stiff soils porous. Get the Couch and other weeds forked out at once, and burn them on the ground, strewing the ashes about on the surface. Then add the dressing of road-scrapings and manure, and have it dug in deeply and very rough. If we get frost, that should render the soil loose, and be ready to fork over, and sow or plant in March. Give the ground for dressing two good barrow-loads per rod. All plants removed should be laid in elsewhere for the winter.

1830—**Mealy-bug on Vines** (*E. F. D.*).—It is unfortunate that your Chrysanthemums are housed, and, therefore, you cannot deal with mealy-bug until the plants have flowered and are then removed. Long before that the leaves of the Vines and Peaches will have fallen, and should be collected and burnt. When the house is free make up a mixture of 1 lb. caustic soda and 1 lb. of commercial potash, dissolved in 10 gallons of boiling water, then syringe Vines and Peaches well whilst it is hot. Give a second dose a week later, and still further a few days later. Scrub the hard stems and branches with strong soft-soapy water, and afterwards give a good washing with clear water.

1831—**Dwarf French Beans** (*E. F.*).—You should at once sow seeds of Osborne's Forcing, Syon House, or Earliest of All. Have a quantity of 6-inch pots two-thirds filled with soil of good turfy quality. Sow in each about eight seeds, well buried. Water, then stand on the floor of a warm greenhouse till you see growth being made; that will be in a few days. Then place the pots near the glass and give plenty of light. When the plants are strong a little more soil may be added. Keep up a temperature of from 65 degs. at night to 70 degs in the day. If all goes well you should have Beans to gather at Christmas, but, of course, they will be small. The plant must have ample light and room.

1832—**Planting garden** (*P. J.*) —For a bold, striking effect you cannot do better than plant in masses—*i.e.*, a colony of each by itself. For instance, groups of Roses (single and double), Phloxes, Pentstemons, Perennial Asters (Michaelmas Daisies), Helianthus, Pinks, Carnations, and Pyrethrums, etc. Delphiniums and the taller-growing Sunflowers should be planted in the background. In the front, masses of annuals, such as Tagetes Legion of Honour, Asters, Calliopsis nigra nana (very dwarf, free-growing, and exceptionally free-flowering), Mignonette, Hawkweed, Love-lies-bleeding, Candytuft, Eschscholtzias, Dianthus, and Salpiglossis would produce very fine effects.

1833—**Dividing Blue Flags** (*Albion*).—The best time for dividing the Flag Irises is immediately after flowering; but they may be moved now without giving them a serious check. Directly after flowering the plants begin to prepare for the succeeding flower period, and lifting during this preparation naturally disturbs its continuity. Still, the German Flags are so hardy that division and transplantation, at whatever time it may be carried out

rarely produce a more disastrous effect than a temporary loss of bloom. At this time of the year the majority of clumps show a withered appearance; but this is not a sign of bad health, and they will probably bloom as well as usual next year.—S. W. F.

1834—**Begonia seed-saving in the open beds** (*A. J. Foddy*).—It is useless to pick the seed-pods until they are quite brown or seared, and if those you have saved are in such condition, we have every reason to believe the seed would be fertile. You may or you may not get very fine flowers from the resulting seedlings, as to ensure the best results it is very necessary to artificially fertilise the flowers, using the best forms and colours of the respective types of the flower. Be quite sure that the seed is thoroughly ripened, and should there be any doubt about this, place the seed-pods in tissue-paper bags and hang them in a dry place for some little time, when the minute seeds should fall from the seed-pods.

1835—**Diseased Tomatoes** (*G. S., Hants*).—The disease in Tomatoes, commonly called black stripe, is of a fungoid character and is very destructive, and so far as we know there is no real cure for it beyond stamping it out by pulling up or cutting down the plant. We have not seen it this year, but in other seasons we have met with isolated cases. When cut down it often happens that a perfectly healthy shoot will start away from the bottom, but virtually when the black-stripe seizes upon a plant its work is done, and it is better to pull it up, for the disease is too rapid in its action to be treated successfully with any remedy. You plant too thickly; 150 plants would be quite enough for a house of the size given.

1836—**Mossy lawn** (*J. B.*).—A liberal dressing of soot is helpful to destroy Moss on lawns. Where any dressing has been applied, and Moss is brown, a fine tooth rake should be used to scratch it off, and so get rid of it. But it may be wisest in the end to cut out and remove the worst patches and replace with good turf, as the previous condition of the soil no doubt soured the soil, and it will continue to produce Moss unless removed. If it be determined to remove the Mossy patches, then fork them up next spring, paring off the Moss first; then tread them down, and add a dressing of fresh, fine soil, well levelled and raked; then sow the Grass-seed, rake again, and give a good rolling. That may renovate your lawn cheaply.

1837—**Marguerites** (*J. B.*).—You will want considerable room for the proper development of 2,000 Marguerites. Do you mean to plant them out next summer or grow the whole in pots? If the former, pot on into 60's early next February, and plant out 3 feet apart at the end of next May. If intended for pots entirely, shift on into a 6-inch size as soon as the smaller pot is quite full of roots. You must use a rich loam and feed well with liquid-manure. It is merely a matter of food supply as to whether you get them 1 foot or 5 feet high and as far through. Keep them cool, but free from frost. Fuchsias can be rooted now or in spring, and grown on in a warm greenhouse with a moist atmosphere. You do not say when you wish for either subject to be in flower.

1838—**Planting the Netted Iris** (*Cartouche*).—If the Grass on the bank is not too vigorous, Iris reticulata would doubtless do well for a season. It needs no protection, and, when it takes to the soil, often flourishes for some years. It is, however, almost impossible to naturalise it in some gardens, even where the greatest care is taken to meet its wants, the bulbs dying after its first flowering. "Cartouche" should plant now, and may be successful in establishing this beautiful Iris. At all events, bloom may be looked for in the coming spring should the weather not prove exceptionally severe. This Iris is found growing by the stream-sides in Algeria, in which country the lovely winter-blooming Iris stylosa grows on the hills. The latter is less difficult of management than the former in our English gardens.

1839—**Ampelopsis** (*E. L.*).—These climbers are easily propagated by means of layers—that is, young shoots brought down to the ground, then layered by cutting a small slit in the under side of the shoot, and burying in sandy soil as is done for Carnations. Do this when good shoots have been made in the summer. Propagation by cuttings may be done by setting green tips at once in pots filled with sandy soil, placing them in bottom-heat, and covering all with bell-glasses; or in making cuttings from hard wood after the leaves have fallen March is the best time to do this, treating them as before mentioned; or in putting in cuttings 6 inches long of fairly firm summer shoots under handlights. That should be done early in July. Shade the lights during the day, and keep fairly moist.

1840—**Prunus Pissardi** (*T. Edwards*).—The difference between the Prunus Pissardi and the Copper Beech is very great. The former is much darker in colour, its growth does not droop, the leaves are smaller and smooth upon both sides, and wood is very fine and brittle. The Copper Beech is merely a purple and copper-coloured form of our native Beech. One is a tree, the other one of our most showy deciduous shrubs. We would not shift the evergreens you name until next February by choice, but they may be moved from October until March or April, provided the weather is open. The leaf you send is a Weigela. You can propagate by ripened cuttings of this season's growth inserted during September upon a sheltered and sandy border, or by small pieces of the same under a cloche in a cool-frame.

1841—**Nectarines** (*M. E. W.*).—Seeing that your Nectarine-tree has beneath it a floor of broken bricks as a paving, and the soil about it is raised considerably above the level of the surrounding soil, it is very natural to infer that the roots suffer from drought, and that the fruits fall before ripening. We advise removing the soil from the roots carefully so soon as the leaves fall, gathering up the roots and wrapping a mat or sack round them, then removing all the bottom soil and paving. Well break up the bottom, then replace the soil, with some fresh turfy loam added, also adding some crushed bones and wood-ashes moderately, and replanting the tree less high than before. Tread the soil fairly firm, and later add a mulch of long manure over the roots. Of course, the tree must be unnailed before the work is begun.

1842—**Apple-trees** (*Tom Morris*).—Your Apple-trees make such luxuriant growth that their bloom-buds are deficient in pollen, hence sterility. You should at once dig a trench 20 inches deep about each tree, preserving carefully all the fibrous roots, and remove the top soil so that the trees may be easily lifted. Cut off neatly all roots that strike downwards, then replant in fresh soil, not deeply. The upper roots should be not more than 6 inches deep. You can add a mulch of long manure over the roots of each after the soil has well settled down. In the late winter the shoots should be pruned back two-thirds. This should soon throw the trees into bearing. Use very little manure in replanting; that does harm if too liberal. Apples are usually budded on to proper stocks in the nurseries. That is done in the month of August generally.

1843—**Tacsonias not blooming** (*F. R. F.*).—It is difficult, without fuller information, to assign the reason for the flowerlessness of "F. R. F.'s" Tacsonias. Possibly the fernery is too cold or too dark to encourage bloom. The plants may be confined in pots too small for their roots, or planted out in a mass of soil that has become sour. These and many other conditions would affect their flowering. Being natives of South America, they require heat to show their true qualities, and flower more freely in a buoyant atmosphere than in one holding an excess of moisture. The growths should now be allowed to extend at will, being trained as seems desirable, and the stopping of the shoots discontinued. This may induce the formation of flower buds. Should this fail to produce the desired effect, the roots should be examined and either confined in smaller space or given more run, as their appearance suggests.

1844—**Climber for wooden fence** (*Stofford*).—Ivy would, of course, cover the sleeper wall in time, but it is slow in making growth until well-established. The large-leaved Ivy, the Golden Ivy, and the Arrow-leaved Ivy (Hedera sagittæfolia) are all handsome forms, and can be obtained at any good nursery. Spring is a better season to plant Ivy than autumn. If a flowering creeper is preferred, the blue Passion-flower (Passiflora cœrulea) will be found the most suitable. This is a rapid grower, and will soon cover the whole surface. During the summer it will be spangled with its handsome blossoms, and in the winter, if the season has been favourable, its orange fruit will light up the dark foliage. It is practically evergreen, its shabbiest time being in the spring, when the old leaves fall off and fresh ones take their place. The ground should certainly be enriched with manure whatever creepers are planted, as this will tend to give them a good start, which is half the battle with these subjects.

1845—**Fruit-trees for walls** (*Frenshaw*).—At 15 feet apart a wall 75 feet long will give room for five trees. Supposing Pears were planted chiefly on the east aspect, and Apples on the west, with a Plum or two, Peaches would do on the south, as they bear pruning better than Apricots or Plums. We find them do better on low walls than most other stone fruit; but there may be an early Cherry on the south wall, if preferred, and a Morello Cherry on the north. The arrangement would work out as follows:—East wall: Pears. Clapps' Favourite, Marie Louise, Doyenné du Comice, and Glou Morceau, and one Moor Park Apricot. West wall: Apples. Duchess of Oldenburg, Cox's Orange Pippin, Prince Albert, two Plums, Oullin's Golden Gage and Golden Drop, or Kirke's Blue. South wall: One Peach, Royal George or Dymond; one Cherry May Duke. North wall: Two Morello Cherries, or one Cherry and one Victoria Plum. A brown Turkey Fig may be planted in the warm south angle.

1846—**Grape-Vine, etc** (*R. C.*).—It is hardly probable that a Vine in a bucket will produce fruit. If you do not plant it out and train the rod up under the glass roof of your greenhouse, then you must remove one-third of the soil in your bucket and add fresh turfy loam from a pasture, in which is mixed some wood-ashes and crushed bones. Press it well down. As the Vine pushes growth in the early spring give mild liquid-manure and an occasional sprinkle of some good Vine-manure to wash in. The rod should be cut back in the winter to one-half its present length. Possibly your Tomato-fruits do not get light equally. Many cast out the fruits that do not properly colour, and expose them to full light on a top shelf in the greenhouse; that should colour them. If seedling Anemones are small and do not keep green all winter, as they may if kept in a greenhouse or frame, let the little tubers ripen, but leave them in the box till they break up again in the spring. Then lift them and plant out in good soil.

1847—**Gum Cistus in winter.**—Please say if it is necessary to protect Gum Cistus-plants during winter, and what kind of protection is best?—Bridge End.

*** *If a dry soil and not too exposed the plants will live unharmed through the winter. They stand an average winter. If small, however, you might protect them with Bracken or Furze-shoots when very severe weather is anticipated.*

1848—**Cannas.**—I have taken in Gardening for a long time now, and have derived much useful information from it. Could you kindly let me know whether Cannas are annuals or perennials, and what treatment they will require after flowering?—E. Trohear.

*** *They are herbaceous perennials, but may also be treated as annuals if the seed be sown early and in a brisk heat. Allow them to die down gradually, store in a cool greenhouse, and repot again early in the following February or March.*

1849—**Dressing for lawns.**—What is the best dressing for tennis-lawns (which are bare through weeds being taken out) on a clayey soil?—Dahlia.

*** *Please refer to our notes upon lawns in September 18 last.*

1850—**Raising seed of Pyrethrums, etc.**—Can Pyrethrum, Lobelia and other bedding-plants be raised with heat in time to plant out in May?—Dahlia.

*** *Yes; a temperature of 55 degs. from February will be ample.*

1851—**Plumbago not flowering.**—Could you kindly tell me what I should do to my Plumbago to make it flower? I have had it now in a lean-to greenhouse growing on the wall for three years, and it never has flowered, though it looks in perfect health. The average temperature of the greenhouse is between 40 degs. and 50 degs.—J. F. G. W.

*** *Keep the plant a little drier during the next few months, and it will probably flower early next spring, when all plant life is naturally on the move. Surely your house has been warmer than 40 degs. to 50 degs.*

1852—**Repotting Azaleas, etc**—Would it do to repot Azaleas, Camellias, etc., now? They are full of buds, but pot-bound. Is it imperative to soak new pots? I have seen it somewhere.—H. W.

*** *Do not repot these until they have flowered; to do so now would probably mean the dropping of many flower-buds. New pots are only soaked when very dry; they would otherwise absorb too much moisture from the soil.*

1853—**Specimen Ferns**—Would you oblige me by giving the names of three exotic and three British Ferns to make good specimens for exhibition?—G. W. S.

*** *Please give us a little idea as to your accommodation, and what size you would like the specimens to develop into? Their sizes vary so much that we fear to reply without some further information.*

1854—**Castor-oil plant.**—I should like to know how to treat a Castor-oil-plant? What soil should it be potted in, and how often should it be watered, and if it should be kept indoors?—A. B

*** *The Castor-oil-plant will not do outside except during the summer months. It likes a rich compost of turfy loam; but how often to pot and water is so entirely dependent upon age and other conditions that we cannot give you any definite answer. We also wonder if you really mean the Castor-oil (Ricinus) or an Aralia?*

1855—**Trailing evergreen plants instead of Ivy.**—Can you tell me of any trailing evergreen plants to replace Ivy-leaf "Geraniums" in window-boxes?—N.

*** *You will find the hardy Vincas, a few Ivies, and the evergreen Honeysuckles about the best for winter trailers. Use these, with a few small Conifers, such as Retinosporas, Cupressus, and Euonymus.*

1856—**Hydrangeas of bluish colour.**—In this locality there are a great many plants of Hydrangea growing and flowering most profusely, some of them light pink flowers, but most of them of a beautiful deep blue. People say that this blue is owing to iron being in some parts of the ground and not in other parts. Is it so? If so, is there any solution with which to water the plants with so as to get this blue colour on pot plants? Can you recommend any book (without being expensive) on the formation of colour in leaf and flower?—Meirion.

*** *We know no book on the subject. It is not quite certain what is the cause of the blue colour in Hydrangeas. Plants almost side by side may vary from deep blue to the pale flesh-pink so common. Generally speaking, it is a stiff soil, in which iron is present, where the best-coloured specimens are found. A little alum dissolved in water has had the same effect; but, as a matter of fact, the same plants may produce red, pink, or blue flowers at varying seasons, and this without any apparent alteration and soil.*

1857—**Planting Apple-pips.**—I should be much obliged if you would tell me in Gardening what is the best time to plant Apple-pips and how they should be treated? Should the pips be dried in the sun first, and how long would they take to grow into fruiting trees? I have some old trees bearing excellent Apples which I cannot now replace, as these particular Apples seem out of fashion; I therefore thought of trying to grow from seed.—Firefly.

*** *It is quite useless your thinking of growing these from seed or pips. They would in all probability be of very inferior quality. You can easily increase the variety by grafting in spring, and would soon have fruiting trees. You might also get some nurseryman to graft a few for you upon his young stocks of Crab or Paradise. See our issue of April 17 for full and illustrated instructions.*

1858—**Eucalyptus citriodora.**—I have some seeds of Eucalyptus citriodora. Will you kindly tell me through Gardening if it will do to plant them now? Also what mould they require, and the treatment?—Wilts.

*** *You would do better to wait until early in the year before sowing the Eucalyptus. The variety citriodora is one of our best cool greenhouse plants. Sow in pans of sandy peat and loam, scarcely cover the seed, then place a sheet of glass over the pan and keep it dark and warm until the seed germinates. Pot off as soon as they can be handled, giving a little well-decayed manure to the previous compost. An ordinary greenhouse or conservatory will grow them very well after this, but they need a heat of 65 degs. to spring the seed freely.*

1859—**Forcing Daffodils.**—Kindly tell me whether I can force Cynosure Daffodils?—C. Irwin.

*** *Yes; this is one of the very best for forcing.*

1860—**Double white Daffodils.**—Please tell me the names of a few good double white Daffodils, and what is the meaning of virgin loam?—Archie.

*** *Narcissus poeticus plenus is by far the best double white, and is almost as pure as a good Gardenia. Virgin loam means that fresh from pasture. The term is not often used, and is very misleading, as, strictly speaking, a "virgin" loam should be one that has never borne a crop.*

1861—**Plants for Fern-house.**—Please let me know what plants I can grow in my Fern-house? It is 18 feet by 10 feet, span-roof, and coloured inside with summer-cloud mixture. Can I grow Cucumbers or Melons there? I can keep up heat to 70 degs. to 80 degs.—Fern House.

*** *Why not stick to Ferns? None could be more suitable or lastingly beautiful. You can grow Cucumber and Melon-plants during spring and summer; but we would hesitate a long while before discarding a good selection of Ferns.*

1862—**Mice and Crocus-bulbs.**—Is there any way to preserve Crocus and other small bulbs from being eaten by rats and mice? Of course, I trap and poison, but some always remain to eat the bulbs every year.—Holly Twig.

*** *The only way is to catch the pests with traps. Perhaps some of our readers can help our correspondent?*

1863—**Growing Daffodils from seed.**—Please can you tell me how I can grow Daffodils from seed, as I have neither a greenhouse nor frame? I have a window facing south, which gets all the sun during the day. And could I sow it in the early spring with any chance of success?—Archie Ley.

*** *With your limited conveniences we fear you would not do much in raising seedling Daffodils. You might make up a bed of firm loam, and try upon a partly shaded border. They need pans and a cold-frame to do them properly*

1864—**Phloxes.**—I was much interested in the article on Phloxes in a recent number of GARDENING, as I had been wishing to get up a stock of them. I have tried to obtain the kinds named from three leading nurserymen in England, but without success. Could you kindly tell me where I can get those particular varieties? Also, would you give me the names of three or four bright, clear pink, dwarf kinds that would look well in a group together in a south border and flower from about the 15th of July? What is the best time for planting Phloxes—now, or in the spring?—ABBEY.

*** *Try such growers as Mr. Forbes, Hawick, N.B., and Messrs Paul and Son, Cheshunt, Hants. Pink-coloured Phloxes: Beatrice, David Syme, Beranger, Eugene Schotte, Belvedere, and Torpilleur. Plant now or in early spring when growth is commencing.*

1865—**Flowers and fruit in South of Ireland.**—Kindly say if fruit-trees and flowers from Jersey would flourish in the South of Ireland? It is rather cold and damp. Also, perhaps you would recommend a good nurseryman?—M MACNAMARA.

*** *We should say that they would do as well, and there are several good Jersey nurserymen that would help you. See our advertising columns.*

1866—**Mignonette in house for winter.**—Can anyone tell me how to grow this successfully in pots for the winter?—LITTLE TOAD.

*** *See our issue for August 21, page 361.*

1867—**Scarlet "Geraniums" and other good flowering plants at Christmas.**—I have a small greenhouse, and can also stand plants in many sunny windows. I have a tortoise stove in greenhouse. I am most anxious to have flowers at Christmas for church use, either cut or in plants, and should prefer scarlet and white. What plants would answer my purpose, and how should they be treated?—LITTLE TOAD.

*** *If you will refer to our issue for September 4, page 336, you will find an article dealing with your question more fully than we can reply in these columns.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR OF GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*E. S.*—Cestrum aurantiacum. —*Rex*—1, Ficus repens; 2, Golden Moneywort (Lysimachia Nummularia aurea); 3, Campanula fragilis; 6, Ophiopogon Jaburan variegatum. 5 and 6 were unfortunately shrivelled. Kindly send again ——*Mrs. Bailey.*—Unfortunately, there are so many Gladioli that we cannot undertake to name varieties. Far better to send them to someone who grows a collection, such as Mr. Burrell, of Cambridge, or Messrs. Kelway and Son, Langport, Somerset.——*A. C.*—It is impossible to name a plant unless a specimen is sent The description would apply to a dozen things ——*Mrs. C. Boyd.*—1, Myrtle; 2, Phillyrea Vilmoriniana; 3, Box-leaved Myrtle. The plants were much withered.——*Animo.*—1, Sedum stoloniferum; 2, Calliopsis.——*D. E.*—1, Polypodium cambricum; 2, Phlebodium aureum; 3, Please send fertile frond; 4, Adiantum Legrandi; 5, A. cuneatum; 6, Panicum variegatum —— *Young Gardener.*—1, Double Soapwort (Saponaria officinalis fl.-pl.); 2, Sedum spectabile; 3, Œnothera biennis; 4, Acanthus spinosus; 5, Phyllostachys viridiglaucescens; 6, Next week ——*S. E. J.*—Please send in flower.——*Mrs. C.*—Hieracium aurantiacum (Orange-flowered Hawkweed).——*R. S.*—Common Hemp (Cannabis sativa). ——*Harkway.*—1, Variegated Cock's-foot Grass (Dactylis glomerata variegata); 3, Megasea (Saxifraga), but sickly. Send flower to determine kind. The Roses had dropped to pieces. Fruit named in proper place.—— *Westmeath.*—Marvel of Peru (Mirabilis Jalapa).——*J. Graham*—Campanula pyramidalis.——*A Weekly Subscriber.*—It is very difficult indeed to tell the names of Chrysanthemums. It is probably Elaine; 2, Mme. Desgranges.——*W. Martin.*—Toadflax (Linaria vulgaris). The only way is to grub it up. That is the only remedy. Persevere, and you will eradicate it. It is very pretty in the rock-garden.——*J. H. Bland*—1, Veronica Hulkeana; 2, V. pinguifolia; 3, V. pinguifolia var.; 4, V. Kirki; 5, V. lævis; 6, V. Andersoni variegata.——*E. S. Browne.*—Oriental Plane (Platanus orientalis).——*J. E. H.*—1, Euonymus europæus (Spindle-tree); 2, Cerasus sylvestris (Wild Black-fruited Cherry-tree); 3, Ulmus foliis variegatis. ——*Hollycroft*—1, Adiantum hispidulum; 2, Doryopteris palmata; 3, Onychium japonica; 4, Gnidia pinifolia.—— *Oundle.*—Nicandra physaloides.——*G. R. J.*—Antirrhinum Asarina.

Names of fruit.—*S. H. Steele.*—We could not decipher your *nom de plume.* The Apple is Emperor Alexander.——*H. Barrett.*—1, Beurré Bachelier; 2, Williams' Bon Chrétien; 3, Beurre Diel.——*Harkway.*—4, Royal Russet; 5, Gloria Mundi.——*J. Foskett.*—Small Apple Cellini; large one Alfriston.——*C. C. H.*—1, Too unripe to determine; 2, Brown Beurré; 3, Beurré d'Amanlis; 4, Beurré Rance.——*A. G. A. Williams.*—Pear Beurré de Capiaumont.——*G. Walter.*—1, Fearn's Pippin; 2, Mère de Menage; 3, Hanwell Souring; 4, Lane's Prince Albert.——*W. G.*—Braddick's Nonpareil apparently, but we should much like to see a specimen more matured than those sent.——*J. H.*—Grape Lady Downes.——*Mrs. Sangemore.*—Plum Kirke's.——*C. M.*—Apple Beauty of Hants.——*C. Gibbs.*—3, Lady Henniker; 4, Ashmead's Kernel; 5, Alfriston; 8, Court Pendu Plat; 9 and 10, Norfolk Beaufin; 11, Royal Russet. Kindly send ripe specimens of the others.

TO CORRESPONDENTS.

Carnation.—Apply to Mr. Bunyard, The Nurseries, Maidstone, Kent. —— *Hortus.* — "The English Flower Garden," price 15s. 6d., from Murray, Albemarle-street, London, would suit you.

Catalogues received.—*Daffodils, Bulbs, Hardy Plants.*—Messrs. Barr and Sons, King-street, Coventgarden.——*Bulbs.*—Messrs. E. Miller and Co., 267, Fulham-road, S.W.——*Bulbs, Carnations, Roses, and Lilies.*—R. H. Bath, Floral Farms, Wisbech.——*Dutch and Cape Bulbs.*—Messrs. Ant. Roozen and Son, Overveen, near Haarlem, Holland.——*Seed Corn.*—Messrs. E. Webb and Sons, Wordsley, Stourbridge.

LAW.

Removal of Violets.—I have had notice to leave this place. When I came here eighteen months ago, I begged a dozen Violet roots to work up a stock, and I now have twenty dozen planted out in the kitchen garden just ready for putting into frames. Can I take these away or sell them? Also Chrysanthemums?

*** A private occupier can neither remove nor sell any flowers or plants he has planted in his garden. He may, however, remove or sell flowering plants raised to be transplanted, but which have not been set out. If the Violets are not in a suitable place for permanent growth they may be removed. Perennial flowering plants permanently set out cannot be removed, but it is different with seedlings and plants intended for frames and pots. It is most unlikely that your landlord will object to the removal of the Violets.—K. C. T.

Termination of allotment tenancy.—On the 25th of March last I took over an acre of allotment land for a year, and next to this piece were some three acres which were worked by the committee as the land could not be let. By arrangement, the committee worked my acre along with the three acres and sowed the whole with Mangolds and I paid my share, but the Mangolds failed and I had my piece re-ploughed and sown with Swedes, which now promise well. I am now informed that the committee are giving up to the landlord all the acre pieces on the 29th of September, and that we must pay all six months' rent. We have had no written notice of this, and our crops will not be ready for removal on September 29th. Should we pay the six months' rent? If our crops are not then ready shall we be entitled to compensation from the committee or from the allotment fund if we are not allowed time to remove our crops?—A. J. F.

*** You say you "took over" this land for twelve months. Do you mean that you took it of the committee, or that you took it over from the previous tenant by a private arrangement to which the committee were not a party? If you took over the tenancy by private arrangement your rights are the same as those of your predecessor and no greater, although, of course, I know nothing of what they really are. If you took it of the committee for a year, upon a written agreement, and have to give it up before the year ends, you can claim compensation for disturbance from the committee; but if you kept it a year you would have to pay a year's rent. It seems to me that the committee are willing to forego half a year's rent if you will give up the land in September, and seeing that it is the winter half for which the rent will be excused, I do not think the offer an unfair one. In any case you will have to pay half a year's rent, but on quitting you will be able to claim compensation under the Allotments and Cottage Gardens Compensation for Crops Act, as to which see last week's GARDENING, page 430. Your claim under that act must be against the committee, who are the landlords so far as you are concerned. Probably the committee will make an arrangement with the landlord, securing you ample time for the removal of your crops.—K. C. T.

Southern Counties Carnation Society.—This society, which has been inaugurated in the neighbourhood of Southampton, has now fairly started, and has close upon one hundred members. All information as to the society can now be procured on application to the hon. secretary, Mr. William Garton, Jun., of Woolston.

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THE WRITER OF THIS LETTER

is Mr. L. Caselton, 15, King George Street, Greenwich, London, S.E. He says:

"I have been for years a martyr to a very bad form of headache, which attacked me nearly every day, sometimes quite prostrating me. I was advised to give up drinking tea entirely, and take Cocoa as a beverage. I decided to try Dr. Tibbles' Vi-Cocoa, which I commenced taking some two months ago, and I am glad to say that since then I have been quite free from my dread enemy, headache. I feel confident that this result was brought by Dr. Tibbles' Vi-Cocoa, for I had tried numerous remedies without any success. I find nothing picks me up so quickly as a cup of Dr. Tibbles' Vi-Cocoa after I have had a stiff day's work in school. I shall be glad to testify personally to anyone what a real boon your excellent food beverage has proved to me."

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LOVELY GREENHOUSE FERNS.—Annual Clearance Sale. Extraordinary Offer. 1d. each. A Box of 12 lovely assorted Greenhouse Ferns, with cultural directions, carriage paid, for 1s. 4d.; 2 lots, 2s. 6d. Don't delay sending till too late and then regret it.—R. C. WRIGHT, Thorpe, Norwich.

A HISPIDULUM.—One of the prettiest Ferns in the world for cool greenhouse. Lovely tinted fronds. 2 given gratis with 2s. 6d. orders.—WRIGHT, as above.

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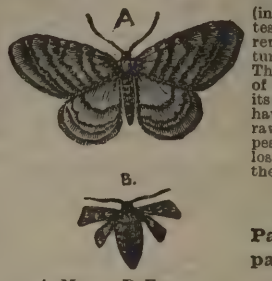

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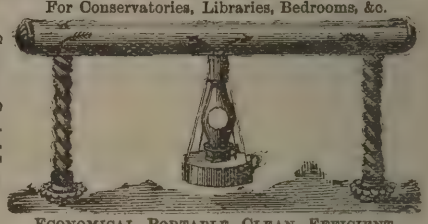

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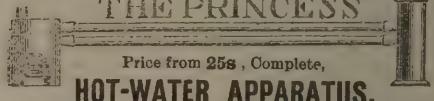

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GARDENING ILLUSTRATED.

No. 970.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* OCTOBER 9, 1897.

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CHRYSANTHEMUMS.

EARLY CHRYSANTHEMUMS.

Early Chrysanthemums are already making a bright display, but many of the summer flower gardens are looking far from pleasing. The various early-flowering Chrysanthemums altogether alter the character of the hardy border, so many new tints of colour and pretty forms of the flower being now within the reach of all. The time is past when the early sorts can be designated as dowdy and washy in colour, many of the newer introductions being very bright. Another excellent feature of the plants is their fine, dwarf, and branching habit of growth, plants often attaining large proportions, and being covered with blossoms of a useful size. Pretty sprays may be cut, each spray carrying quite a large number of small and medium-sized flowers, and of such a character that they may be used for filling small specimen glasses, épergnes, hand-baskets, and almost every conceivable form of glass and earthenware. The Chrysanthemum has many advantages over many other autumn flowers, the flowers in a cut state lasting considerably longer than many other florists' flowers. What is also important is the fact of their being represented in a manner which illustrates their value for almost all forms of the decorations. This the large handsome exhibition blossoms cannot do, as the immense flowers now grown are rarely used for any other purpose than the exhibition table or in large trumpet vases. Readers of Gardening may be assured that the early-flowering Chrysanthemum is one of the simplest and easiest plants to cultivate. It does not need the high culture which those of the later-flowering sorts are accustomed to receive, but, on the other hand, may be perfected with little trouble and expense. Plants which are now in full bloom were propagated early in the spring and grown on under cool and hardy conditions, receiving two shifts, the last one into 5-inch pots. These plants were hardened off in a cold-frame and kept growing on until planted out about the third week in May. Ordinary garden soil they were planted in, not by any means rich in character, and trodden in firmly all round. Each plant had a label placed against it for future reference, and the space between each plant and between the rows was varied. Some of the plants of the more branching form of growth had spaces quite 3 feet between them, while others of a lesser diameter had half-a-foot less, and the same distance between the rows. At the time of writing all the intervening spaces are quite filled with growths, and these are covered with blossoms in all stages of development. Scarcely any disbudding has been practised, and only then in cases where the buds were so thickly produced that it was thought better to reduce the number. During the latter part of the summer stout stakes were used to tie the shoots to, and at different times, according to the character of the growth of individual sorts, these have been attended to. Very soon we may expect frosts cutting down the Dahlias and other equally tender subjects. It is then the value of the early-flowering Chrysanthemum will make itself manifest, as little harm will be felt with a few degrees of frost, and for a month at least there should be a bright and valuable array of colours from these hitherto despised early autumn flowers. Growers willing to take the trouble and incur the expense may run along on wires, arranged on rings, wide breadths of stout tiffany, this assisting very much to minimise the evil of rather severe frosts and heavy rains. The plants will succeed very well without this protection, but, at the same time, better results may be achieved by their use. The tiffany can be drawn across very easily when desired. We are now in the third, or, rather, fourth week in September, and the most notable sorts in flower are, of the

Japanese kinds,

Mme. Eulalie Morel, rich deep cerise, shaded gold in centre, very pretty, height 2½ feet; Mme. Marie Masse, lilac-mauve, broad florets, rather large and very free, fine branching growth, height about 2 feet; M. Dupuis, rich bronzy-yellow, height about 2½ feet; Mons. Gustave Grunerwald, pretty shade of silvery-white and rose, very dwarf, nice individual flowers; Mychett White, this is a lovely pure white sport from M. Gust. Grunerwald, and will be highly valued as a sort for decorations; Edith Wright, beautiful soft pink, fading to white with age, large flower of good substance, height about 3 feet; Harvest Home, this is the brightest flower of the early sorts, and should be in all gardens, colour rich bright crimson and golden-yellow, height slightly under 3 feet; Lady Fitzwygram, purest white, very free flowering, and can also be grown to produce a dozen good blooms, very dwarf and branching; Mme. Carmiaux, pure white, long drooping florets, slender growth, rather dwarf; Vicomtesse d'Avene, rose-lilac, most continuous bloomer, very dwarf; Mme. Casimir Perrier, large, white, tinted pink, free flowering, good habit; Mme. Zephir Lionnet, rust-red colour, curly florets, splendid branching habit, and free flowering, height about 3 feet; and Mme. C. Desgrange (white), and its yellow sports, Mrs. Burrell (primrose), G. Wermig (yellow), and Mrs. Hawkins (deep rich yellow).

Pompons.

These are making a free and attractive display, the best sorts being Mme. Jollivart, white, faintly tinted pink; Blushing Bride, bright rosy-lilac, very pretty; Piercy's Seedling, orange-bronze, free; L'Ami Conderchet, creamy-white, free; Yellow L'Ami Conderchet, syn. Golden Draft, deep, rich golden-yellow, sport from the last-named; Longfellow, large white flower; Little Bob, syn. Scarlet Gem, bright crimson-brown, free and dwarf; Flora, deep golden-yellow, very free. Each of the foregoing is beautifully dwarf; the following sorts are about 3 feet high; Lyon, deep rosy-purple, large and free; and Alice Butcher, a lovely rich reddish-orange sport from the former; Mrs. Cullingford, large, blush-white, and its soft pink sport, Mrs. Davis; and Mme. Gabus, lilac-rose and white. A pretty fimbriated flower is Mme. E. Lefort; colour red and golden-yellow, dwarf. The foregoing sorts should provide a selection for those wanting plants for outdoor.

A Chrysanthemum Grower.

Good Chrysanthemums for outdoor cultivation (*T. C.*).—There are many fine sorts to be had now and at a very low cost. The variety you refer to as blooming in Hyde Park was probably an old Pompon sort named Flora, which is a very fine flowering plant, and has flowers of a rich golden-yellow. Mme. C. Desgranges is also an old sort, and thrives better outdoors than it does when grown in pots. We have bushes of this white sort 2 feet or 3 feet through and carrying quite a hundred blossoms. As you ask for the names of six sorts for outdoor culture, however, we append those which we consider the best of the Japanese kinds, by far the most popular type of flower, and embracing a nice variety of colour. Harvest Home is a pretty crimson and golden-yellow flower, of dainty form, and rarely exceeds 3 feet in height. Ivy Stark is rather new, or, at any rate, very little known; the blossoms are rich orange-yellow in colour, with narrow florets, slightly twisted, and each plant carries a large number of flowers on its free-branching habit of growth, which is slightly under 3 feet in height. Lady Fitzwygram, as a white, would suit your purpose better than the white variety you name; this is wonderfully free and strong-growing, and is quite an ideal border plant; height about 2 feet. Mme. Marie Masse is another excellent flower, of light lilac-mauve, very free and dwarf. The foregoing flower in September. The remaining two are seen at their best during October: Mme. Foucher de Cariel, orange, very free and branching, dwarf; and Roi des Précocés, rich, deep crimson, very free and pretty. If you extended your selection to a dozen sorts, then a far more interesting lot could be recommended.

Chrysanthemums—cause of some shoots growing faster than others (*Venus*).—Plants allowed to grow naturally—*i. e.*, without stopping or pinching out the growths in any way—invariably grow of an even length and with equal vigour. On the other hand, plants which have been pinched or manipulated in any such way break out into growth immediately below that part of the shoot which has been treated. It is with such resulting growths that shoots of the character you define are often developed. Sometimes one or two shoots grow right away with wonderful vigour, while each of the others remaining make very feeble progress, and rarely develop high-class flowers. If we could see your plants we could tell you immediately, but from the description you give we should think the cause of this failure to be as we have described. When plants are stopped or pinched it is a good plan to keep them rather dry at the roots for a few days afterwards, as this no doubt assists them to break away into fresh and sturdy shoots, such as rarely follow when plants are kept rather moist at that time.

Chrysanthemum Harvest Home.—The useful character of these flowers has at length become appreciated, and now this variety is largely grown for market work as well as

decorative uses in private gardens. It is a variety of easy culture, and may be grown outdoors in the hardy flower garden without any protection whatever. The cramped position, as experienced when grown in pots, is not so much appreciated by the plant, and the only place to see it in perfection is in clumps of two or three plants in the garden. Small pieces propagated late in the spring will develop into quite respectable dimensions by this time of the year, and the growths, which should not be disbudded, will perfect flowers of a convenient size in sprays for vases and similar receptacles. The colour is bright crimson and golden-yellow, and the flowers are of a Japanese kind.

Chrysanthemum Mychett White.—Those readers of Gardening who know the beauty of the flower as well as the style of growth of Mons. Gustave Grunerwald will be able to appreciate the variety under notice when it is known to be a sport from this comparatively recent introduction. In this case the flowers are pure white, and when fully open have very pretty fluted florets of good length. Like the parent plant this sort has a dwarf habit, and as it is of easy culture it should be in the hands of all who are interested in an early display.

Chrysanthemum Milano.—This large Japanese flower was raised by Mr. H. Briscoe-Ironside, and was distributed, for the first time, last season. Already this year some handsome blossoms have been exhibited. It belongs to the Japanese-reflexed section, and has broad petals of good substance and fair length. The colour may be described as rich cherry-carmine—quite a distinct shade. Although seen thus early in the season, the colour has been rich and clear; but it is safe to say that blooms shown a month hence will be far richer and brighter. The flowers are of good substance.

Early Chrysanthemum M. Dupuis.—This is a most effective sort in the open border. The colour of the blooms is a lively bronze-yellow. Each flower is about 3 inches across. The habit of the plant is dwarf and branching. This variety is usually at its best before frost comes, therefore is of great value.—H. S.

GARDEN WORK.*

Conservatory.

White flowers, associated with green foliage, are always effective. In winter, of course, we want bright colours as well, but I think there should always be a large proportion of white flowers at all seasons. White Chrysanthemums in groups are very effective in large houses. A mass of Lady Fitzwygram has for some time been charming, surrounded by Pteris tremula Ferns. Later will come Lady Selborne, Florence Percy, Thérèse Rey, and others. The decorator does not want many varieties, but he wants them suitable for grouping. We are growing a lot of late-struck Chrysanthemums this season in 6 inch and 7-inch pots, trained to one stem, and that will carry one fine bloom, with foliage, down to the pot, and the whole plant is then a yard high. These are more useful for decorating rooms, and even the conservatory, than plants in larger pots from 6 feet to 9 feet high. I notice the exhibition plants have run up a good deal this season. Plenty of the plants are over 8 feet high. A pair of steps will be necessary to examine the flowers properly. Among scarlet flowers now the Scarboro' Lily is very showy, and in a shady position the flowers continue opening for some time in succession. There is a new form of Salvia Bruanti which is said to keep its flowers longer. In appearance it is just like the older variety, but if the flowers hang on longer it will be a great advantage, and I think that much may be claimed for it. A group is very bright just now in a conservatory, where I saw it a few days ago. Large bushes of the Old White Camellia are very attractive either in tubs or planted out in the border. There are numbers of fine old plants about the country, but there is little or no inquiry for them now. It is rather singular how fashion changes. Start lots of Tulips, Daffodils, and other bulbs in boxes or pots. If many flowers are wanted for cutting grow in boxes for that purpose, and in pots for the conservatory; though as regards Tulips a stream of flowers may be worked on from boxes into pots all through the season. Daffodils may be used in the same way to fill vases in the hall or drawing-room. Small fires will be required regularly now to keep out damp.

Stove.

Things will be settling down for the winter now, and if the right kinds of plants are grown, and enough of them, there will be plenty of flowers. Poinsettias, Begonias, Euphorbias, Justicias, Eucharis Lilies, and many other winter-flowering subjects should be in evidence if there is room. Rivinia humilis is a pretty berry-bearing plant useful for winter decorations, the berries being in numerous clusters, something like miniature Red Currants. The plants are easily raised from seeds, and if seeds are sown in February nice little plants, well laden with berries, may be had in 5-inch pots by the autumn. Another old-fashioned berry-bearing plant may be had in Ardisia crenulata. This is a white-berried variety, but the scarlet-berried is the most effective. It takes longer to grow a good plant than in the case of the Rivinia, but when established the plants are more lasting. Night temperature 60 degs. to 65 degs. Use the water-pot with care now.

Ferns under Glass and in the House.

The Australian Tree-Ferns are, as a rule, too large for the average garden, though the Dicksonias, if raised from spores or seedling plants purchased, will last a long time before they get too large. They are grand plants for the hall even when young—say three or four years old, which is young for Tree-Ferns. We have several plants of that age in 6-inch pots of a useful decorative size. The Alsophilas and others of the Tree-Ferns may be brought into use in a young state. They must have plenty of water. If permitted to get very dry some of the fronds will die, therefore this should be kept in mind. Doryopteris palmata is not an easy plant to grow. It is grown well at May's, at Edmonton, but it is miffy in many people's hands, and for decorative work it is not now required. I find these miffy things soon get covered with scale, and they all are cleared out to the rubbish heap. By this means we keep our collection clear, and it is far cheaper than spending money on insecticides. A collection of Adiantums is most interesting, but they must have a night temperature of 60 degs. to 65 degs. This class of Ferns used to be grown in lighter compost than is found suitable now. Really good loam forms the staple of the market-growers' Fern-compost. If heavy a little leaf-mould and sand is added.

Chrysanthemums Indoors.

The house should never be closed unless very wet or foggy, and then a small fire should be burning in the boiler, and when the pipes are warm, air should be given to let out damp. Those who grow large numbers of Chrysanthemums have one or more men to do nothing else but look after them, and many expedients are adopted to keep down damp. I have seen heaps of lumps of lime laid about the Chrysanthemum-house to extract the moisture from the atmosphere, and the heaps changed as soon as the lime slakes.

Window Gardening

At the time of writing there has been no frost to injure anything, but those who have delayed housing their tender plants will probably regret it. Bulbs for winter flowering are started in most places Roman Hyacinths and Freesias will soon be ready to move indoors. Successional lots may be potted. Hyacinths may be placed in glasses and kept for a month or so in a cool, dark place. Fill up with water as this evaporates, but do not cover the base of the bulbs with water.

Outdoor Garden.

Early in November is the best season to plant Roses, but the ground should be prepared now. Do not spare manure, but blend it well with the soil. Roses do not require to be planted in a manure-heap, but the manure should be within reach of their roots, so that they can find it in a mellow condition, mixed with the soil. This is a good season to plant hardy climbers out of pots. Very bright are the Virginian Creepers just now. Veitchi is the best for walls, but for wood fences the common variety is charming. I saw a wood fence by the side of a public road the other day completely covered with the crimson foliage of the common Virginian Creeper. It was planted inside, but had climbed over, and hung in festoons of crimson on the other side. Many fences might be cheaply covered in this way with Creepers. Do not delay taking up tender plants, as after frost the shoots of "Geraniums" and other things will die back, and perhaps the plants die altogether. When the beds are cleared plant bulbs, Violas, Daisies, spring-blooming hardy annuals, Wall-flowers, Primroses, and Forget-me-nots. Choice-named Hollyhocks had better be lifted and placed in pots. May be plunged in Cocoa-fibre or ashes in cold-frames, and increased by division or cutting in spring. Dahlias are now blooming better than they have all the season. Some of the new Cactus varieties are very beautiful. Cut down and lift when blackened by frost.

Fruit Garden.

Those commencing the orchard-house culture of fruit-trees in pots may either buy the trees established in pots, which will be rather expensive, or visit a good nursery, and select trees of suitable size in the quarters where growing. If the latter course is adopted see after them at once before the best trees are gone. Two-year-old trees are the best for potting, and even good maidens, if grown in soil which produce fibrous roots, will be better than older trees with long fang-like roots, which would have to be cut hard back to get them into moderate-sized pots. If I were buying trees for potting, I should not select anything that could not with very moderate pruning be got into a 10-inch pot, but 8-inch pots are a good size to start with, and shift into 10-inch when the plants require more space. All kinds of Peaches and Nectarines may be grown in pots, and all the best dessert Plums and Cherries. Apricots, if grown at all, should have a house to themselves, as they want different treatment—in fact, I have never seen a good lot of potted Apricots. Use the best loam, mixed with a little bone-meal and some old plaster. Liquid-manure and top-dressing will do what is required when the trees begin to bear. Do not expect fruit the first year if trees from the open ground are potted up. Autumn Pears should be gathered now, if still hanging, but the winter Pears in most places should hang longer. Prepare ground for bush fruits and Raspberries by trenching.

Vegetable Garden.

Beet and Carrots should be taken up and stored before sharp frost comes, though a little frost will do no harm. Draw a little more earth up to Leeks, and a little soil may be ridged up over Celeriac or Turnip-rooted Celery. Make as much manure as possible out of the garden rubbish. When properly managed this makes an excellent compost. Anything which does not readily decay can be smother burned. Start the fire with old Raspberry-canes and old Pea sticks which are not sound enough to keep for another year. Get a good body of fire, and then let it smoulder, adding fresh stuff from time to time, finishing off with the clearings of ditches, or even clay—anything, in fact, to add to the bulk. Autumn Cauliflowers are very good, but the weather must be watched and the leaves tied over them. It is a good plan to lift some of the later plants just beginning to form hearts, and plant in a deep pit. Late Broccoli should be laid down with heads to the north some time this month. This will check growth and harden the plants, and the frost will not injure them. Vacant ground should be trenched and the surface thrown up rough. Deepen the soil by every possible means, and then, whether the season be wet or dry, there will be good crops. Transplant Tripoli Onions; the Golden Rocca is a good kind. The ground should be well prepared, but made firm before planting. E. Hobday.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 4th.—Gathered Pears and Apples as they part easily from the stalk. Care is taken not to bruise the fruit. All fruits damaged by birds or otherwise are kept for present use and not stored with others. Commenced alterations, which involve the removal of turf and transplanting of evergreen and other shrubs. Nothing will be planted without first trenching and preparing the ground. The evils of planting in hard, unstirred ground are patent to those who observe and think.

October 5th.—Cleared several flower-beds for early Tulips and other bulbs. Those for whom we cater like masses of one colour—white, scarlet, etc.—not mixtures. Late mixed Tulips are very cheap, and these are used freely in the open places in the shrubbery, but need not be planted just yet. Brussels Sprouts of the early planted section are taking the place of the late Peas, of which a few still remain. Omega is doing well with us as a late Pea this season. It is a dwarf Ne Plus Ultra and was planted the third week in June.

October 6th.—Took the covering off the early-made Mushroom-beds in house, and gave a sprinkling of warm water as the tiny buttons are breaking through. Beds were made last week in August. Other beds will be made in succession, and spaces will be left for Rhubarb and Seakale later on. Filled a frame with Calceolaria cuttings. Lifted Dahlias and placed in open shed to dry previous to showing. Potted a lot of evergreen shrubs for plunging about beds and borders. They are also useful for back-grounds and furnishing.

October 7th.—Finished housing the late Chrysanthemums. They will be safer indoors now, and as no fire-heat will be used yet and all the ventilators opened when the weather is favourable, they will not come so fast. We want the flowers for December and later. They are mostly whites and yellows. Liquid-manure will be given and the buds thinned. Early Gladioli have been lifted and placed in a shed to complete ripening. Potted up Hollyhock cuttings struck in frame.

October 8th.—We are cutting plenty of Cucumbers from the early house now, so the frame plants have been pulled up and the frames filled with prepared clumps of Marie Louise Violet. Hard-wooded plants are kept in cool-house with free ventilation at night and watering is done in the morning, and every pot is tapped with the knuckles to ascertain its condition first. Liquid-manure is given freely now to old plants of Eucharis amazonica to induce the flower-spikes to come strongly. Shifted on the latest struck Poinsettias.

October 9th.—Cleared the last of the Tomatoes from the houses, the fruit being all gathered and laid on mats in the early vinery to ripen. Some of our best crops of Tomatoes this season have been grown in Orange-boxes along the sides of span-roofed houses. The plants treated this way crop much better than when planted in rows across the borders, though, of course, in large houses the row system must be adopted. Moved the last of the Cyclamens, Cinerarias, and Primulas from cold-frames to light house, where fire can be used when necessary.

WASPS.

The one effectual way to deal with wasps seen in the spring, at and after Easter, is to destroy them. These are the fertile queens, which alone live through the winter; and each of them produces a separate colony, unless killed. In spring they come out of the hiding-places where they hibernate, and sun themselves in windows, greenhouses, on Laurel-leaves, sunny walls, etc., and may be easily killed. In this garden we killed thirty this spring, with the result that only six wasps have been seen by us this autumn, and not a nest has been heard of. But so great was the plague last autumn that in this garden and two fields we burnt sixteen nests, and about forty were burnt around us.

But attention to the queens in spring is all that is needed to extirpate the plague. They are then comparatively inert, are easily knocked down with a handful of soil when perching on a leaf, and then trodden on before they can rise; and if in a glass-house can be poked to death with a pointed stick.

I am told that at a fruit farm near us this spring the manager paid one penny each for queen wasps brought in dead. A. T. B.

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ORCHIDS.

VANDAS.

The tall-growing Vandas of the tricolor and suavis section, when well cultivated, form an attractive feature in the Orchid-house, whether in or out of bloom. Unfortunately, these plants are often seen under cultivation with bare stems a foot or more in length, and with only a few pairs of leaves at the top. In such condition they are unsightly. The principal causes of the plants losing so many of their lower leaves may generally be traced to excessive flowering, extreme warmth from the hot-water pipes, irregular temperatures, insufficient ventilation, and a too dry atmosphere. Some growers have discarded these beautiful plants from their collection on the plea that it is impossible for them to retain their bottom foliage while under artificial cultivation. There are still many persons who hold that opinion, but where such an impression exists I would like to remove it, and endeavour to gain converts to the culture of these Vandas.

A blue-flowered Orchid (Vanda cœrulea).

Their cultivation is by no means difficult. It should be remembered that these plants are natives of the western side of the island of Java, where they grow on trees at an altitude of nearly 2,500 feet above the sea-level; also that the plants will thrive in a much lower temperature in our Orchid-houses than that of their native habitat. All that is necessary is an even, intermediate temperature, a constantly moist atmosphere, shade at all times from strong light or direct sunshine, affording plenty of ventilation where the outside air is moist, but wherever hot, dry winds prevail keep the ventilators partially closed. Such kinds as V. tricolor planilabris, V. suavis Veitchi, V. s. Dalkeith var., and V. s. Patterson's var. are worth adding to any collection. The lovely blue

Vanda cœrulea always holds a prominent position amongst rare and handsome Orchids, but to my regret it is generally found under artificial treatment in a languishing condition. In many cases it is kept far too wet during the winter. When the plants are rooting and making their growth, the amount of water generally afforded is not sufficient for their requirements. In its native habitat on the Khasia Hills at 5,000 feet elevation this Vanda is subjected to an excessive rainfall during its growing period, and at the end of the wet season in October the plants commence to push up their spikes and remain a long time in bloom. V. cœrulea is best grown in baskets or Teak cylinders, with crocks or charcoal, surfaced with a layer of Sphagnum Moss to root in. The plant may be suspended near to the roof ventilators in the intermediate-house, or stood down upon the ordinary stage, choosing a position where a good light is available and plenty of fresh air admitted. Water at the root should be abundantly supplied until the flowers are open, when it should be gradually discontinued. After the spikes are cut remove the plants to a cooler and drier house, where the winter temperature does not fall below 50 degs. While in this cool temperature the plants should be kept fairly dry at the root, but not so dry as to cause the leaves to shrivel. V. cœrulescens is scarcely less worthy of cultivation than the preceding species. The flowers, although very much smaller, are of a delightful blue and violet colour. There are several distinct and lovely varieties of V. cœrulescens, as V. c. Boxalli, V. c. Lowi, and V. c. Captain Vipan's var. This species will grow well when suspended in baskets in a warm, sunny position in the plant stove. Its usual flowering season is June and July. Other varieties which require the same kind of temperature as V. cœrulescens, but prefer rather more shade, are V. Denisoniana, V. lamellata, V. Sanderiana, V. cristata, V. insignis, V. Parishi, V. Roxburghi, V. Bensoni, V. parviflora, and V. concolor.

In affording water to these plants, careful judgment must be exercised as to whether they are growing or at rest. The resting period may easily be determined, as the aërial roots at that time cease to grow and stop at their points. The plants then will not require much water, but so soon as these roots commence to grow and send out young laterals, moisture both at the root and in the atmosphere must be afforded and kept up throughout the growing season. The terete-leaved V. teres and V. Hookeriana require a different kind of treatment to induce them to flower freely and regularly. The long, thin stems should be trained up Teak-rods, to which the roots cling firmly, or where large quantities are grown, a bed of Sphagnum Moss may be made upon the stage, the plants being inserted into the Moss and supported in an upright position with stout sticks. The south or sunny side of the hottest house is the best place for both species, and when the plants have made plenty of young roots they should be exposed to full sunshine. During the daytime plenty of air should be admitted, but the house should be closed early in the afternoon, to allow the temperature with sun heat to run up to 100 degs., or even 110 degs. will do no harm. When the plants are growing freely they should be constantly syringed, especially at closing time. In winter the temperature should be lowered to about 55 degs. by night, and a few degrees higher by day, during which time the plants should be kept somewhat on the dry side. Vanda Amesiana and V. Kimballiana are very useful and beautiful Orchids. Both species may be grown either in pots or Teak-wood baskets, filled to about one-half their depth with drainage, working in amongst the roots Sphagnum Moss, intermixed with pieces of crocks or charcoal. These plants require a moderate supply of water whilst the roots are active, but when growth is completed very little is needed to keep the succulent leaves and stems plump. A light but cool position in the Cattleya or intermediate-house is the best place for them the whole year round.

W., *B.*

ONCIDIUM ZEBRINUM.

The flowers of this Oncidium are very distinct and beautiful, and I consider it is not nearly so much grown as it deserves to be. The flowering season depends to some extent on how it is grown, but if kept going after it starts in spring the blooms may be had in perfection during the present month. They are produced on long scandent and branching scapes, and are individually from 1½ inches to 2 inches in diameter. The ground colour of these is white, and the sepals, petals, and lip are all transversely barred with purple, the top spotted with reddish-brown. The best mode of culture for O. zebrinum is to make two suitably sized rafts, and line these with about an inch of peat and Moss, as it is easy to add more afterwards if found necessary. The plants may be wired down firmly to these as near the centre as possible, for, on account of the bulbs occurring at a considerable distance apart on the rhizome, they will soon reach the outside of the raft. Every season it will be necessary to remove a little of the old compost and give fresh peat and Moss when signs of new root action are apparent. This will strengthen the plants considerably just at the time they need support, and obviate the necessity of removing them entirely. If the plants do well they will push abundance of roots down through the compost, and those twining about the rods make it a difficult subject to transplant, so the need of keeping each set of new roots healthy may easily be seen. The best place for the plants is a shady part of an intermediate-house, the rafts being suspended from the roof, where they will get the benefit of the air currents. If no intermediate temperature is at command—that is, nothing cooler than the Cattleya-house—the plant will thrive with the Odontoglossums; in fact, some cultivators prefer the cooler system for it. It is more a matter, however, of a nice moist and steady atmosphere and careful treatment of the roots, for if these details are well attended to a few degrees higher or lower will not make much difference.

No resting season is required, though if the growth seems inclined to steady a little it is not advisable to excite it. But the plants must never be dried off, such treatment being very injurious and weakening to them, no corresponding benefit accruing. Scale is the only insect likely to attack the plants in a suitable atmosphere, but, if kept dry and hot, thrips are also liable to put in an appearance. Neither of these must be allowed to make headway, or the plants will be greatly checked, so at the first signs of the insects they must be carefully sponged, repeating this if necessary until a complete riddance is effected. O. zebrinum is a native of Venezuela, and first flowered in this country about a year after its introduction, in Mr. Bull's collection at Chelsea in 1872.

H.

A curious Lily.—I send you a photograph of Lilium auratum. The flower-stem was 2½ inches wide and ¼ inch thick, and at the top was a cluster of forty-five perfect blooms.—Miss Carr Glyn, *Wood Leaze, Wimborne.*

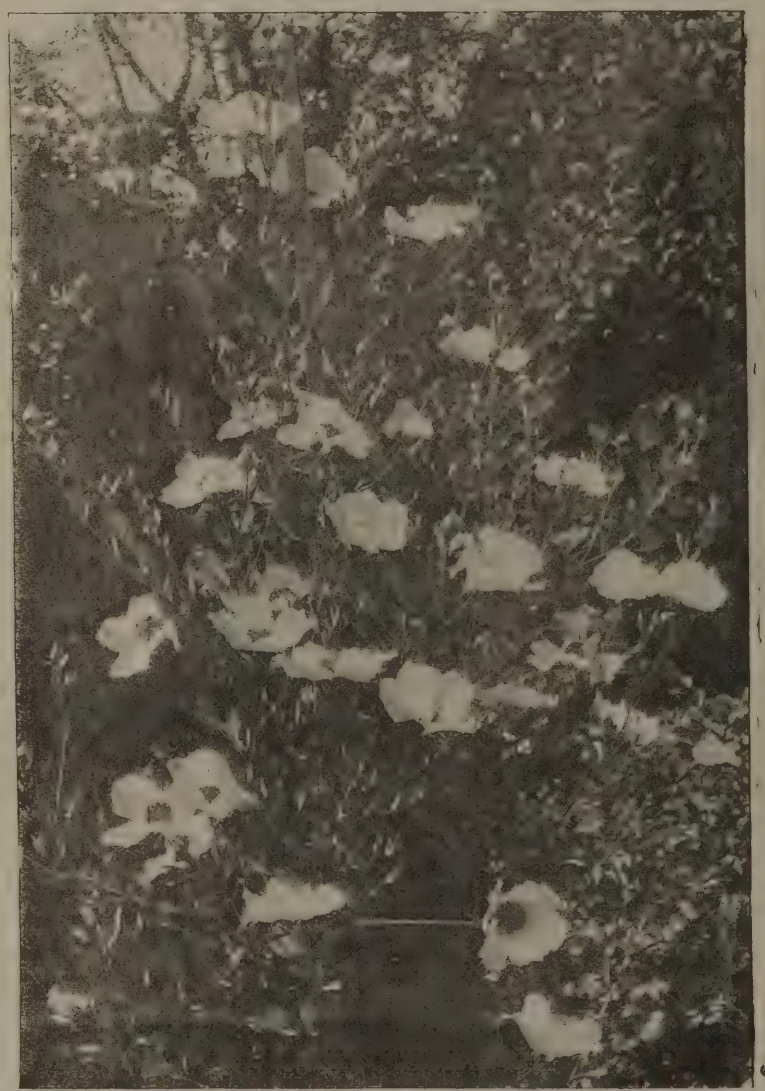
*** A fasciated stem, but the flowers were unusually fine for such growth.

OUTDOOR PLANTS.

THE WHITE BUSH POPPY (ROMNEYA COULTERI).

The plant here illustrated is two years old, and has stood two winters at Clevedon in the open ground, without any special covering or attention. It has now reached the height of 8 feet, and had in the summer thirty blossoms (from 6 inches to 6½ inches in diameter) out, with many buds to follow. The foliage is remarkably healthy, and resembles that of the Sea Poppy. The flowers are pure white, the petals crinkled and thick, with a centre of golden stamens like a bright yellow ball. It is the admiration of all who see it. The gardener who raised it from seed has not met with another such successful plant. C., *Elmhurst, Clevedon.*

*** The White Bush Poppy is happiest on warm sandy soils, and the open garden is sometimes too cold for it. The plant often grows well against a wall.



The White Bush Poppy (Romneya Coulteri). From a photograph by Mr. Hazell, Clevedon.

CACTUS DAHLIAS.

I was pleased to see these charming flowers referred to in Gardening, Aug. 28, page 375. They are now recognised as the prettiest and most useful among Dahlias, and rarely has a plant undergone so quick a change. Not many years back the singles were cultivated largely, and were highly esteemed for the supply of cut flowers. The fault of these is that the blossoms are not lasting. For this reason they have practically died out, or rather made room for the Cactus kinds, now so numerous and beautiful.

The first of these, known as Juarezi, is yet a very good type; but since its introduction a great number of sorts have from time to time been raised—varieties with flat, wide petals, which are wanting in lightness compared with quite recent kinds that are now regarded as the true Cactus Dahlias. These have long, spiky, loosely, although symmetrically, arranged petals, most elegant in the eyes of people generally There is undoubtedly a great future for the type, which is to Dahlias what the Japanese class is to Chrysanthemums. Fresh and better properties gradually spring up in the newer kinds. There is, however, still room for improvement—that is to say, more colours are desirable. A good length of flower-stem is not found in all cases. All should produce double blossoms without requiring to be thinned, and mere size ought not to be the leading quality. The following are selected as being the best of their shades of colour:—

Beatrice.—This is a very distinct kind. Its flowers are bright rose-pink in colour, the plant free, and need not be much thinned.

Bertha Mawley, cochineal colour, a nice flower, and a bushy grower.

Blanche Keith.—This is yellow, a trifle large and coarse, and must be included until we get a better variety.

Charles Woodbridge is one of the most perfect of Cactus Dahlias. Its colour is a purple-crimson shade, very bright and rich. It has first-rate growth, of a bushy nature, and throws the blooms well out from the foliage.

Countess of Gosford, light cinnamon shade. This requires a great deal of thinning, both the growth and flower-buds.

Cycle is a new and most beautiful kind. I regard it as an improved Bertha Mawley. The colour may be described as ruby-red. In every respect this is an acquisition.

Delicata, light salmon-pink, is fairly well known, and is pretty; but the plant must be severely thinned, and the blooms are mostly hidden among the leaves.

Earl of Pembroke, velvety-purple colour. This is a very fine variety, and is perhaps the most free flowering of all. Every bloom comes double. It is a fine type, and other colours are wanted with similar qualities.

Fusilier is an excellent kind. Colour, coral-pink, a shade much admired. It has bushy growth, and requires thinning.

Gloriosa.—This has bright scarlet flowers, and is most perfect. The growth is somewhat tall. I think a flower with narrower florets would be an improvement. Otherwise this is one of the best Cactus Dahlias.

Harmony, bronzy-yellow, very pretty. The plant should be severely thinned.

Harry Stredwick, rich, dark, fiery-crimson. with quite a black shade. The form is handsome. It is also good in other respects, and is the best dark-coloured variety.

J. E. Frewer.—This has blooms of a light red, is well formed, and very fine. The plant is dwarf, but much of the growth and flowers must be removed, or the latter exhibit a centre "eye" or yellow disc when fully open.

Keynes' White.—I have included this, although it is not yet in commerce. It is the best white, a colour not hitherto found in any variety with other good points of the type.

Lady Penzance.—This is the most elegant and beautiful of yellow varieties. Its blooms are most perfect. It has the fault of a short flower-stem, and the growth must be severely cut out.

Mary Hillier, light brick-red shade. It is a nicely-formed flower and an excellent grower, requiring but little cutting out.

Matchless has blooms of a very dark maroon colour. It is very free, and if much disbudded is apt to come coarse. It is always good, but when the flowers are produced with petals of a spiky character it is one of the very best Cactus varieties.

Mayor Haskins.—This is a rich dark red flower, rather large, with wide petals. Still, it is a very showy bloom.

May Pictor, yellow, with a buff tint. This is a free-flowering and excellent kind.

Miss A. Nightingale is scarcely a true Cactus-shaped kind, the petals being somewhat flat; but it is a most striking flower. Colour, yellow, flaked red. It needs little thinning.

Mrs. A. Peart, white, with a faint lemon tinge. This is most uncertain in its shape. When true it is a fine type. I find it better from old bulbs; and late in the season this sort has generally the more perfect blooms.

Mrs. Barnes, primrose, with a rosy tinge. This is a pretty variety, and very free. It should be well thinned. This helps to bring the blooms well out from the leaves.

Mrs. Gordon Sloane is a first-rate type. Colour, a terra-cotta shade of pink. It has long stems, and may be thinned.

Mrs. Wilson Noble.—Generally one of the most admired of all Cactus Dahlias. The colour is pinkish-salmon, and the blooms well-formed. This sort requires severe thinning, or the blooms will come with a green centre.

Princess Ena, amber-yellow, a pretty tint. In form it is lovely; the habit of the plant dwarf. It is a new variety, certain to become popular.

Starfish is one of the most perfect yet raised. Colour, bright scarlet. It has narrow, well-arranged petals, and the blooms are freely produced. The plant is vigorous, with capital foliage. I think this variety is an improvement on gloriosa. It is admired by all who see it.

In addition to the above one cannot give up that charming variety

Countess of Radnor, although the shape of bloom is not considered the true Cactus type. The delicate shades of salmon are particularly beautiful. It is free-flowering, but one could wish the stem longer.

Bridesmaid is a new sort, just opening its blooms, and looks most promising. The shades of colour in this variety are primrose and rose—a delicate combination. The bloom is also true in character. S.

Border by lawn.—Will you kindly give me a suggestion for a border to my lawn? It is 87 yards round, of an irregular oblong shape, and at the present time it has an edging of White and coloured Pinks. My gardener proposes Pansies, but I fear they would not be sufficiently compact. It should not be too expensive, as there is so much of it.—C. C.

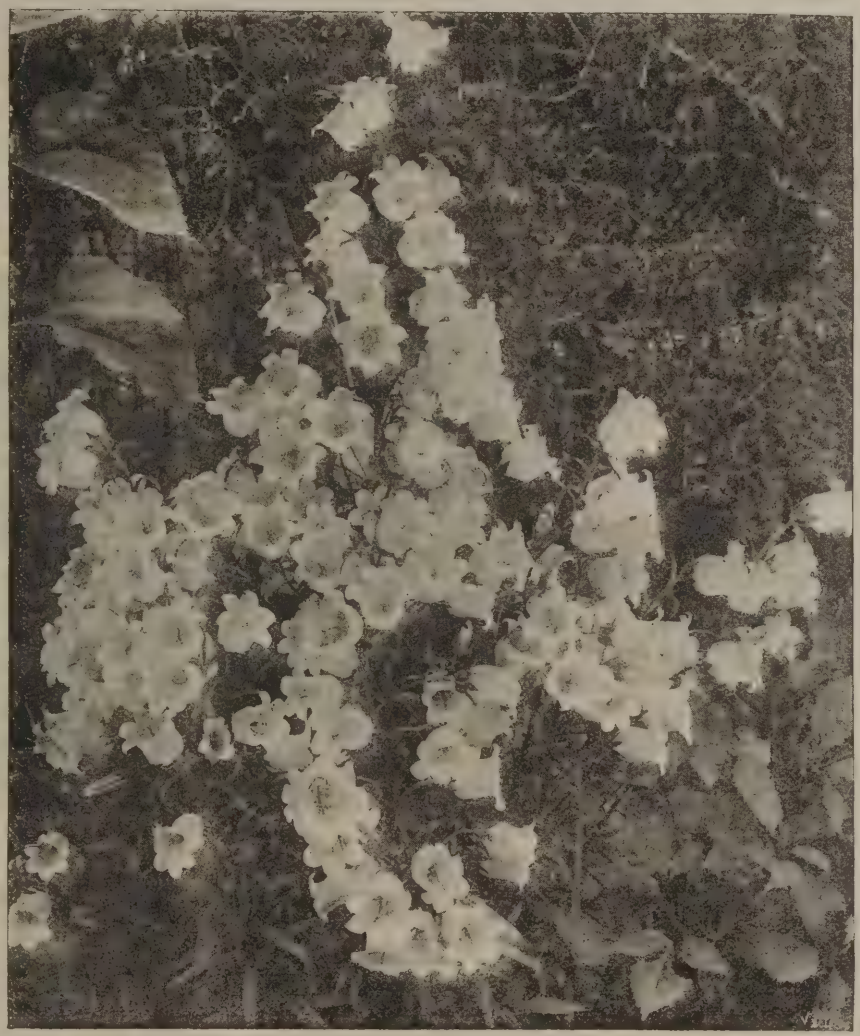
*** White Pinks form an excellent edging for beds or Grass, as, when in flower, their perfume is delicious, and when out of flower their blue-green "grass" is always attractive. Some of the denser-growing Tufted Pansies would, doubt-

less, make an effective bordering through a portion of the year. Cerastium tomentosum we have also seen used with good results, and London Pride (Saxifraga umbrosum) makes a very pretty edging when in flower, and will grow anywhere. We shall, however, be inclined to award the palm to White Pinks.

CANTERBURY BELLS.

The handsomest and most stately among the Campanulas of a hardy character is to my mind the biennial Canterbury Bell. The plants when in bloom are most attractive. The Canterbury Bell is Campanula Medium, and literally interpreted the generic name means bellflower. But how did it obtain the name of Canterbury Bell? There is reason to believe the name was originally applied by Gerard to the British Nettle-leaved Bellflower (C. Trachelium), from its growing so plentifully in the low woods about Canterbury, and probably in allusion to the bells so called that were used by pilgrims on their road to and from the shrine of St. Thomas. But the Canterbury Bells of our day are the large bell-shaped blossoms of C. Medium, which was introduced from Germany nearly 300 years ago. For years we were content to grow the purple and white varieties, or some paler shades of blue and blush-tinted varieties of the white. The rose-coloured varieties, double and single, were introduced, and the cross-fertilisation of these with selected forms of the old type has given us the fine family of Canterbury Bells seen at the present day, both double and single. It would not be difficult to select a dozen or more distinct varieties, all large, stout, and finely formed, and so beautiful are they that they well deserve a place in the garden. They are particularly well adapted for dotting about in mixed borders with perennial plants, and when they have gone out of bloom they can be removed and room made for late-flowering Stocks and things of that kind.

Some years ago the calycanthema varieties of the Canterbury Bell were introduced and found much favour. In their case the calyx has broadened out until it has taken the form of a saucer, and in the case of improved varieties it has become of a large size and very conspicuous and striking. There are several varieties of the calycanthema type, and they mix well with the improved forms of the ordinary Canterbury Bell. It is a biennial, and seeds raised now under glass will bloom next year. A few other good biennials which may be sown at once, and no time should be lost in doing so, are the Antirrhinum (Snapdragon), the Forget-me-nots, especially the large blue Myosotis dissitiflora, the white and purple Honesty, the giant white and scarlet Brompton Stocks, the Sweet William, which is just now in the full flush of its summer bloom, and the yellow and blood-red Wallflowers. Of perennials, Alyssum saxatile, the pretty Columbines, especially the fine yellow A. chrysantha, Aubrietias, Delphiniums, Hollyhocks, the perennial Œnotheras, Iceland and Oriental Poppies, and Everlasting Peas should be sown. It is a good practice to transplant from the seedling beds. All the subjects named are hardy, but some of the more succulent growers among them sometimes suffer from severe frost following close upon heavy rains. R.



Canterbury Bells. From a photograph by Mr. Mason Good, Winchfield, Hants.

MICHAELMAS DAISIES.

The best way to deal with the Michaelmas Daisies of moderate height and good habit is not to tie them at all, and the best place for growing them is the margin of a sheltered shrubbery where they can have plenty of room. They should be nearly twice their own height from one another, so that the outer stalks can droop nearly to the ground without crossing the branches of their neighbour, and they then not only flower outside and inside each branch, but show their flowers to the best advantage. This is, in theory, the best way to grow these perennial Asters, but in practice there are many difficulties. Comparatively few gardens have the suitable sheltered range. Some Asters are so tall and top-heavy that the weight of the flowers after a shower will break them off at the base, and some with pliable stems bend over in such a way as to hide their heads on the soil. Where it is necessary to tie up Asters it must be done with judgment—loosely and not formally, so as to allow all sides of the branches to develop their flowers. If several iron pins, which need not be long or conspicuous, are used for each large plant, a few plants may be made to cover a large area, and to give so much gaiety of colour to a mixed border that one wonders where there was room for the other flowers before these came out.

The best display of Michaelmas Daisies I have, and I may say without boasting have ever seen, is upon a boundary row of hurdles, 4 feet high and 30 yards or more long; the Asters grow through these, and the branches can be spread and tied to the bars as occasion requires. It must be remembered, in suggesting a boundary fence for this purpose, that cattle show a remarkable fondness for Aster flowers, and that it is surprising what a long stretch horses can make to get at them. But there are many positions in which a wooden espalier, to serve the same purpose as hurdles, may easily be run up. The Asters should be about the same height—say 5 feet—so as to show a good row of flowers over the top.

As for the kinds of Asters to be recommended, I am not going to commit myself by giving a list of names, half or more of which when obtained from a nursery would not be of the variety intended, for in spite of the laborious work of the conference there is still a want of uniformity and constancy about nurserymen's names. In the first place, those who wish to get a collection of Michaelmas Daisies should visit nurseries where a good collection is grown and make their choice whilst the plants are in flower. They may then disregard names. Height, colour, and time of flowering, which may be learnt in this way, are of more consequence to the amateur than names. It is also desirable that when intended to make a good display side by side they should be of similar habit of growth. For instance, the choicest of Asters, A. Amellus, should not be mixed up with varieties of Novæ-Angliæ and Novi-Belgi, excellent as it is for masses in the mixed border. Dwarf kinds of less than 2 feet high get smothered or obscured if grown amongst plants with an average of 5 feet. All these plants should be grown where they can be seen down to the ground or nearly so. Drooping side-shoots filled with flowers are a great addition to ornamental qualities, and of some, like J. W. Grant, it is the chief merit that they bear horizontal branches down to the soil.

The ordinary Michaelmas Daisy looks far better when grown in less fertile soil than when in highly manured loam, which gives thick stems and distorted growth and too much leaf for the flowers. It must be found by experience what kinds like shade, of which the cordifolius section is an example, and what (as Amellus) delight in full sun. The Amellus varieties, too, dislike frequent division, and do well for ten years or more in one spot with an occasional top-dressing, whilst other kinds, of the lævis class, seem as if they could not be divided too frequently for their welfare. Of course, in this case several shoots may be planted in a clump at reasonable intervals. As for arrangements according to colour, I never give advice about this; besides, I do not believe in it. An artist lately in my garden was complimenting me on the successful arrangement of the colours in my mixed borders, which was, as I told him, the result of mere accident; whilst I have known the most studied disposals of colours result in utter failure. But, as I have said before, height and time of flowering must not be neglected in planting. There are more Michaelmas Daisies too tall than too dwarf, and dwarf kinds may be used with excellent effect near the

front of mixed borders, where tall kinds would be untidy. In whites we have every height from 7 feet to 7 inches, and the flowering extends over a long period. The dwarfest of all, called at the conference versicolor nanus—excellent as it is for edging—is too late in most seasons, and does not complete its flowering before hard frosts spoil it. Good blues are still a desideratum. A. spectabilis and Archer-Hind, two of the nearest approaches to blue, are respectively too early and too late. By raising Amellus from seed, some individuals are far nearer true blue than others, but it is slow work getting up a stock from a seedling of Amellus. I may remark in passing that different lights make a wonderful difference in the shades of blue in Asters. An hour or two after sunrise or before sunset shows them to the best advantage. Sometimes in passing a bed of seedlings I make a set at one which looks sky-blue and mark it, and wonder how I could have overlooked it before, but the next day the same flower in full sun shows that objectionable and variable red-purple tint commonly described as mauve. All who observe Asters must have noticed these variations.

Whilst on the subject of seedlings, it should be observed that they should be carefully cleared every summer from the crowns of established clumps of Asters, otherwise they grow up and become hopelessly mixed at the roots, and in two or three years a worthless seedling supersedes a choice variety. D.

Montbretias in winter.—I have grown Montbretia crocosmiæflora for the first time this year, and am pleased with the plants. They are still blooming, and their gorgeous colour makes quite a bright spot in the garden. I should like to know if it is best to store them as Dahlias during the winter or leave them in the ground? Our soil is, I should say, a cold soil, Hertfordshire clay, though well drained, and I afraid the bulbs may perish if not lifted. This year I planted the Montbretias in a border with a row of White Pansy in front and Gladioli at the back, but the latter was not a success, and I am puzzled what to plant in their place. I see in the catalogues there are several other Montbretias, and I thought of planting a row of some kind, taller and of a different colour, and the crocosmiæflora, but which kind would be best? Or would the Hyacinthus candicans look better? I would like the border to be in bloom all at the same time. It faces south-west.—Crosspatch.

*** Montbretia Pottsi and M. crocosmiæflora are quite hardy in the south-west of England and increase very rapidly. Whether they would do so in the colder climate and clay soil of Hertfordshire is an open question, but it would be well to leave a portion in the ground, giving it a mulching of leaf-mould, Cocoa-nut-fibre, or long-manure, and to lift the remainder when the leaves have died down, replanting in the spring. If those left *in situ* take no harm, the whole batch may be left in the open the succeeding winter. M. crocosmiæflora is not easily beaten as a decorative plant by any of the newer introductions. Hyacinthus (Galtonia) candicans is very beautiful when associated with the Montbretias, but generally blooms a trifle earlier, and thus the two are rarely in perfection at the same time; still, with late planting the Galtonia, as we have before now seen, can be had in bloom with the Montbretias. Here the white Japanese Anemone Honorine Jobert is used in association with Montbretias, its simple, white flowers setting off the orange-scarlet of the Montbretias' scapes to perfection. It also has the merit of lasting longer in perfection than Galtonia candicans.

GARDENING NOTES.

Frosts in Cumberland.—Ten days ago the Grampian range was white with snow from base to top. We had some bitterly cold weather here, 2 degs. frost one night, and the glass at freezing-point afterwards, but the Marrows and French Beans have alone suffered.

Gladiolus Psittacinus.—This is the commonest of all the species in S. Africa, the parent, too, of many of the handsome varieties. The tall spike bears many gay, medium-size flowers of fiery red and yellow colour. I have it in pots. The bulbs did not make much growth last year, and were stored as they stood in a cold-frame during winter. When the warm months arrived they were placed in a sheltered position outside and have done well. W. H. L.

POET'S DAFFODILS.

Beautiful as are all the Narcissi, there are none that can compare, for chaste loveliness, with the snow-white Narcissus poeticus, which is as essentially the "Narcissus" of poet and painter as is the Madonna Lily the "Lily" *par excellence* of all her numerous sister-flowers.

Although nowhere out of place, the spring bulb bed is not the setting that presents these fair blossoms to the best advantage. Never do they look so beautiful as when grown naturally among natural surroundings, where they are able to give the impression of occurring accidentally. In the grassy glade the slim flower-stalks sway gracefully, the pure white blossoms spangle the verdure, their crimson-rimmed eyes, that are answerable for the pseudonym of Pheasant's-eye, adding by contrast to their purity. Sometimes the Poet's Narcissi, growing on a mossy slope, are surrounded by colonies of wild Hyacinth. Sometimes at the edge of a cascade they rise from out a carpeting of blue Forget-me-not, or stand, in clumps, at the lake's side, mirroring their white petals in the dark water. In all such situations they have that air of untrammeled freedom that must needs be absent amid more conventional surroundings, but which adds so greatly to their charm, and it is such

The Poet's Daffodil (Narcissus poeticus ornatus) in the Grass.

pictures that we have in our minds' eye, rather than the formal flower-beds, as the lines recur to us:—

"The White Narcissus wantonly
Kisses the wind."

It is

"Beside the lake, beneath the trees,
Fluttering and dancing in the breeze,"

that these beautiful flowers of the English springtide show their true value, and, though the latter couplet was written of the "Golden Daffodils"—the wild Lent Lily—it is equally applicable to the Poet's Narcissus.

The term Daffodil was, of old, applied to the whole family of Narcissi, and there is a pretty legend that its derivation is from "Fleur d'Asphodel," the Narcissus of to-day being identical with the fabulous Asphodel, of which poets of all ages have written, and which can scarcely have been the flower which is now known under that name. The two best known of the Poet's Daffodils are Narcissus poeticus ornatus, which blooms in April, and N. p. recurvus, which flowers in May, while the double white poeticus, which is a trifle later than recurvus, is equally hardy with the foregoing, and is easily naturalised in the Grass. N. p poetarum is a distinct and exceedingly handsome type, and there is a variety named grandiflorus, which bears extra large blooms. Many very beautiful hybrids have lately been raised from N. poeticus, but the Poet's Daffodil is surpassed by none. S. W. F.

ROSES.

Roses blighted (*H. Chambers*).—Your Roses are suffering from mildew, and we can only refer you once more to our issue for August 21st, as to the best means of combating this disease.

Repotting Roses.—I want to know why these plants should be repotted—if necessary—in October, seeing they apparently do not make new growth until February or March? Most plants, I understand, should be repotted just when new growth commences, and I am curious to know why Roses should be an exception, and their roots remain inactive in new soil all through the winter? It seems to me this must be a mistake.—A. B.

*** An article upon this subject is appearing, in which some of our correspondent's ideas are met. But he is wrong in saying the Rose-roots are inactive all through the winter. Let him, at any time, lift a Rose and lay its roots into a light or fresh compost, and he will find them active in a week or two, even if in the open ground. In pots, with a better regulated compost both as regards heat and water, Roses are very active long before top growth moves, and if we could lift a plant sufficiently careful from the open we should find this more or less the case with established plants. As a matter of fact, the roots of trees are never inactive. If so, how could they supply the sap and moisture necessary to keep the top growth alive during a piercing and drying wind? When they are inactive the plant dies and the wood shrivels up.

Tufted Pansy Molly Pope.—Few Pansies have rewarded the grower as this variety has done. During the last two months more particularly this sort has stood out conspicuously from the others, and it is safe to state that, as a late-flowering sort, it excels most others. It belongs to the rayless type of the flower, of oval shape, with prettily-crimped edges. The plant has flowered profusely, and the flowers having long stems stand out well above the foliage. The colour is rich, clear yellow, and is effective.—D. B. C.

Cactus Dahlia Frances Humphries.—This variety has been in cultivation two or three seasons, but it has escaped the attention of many, and is, as yet, scarce. It should, however, be noted on account of its charming colour. This is orange of a rich shade. The blooms are well formed and produced on long stems. It is rather taller than the bulk of Dahlias, and a very strong grower.—H.

Early Chrysanthemum Flora is a decidedly useful kind. Its blooms are small, but are produced in a dense mass. The colour is bright yellow. The bushy habit makes it a capital pot plant, and it is equally effective in the open border. This is not a new variety. It is grown in quantity for market—a pretty sure sign of its merits.—S.

GARDEN PESTS.

Tomato-leaf disease (*G. Walker*).—The Tomato-leaf you sent is attacked by a fungus—I believe by Cladosporium fulvum—but the leaf was so crushed and dried when it reached me that I cannot be certain. I do not imagine that the liquid-manure had anything to do with it, unless it was administered in such quantities as to make the plants unhealthy. Probably the ventilation was in fault. Your best remedy is Bordeaux-mixture, which you can make by dissolving 1½ lb. of sulphate of copper in warm water, and slake 1 lb. of freshly burnt lime, and make it into a whitewash about as thick as cream with water. Strain it through coarse canvas into the copper solution, and add 11 gallons of water, and stir thoroughly. When the crop is off I should do all I could to cleanse the house, and you would, at any rate, be on the safe side if you started again with fresh seed.—G. S. S.

Grubs in pasture field (*D. T.*).—The grubs that are attacking your pasture field are those of the field-chafer (Phyllopertha horticola), or young individuals of the grubs of the common cockchafer. One of the best remedies is folding sheep on the infested fields for some time, feeding them well with Turnips, etc., the trampling of the sheep and the saturation of the ground with their urine being more than the grubs can stand. Watering with 1-10th of gas liquor to 9 10ths of water, or strong brine is also recommended. Taking up the turf round the withering patches and burning it will destroy numbers of the grubs.—G. S. S.

Insects in Poppy-heads (*Grenadine*).—The insects in the seed vessels of your Poppies are the grubs of a small fly, and they no doubt feed on the interior of the seed vessel, and probably on the seeds. Any of those that have not been injured by the grubs would germinate all right, and there would be no eggs on them. I should be careful to burn any heads which you think might be infested with these grubs.—G. S. S.

Death of queen Bee (*D. J. Moule*).—The queen Bee you forwarded was infested by the Bee-louse (Braula cæca). This insect is not really a louse, but a fly, though it has no wings. It belongs to the same group as the forest-fly or horse-tick, the sheep-tick, and bird-ticks. Its life-history is a curious one. As soon as the grub, which is headless, is hatched from the egg, within twenty-four hours it becomes a chrysalis, so that, unlike most insects which pass the greater part of their lives in the caterpillar or grub state, almost its entire existence is passed as a mature insect. I should recommend you to thoroughly scald the hive with boiling water and scrub it well. I am not sure how any insecticide would suit the next occupants, as it would be sure to leave some smell.—G. S. S.

Grubs attacking Potatoes (*Turner*).—The grubs attacking your Potatoes are wireworms, the grubs of one of the skip-jack or click-beetles. They are often very abundant in garden ground recently converted from pasture. When land is so converted the turf should always be pared off and burnt so as to destroy this insect. No insecticides seem to be of any use against this pest. When the crop is off keep the ground well broken up so as to allow the birds to get at the wireworms—rooks, starlings, and plovers are very fond of them. Rape-cake, broken up into small pieces about the size of Broad Beans, spread broadcast over the ground, will attract them, as they are very fond of it.—G. S. S.

Rheums infested with insects (*On Yon Bonnie Banks*).—Your Rheums are badly infested by one of the aphides, a near relative to the common green-fly. As the season is so far advanced, the leaves cannot be of much more use to the plant, so I should cut off and burn all the infested ones, and, at the proper time, clear away all the dead leaves and any rubbish there may be round the plants, and burn them. Next year, if these insects appear again, syringe the leaves with the extract from ¾ lb. of Quassia-chips, ½ lb. of soft-soap, well mixed in 12 gallons of water; or ¾ lb. of soft-soap, 1 pint of paraffin-oil, thoroughly mixed together with a little hot water, and added to 12 gallons of water. This must be kept well stirred, or the oil will float on the top, and some of the leaves will get too strong a dose of oil. When the leaves of plants are eaten by some insect, and the culprit cannot be found by day, they should be searched for at night, as many only feed then.—G. S. S.

THE TURNIP-FLOWER-BEETLE (MELIGETHES ANEUS).

Few, if any, of our crops suffer more from the attacks of various insects than those which belong to this family (the Cruciferæ), which includes Cabbages, Cauliflowers, Turnips, Rape, etc. Several of the pests which attack these crops, either by injuring their roots or leaves, have already been described in this series of papers. I have now to treat of one which attacks the flowers and seed, so that it seems as if insects were bent on destroying these plants altogether, and, in fact, utterly exterminating them. Some attack the leaves as soon as they appear above ground; if the plants survive this treatment, others attack the roots and the more mature leaves. If, in spite of all this, the plant is able to flower, the Turnip-flower-beetle does its best by destroying the pollen to prevent the plant from setting its seed, and when seed does set, the grubs of this beetle feed upon them. From the above it will be seen that this insect is not so injurious to the majority of Cabbage and Turnip crops as many of the other insects which infest them, for it only attacks those which are grown for seed. To these, however, it is at times a most destructive pest, and even to such an extent as to quite ruin the crop. The beetles come forth from their winter quarters about the middle of May, and as soon as the crops are in flower infest them and feed upon the pollen. The females lay their eggs in the flower-buds, and the little grubs which are

The Turnip flower beetle.

hatched from them in the course of a few days feed on the flowers and on the seed-vessels and their contents. They are full grown in about a fortnight, and then fall to the ground, bury themselves, and forming small cells become chrysalids within them, from which the beetles emerge about three weeks later. The beetles pass the winter in the ground, or under Grass or weeds, or at the roots of plants. As regards the best means for the destruction of this insect, all weeds belonging to the families to which Cabbages and Turnips belong should be most carefully kept under, as it is on these that this beetle lives until the cultivated crops are in flower; and dressings of guano, lime, soot, or sand soaked in paraffin-oil would be useful. In gardens the beetles might be shaken on to boards or canvas covered with tar or newly painted; this is more easily done in the case of some insects, as they neither fly nor jump away. It is no use trying to kill the grubs by an insecticide; the infested plants are best burnt at once if the attack is severe. The Turnip-flower-beetle measures about 1-10th inch in length, and is widish in proportion; it is of a metallic-brassy or green colour, with reddish legs. The feelers are clubbed. The grubs are about 1-6th inch in length. Their heads are dark, and furnished with a pair of strong pointed jaws; their bodies are yellowish-white; the first three joints each bear a pair of legs, and the last joint a single leg. The figure, for which I am indebted to H.M. Stationery Department, shows the head and feelers of the grub much magnified. G. S. S.

Peas (*G. and S., Ormskirk*).—I am quite as much puzzled with the Peas as you are. Has anyone put the Oats into the Peas for fun, or have the Peas been mixed with Oats at any time? For if they have, it is just possible that if shaken about together the Oats might have worked into holes in the Peas made by some insect. The holes look to me as if they were the work of some insect. Seeing the holes may have prompted some child to stick the Oats into them. No insect could have pulled the Oats in, or you would have found it. Have any considerable number of the Peas been treated in this way, and have Oats been kept near the Peas?—G. S. S.

Blighted Fuchsia-leaves (*West Meath*).—Your Fuchsia-leaves have been badly attacked by thrips. They may be killed by Tobacco-smoke, or by vaporising Tobacco-water; or they may be sprayed or dipped in the extract from ½ lb. of Quassia-chips, ½ lb. of soft-soap, to ten gallons of water.—G. S. S.

Caterpillar (*Entomologist*).—The figure you sent of a caterpillar is that of the common dagger-moth (Acronycta Psi), a very common insect. The moth may be found from May to August.—G. S. S.

FERNS.

THE ROYAL FERN (OSMUNDA REGALIS).

This native Fern is in all respects a noble plant, and one that well deserves its distinctive appellation, for when seen at its best few of our native plants present a more truly regal appearance, producing as it does handsome fronds from 6 feet to 9 feet in height. The fertile fronds are crowned with "panicles," resembling flower-spikes, and hence it is commonly known as the Flowering Fern. This noble plant delights in a rich, spongy, damp, peaty soil, where an abundance of water is available during its growing season. The best position for it is a spot sheltered by shrubs. Hardy Heaths and similar plants, and some of the larger-growing of the ornamental Grapes may be planted near and around it. It should be planted in clumps, and when once established will rapidly develop itself into large masses, the only attention required being, as already mentioned, allowing it abundant supplies of water during its season of growth. It would associate well with Tritomas (Torch Lilies) and other bold-looking, ornamental hardy plants. A variety of the Osmunda, called O. regalis cristata, with handsome, crested fronds, is well worthy of extensive culture, and, in addition to its other good qualities, it will thrive well in a pot. A notable addition to park scenery might be made by planting groups of Royal Ferns around the shady margins of lakes and similar positions, in which their noble growth in summer would have a strikingly tropical appearance, giving variety and interest to the landscape. There are, in addition to our indigenous species of Osmunda, several hardy exotic kinds, natives of Canada and North America, which will thrive well grown along with the British variety. Amongst the most noteworthy of these may be mentioned the truly beautiful species called O Claytoniana, known to some as O. interrupta, so called from the peculiar form of its fructification. It generally grows from 2 feet to 3 feet in height, and the colour of the fronds when in good health is of a particularly bright green. It is deciduous and a really noble hardy Fern. O. gracilis is a slender-growing, graceful kind. O. cinnamomea, O. cinnamomea angustata, and O. spectabilis are also highly desirable, and distinct varieties of this noble genus. B. H.

Preparing ground (*E. W.*).—Onions and Dahlias, though an odd combination, equally like deep and well-manured soils. Yours should furnish the required quality if you will trench it well, as is needed. Throw out at one end a trench 2 feet wide, the full width of the ground, and make it 12 inches deep. Then with a long fork break up the bottom or subsoil deeply, breaking it to pieces. Add a dressing of animal manure and mix it with the bottom soil, then throw in on to it the next trench of same width and length of top soil, and so go all through the piece of ground. Then get on to the surface a good dressing of warm manure and well fork that in. So prepared, the soil should grow fine Onions, spring or autumn sown, and also give Dahlias. Change the crops each year alternately.

Adonis vernalis.—Attention is directed to this beautiful spring-flowering plant at this season, because in many gardens this is found to be the best time for planting. Particularly does this apply to light soils It is also at this season of the year that hardy plant dealers are

receiving large importations of this in company with Cypripedium Calceolus and such things. Under these circumstances there are many advantages to be gained by intending planters securing their supplies without delay. Too frequently the planting of this beautiful subject is deferred till spring, when the plants are in flower, and small, unestablished pieces have then but little chance of success. In collecting this plant, in common with many others, the plants are frequently torn out and a mere stump of their former roots left. Needless to say, there is always difficulty in getting such pieces to grow. It is worthy of remark, however, that these pieces, if placed somewhat thickly together in Cocoa-nut-fibre in shallow boxes, keeping them rather moist, soon push new roots; whereas in the soil, and particularly heavy soil, these old roots very often perish. I have repeatedly used Cocoa-nut-fibre in planting this Adonis in heavy soils and with excellent results. In this part of Middlesex in a light loamy soil this plant grows and flowers with great freedom, the roots often descending 18 inches into the earth where the soil is rich and deep.—E. J.

FRUIT.

CORDON-TRAINED APPLES.

Many amateurs with small gardens cannot afford to plant Apple-trees for future residents to reap the benefit of their labour, and in many gardens large standard trees do harm to the plants under them. In my opinion, with a restricted space standard trees are out of the question, as the owner does not like to cut them down when they are old. Large trees, however, of the Blenheim Orange and King of Pippin type fruit so freely when old that they are then most profitable. On the other hand, it is not well to plant every variety in cordon form, as some do not fruit well thin grown, and in planting the position and mode of planting must be considered.

Few fruits lend themselves to this restricted mode of culture better than the Apple. The Pear is equally at home, but as the illustration is of cordon Apples I will confine my note to Apples and the advantages of cordons for profit or home use. On the other hand, with cordon Apples the trees to do well should be worked on the best possible stock, the Nonsuch Paradise-stock being the kind to use, as it is so fruitful; and the amateur by planting cordon trees can in a year or two get a fair return for outlay.

There is no better time than the early autumn to plant cordon trees. I think it is an advantage with most fruits, but more so with cordon trees, as the growth being early the plants require some time to get used to the soil; they make an earlier start in the spring and produce fruit of better quality the next season. By the term cordon it will be understood there are several ways of training, the one which finds most favour with the Apple being the single cordon, but I do not think it superior to the double. It is readily grown into a fruiting-tree, is of easy culture, and certainly suitable for amateurs, as the culture is so simple after the tree is once formed. I do not think there is so much difficulty at the start by this mode of culture. A single cordon when obtained from the nurseryman is a maiden tree of one year's growth, and may then be trained in any position, as it is at an age it can be trained. There are older cordons; indeed, these may be purchased grown specially and ready trained if they are needed to grow in an erect position. Our cordon Apples in most cases are horizontal, and to be in this position must be trained from the first. I do not say it is the best position, but we use these small trees as a finish to our large fruit and vegetable quarters. They are planted 18 inches from the tiles or edging of the walk, 18 inches above the soil, and form a continuous chain from border to border. In some cases the kinds are grafted together, and they are profitable as well as charming in the position noted, forming a neat finish to the quarters.

I do not think the trees, on the other hand, are as prolific as when grown in a more natural position, either sloping at an angle of 45 degs. or quite erect. For amateurs who need fine fruits this latter will be more profitable. Ours are in a measure used for effect and then for cropping. We have a few erect trees which do well, and all our Pears are grown as cordons in an upright form, and these produce fine fruits. With cordon trees there are several advantages. Some kinds fruit so sparingly if given much space, but in a dwarfer form fruit freely; others, again, bear mostly on spurs. These are the kinds best adapted for restricted culture; on the other hand, with cordon trees there must be no neglect, as if growth is left untouched the trees lose their original shape and are unsightly. There must be regular pinching of growth during the summer months; but what is more simple is merely shortening new wood to compel it to form fruit-buds or spurs at the base. A true cordon tree is a mass of fruiting wood from base to top, and, of course, to continue this mode of culture, it stands to reason root growth must be equally restricted, hence the necessity of a dwarf-stock. The Paradise roots close to the soil, does not make coarse roots, and is well adapted for cordon trees. At the same time it is essential to feed when fruiting freely, as then the tree is building up stores of fruit for another year, in addition to perfecting the crop it bears. By planting cordons one may have far greater variety, and this to the amateur is important, as if one kind fails to fruit—it occupies so little space—it is less felt than if one large tree covering a large space failed. Again, in cordon form trees rarely fail, and a wall is covered so quickly—a single tree may be given 18 inches wall space, at the most

Cordon-trained Apple-tree.

2 feet—and once the planting is done, the after work is simple, merely feeding and stopping; very little nailing or supports is needed. I admit the first cost may be a little heavier, but not much, as maiden-trees are so reasonable, and the double cordon is not costly. It is a splendid mode of culture to obtain fruits in a short time.

There are some drawbacks even with cordons. In some soils the trees grow too strongly, and here is the need for rigid selection of varieties. Grow those with a short growth, not coarse growers, and do not plant too close. Even rank growers can be managed. Our plan is to lift the trees every half-dozen years if they grow too gross, and this causes them to be more fruitful. By the term lifting I mean forking up carefully, cutting away any gross roots, and replanting. As regards position on walls, these trees do well anywhere. I do not advise the south or west in southern localities, but east or north. On the other hand, splendid fruits can be grown in open quarters, or even when trained against a fence; indeed, this latter may with advantage be practised, as grown in the form of an espalier they are ornamental and profitable. Any bare wall may with advantage have the spaces filled in with cordon trees, and in the north or colder districts cordon training has great advantages, as the wood is better matured and the crop more certain. Those trees on the Paradise being shallow rooters do well in shallow soils or those deficient of food, as it is an easy matter to give liquid-manure and mulch freely. W.

THE KITCHEN GARDEN.

NOTES ON ASPARAGUS.

The autumn treatment of established beds of Asparagus is a matter on which opinions vary, more particularly on the question of manuring or otherwise. On some soils and in some situations autumn manuring may be admissible, though I do not think it advisable. The use of stimulants just at the time when the plants are going to a well-earned rest appears to me to be on a par with giving any plant one soaking of water, sufficient to encourage the formation of new rootlets in a time of drought, and then leaving this root growth to perish from want later on. On cold, heavy soil autumn manuring is decidedly dangerous when followed by a winter in which severe frosts and wet thaws are frequent. My own practice with beds in autumn is simply to cut off the top growth when this has turned yellow, leaving sufficient length of stem to indicate the position of each stool, and then to clean over the surface with a hoe if the soil is sufficiently dry, or by hand-weeding when hoeing is not practicable, leaving the beds thus until winter is over. In any case it is well to slightly break up the surface of the beds with hoe or fork, but not deeply enough to injure the crowns or roots, as the soil does not remain in a sodden state so long after rain when the surface is kept loose and open. In cutting off the tops, care should be taken not to allow the ripened berries to drop on to the beds; the tops should be taken off the plot in armfuls as they are cut and not laid on the beds, as is sometimes done, until the work of cutting is finished, for seedlings, if allowed to develop, choke the older plants and help to cause the puny heads which are frequently seen on long-established beds, which would, but for being crowded in this way, produce growths as fat as those on their younger neighbours. All the care taken when planting to give each stool ample room is only wasted when seedlings are allowed to spring up at will. Before cutting over the growth made on beds planted or sown this year, it is advisable to look them carefully over, and mark with a stick any blanks which may have occurred, for it will then be possible to refill the blank spaces when plants in the reserve ground are ready, without any hesitation as to whether they are really blank stations or only contain laggard plants. Should it be desired to save seeds for future sowing, these should be saved from stout stems which have borne only a moderate crop rather than from those carrying a heavy crop.

Asparagus forcing.—An ordinary hotbed should be made up with manure and leaves inside and around a brick pit or frame which is not heated in any other way, for I find that I get the best results under this system of forcing, except, perhaps, during the most severe part of the winter. A well-made hotbed—*i.e.*, one which generates heat without becoming overheated—will retain its heat long enough to carry each batch of plants through. An ample quantity of leaves or spent manure, say about one-half, should be mixed in with the new stable litter, each layer should be trodden firmly and sprinkled if at all dry, and the bed so built that sinking will be very slight. In about a week after being made up the bed should be ready for planting, first putting on about 3 inches of light soil, then the plants on this closely, but without much overlapping, and then again more soil until the crowns are buried from 2 inches to 3 inches below the surface. Before planting it is well to make sure that the heat will not rise to a dangerous point; if it does, the crowns will get stewed. One or two test sticks should be left in each light, and these must be examined daily until all fear of danger has passed, and if any decided rise takes place after planting, these sticks should be withdrawn and the holes made by them left open, more holes being made if need be to let out the surplus heat. When growth appears, which will probably be in about a week from planting, the pit should be ventilated whenever possible and full exposure to light must be given, unless blanched heads are preferred. Cover the lights with mats on frosty nights, and cut over the produce as it becomes fit. R.

Tomato Freedom.—Seeing "Mr. J. Pearce's" note *re* Tomatoes in Gardening,

September 25th, I consider 4 lb. of fruit per plant for Freedom a very poor return, although something must be allowed, as they are grown in pots. I discarded pots some years ago, and use nothing but boxes 18 inches square and about 12 or 14 inches deep, one plant in a box. On turning the plants out into the boxes I only just use enough compost to cover the roots, ramming the soil very firm. As the plants progress I fill up remaining space with good rich top dressings, but never put more than 1 or 2 inches on at once. By these means I get a nice steady growth, which is bound to produce fruit. For manure-water I only use that made from sheep's dung, and a watering of nitrate of soda about once a month. I consider a good form of Freedom very hard to beat; it is the freest-setting Tomato I have grown, my plants setting 10 bunches and upwards per plant. The bunches average 12 to 15 to each plant, and are of even size, perfectly smooth, and first-rate flavour (I enclose you a photograph of a fair-sized bunch, should you care to use it). I consider a good form of Freedom and Ifield Gem two of the best Tomatoes ever sent out.—F. H.

*** With this interesting note we received a photograph of Freedom variety, but will our correspondent kindly send his address?

Tomato The Cropper.—There is no doubt about the value of this Tomato as a free-setting variety, judging by the fine show of fruit now to be seen at Ryecroft Nursery, Lewisham. A house about 250 feet long is almost exclusively, on one side, devoted to a trial of this sort, and the crop is remarkable. Many bunches have between ten and twelve fruits upon them, and these are of a most useful size. This variety was obtained from the result of a cross between Conference and Perfection, and it partakes of the free-setting characteristic of the former with medium-sized fruits. The fruits are rather deep, and possess a very delicate skin, while the flavour is all that one could well wish for.—D. B. C.

Exhibition Potatoes (*T. O H.*).—What might be classed as second early White Kidney Potatoes from rather a weak exhibition section. So many of the finest or more recent issued varieties have been of that intermediate form—neither round nor kidney. Because of this we have often urged that the old distinction of the kidney and round, which, after all, are rather meaningless, should be abolished, and that the classes should be for whites and coloured varieties. As it is, we commonly see at exhibitions, especially cottagers' shows, the same varieties staged in both classes of kidney and round. However, to come to the subject of your question, the handsomest and finest generally of early kidneys are White Beauty of Hebron or Duke of Albany, and Early Puritan. Both these, however, have great resemblance to each other. When well-grown, handsome, bright, and of good use, they are as good for second early exhibition as are any others. Two other good Potatoes, both early, are the Ashleaf Kidney and Duke of York. These both have somewhat yellow flesh, but are of high quality and of the true kidney shape. The latter is rather the finest, and is, when well grown, good for exhibition anywhere. Then later comes Reliance, a long and handsome white kidney, and a fine cropper. This is a variety that is ripe by the end of August; it should suit your purpose admirably. Another capital one is Cosmopolitan, also ripe end of August, a broad, flattish, and handsome kidney. For latest purposes, say end of September, Up-to-Date, The Bruce, Chancellor, and the Canon are capital. Rather than starting seed sets in a warm kitchen, it would be better to place them in boxes in a frame or greenhouse, where natural warmth would suffice to start growth, yet being in ample light would keep it green and hardy. Plant only one shoot to each set.

Parsnip Tender and True.—At the flower show held at Reading on September 1st, when there were exhibited some of the finest collections of vegetables ever seen, Parsnips were presented unusually good for the season. None, however, equalled the dish of nine of the above varieties, sent from Lockinge Gardens, for beauty and whiteness, and these attracted everyone's attention. Whether the extreme whiteness was due to variety or culture, certainly the stock possessed the merit, without being unduly large, of having good shoulders and fleshy stem, about 12 inches in length, whereas other and larger examples were too tapering, and had such extreme length of inedible roots. There has long been need for a change in the form of Parsnips presented on show tables, as very long and large roots are distinctly unsuitable for table. Those that, while medium-sized and handsome, have very white, clear skins and ample flesh, rather than long root core, are so much the best.—A. D.

LILIUM CANDIDUM.

The white Madonna Lily, emblematic of purity, and one of the finest of our garden flowers, is endeared to us especially by old associations. The "Lilies" of our childhood were Madonna Lilies; the Lilies we saw in pictures or read of in books were the same, or were unhesitatingly classed as identical. In the old manor-house and rectory gardens, with their sun-dials, sombre Yew-hedges and ancient Mulberry-trees, the White Lily grew in stately lines, while in the cottage gardens the clumps flourished of yore as they do in the present day, for there is no site where the fair Lily of the Annunciation shows such perfection of beauty as in the gardens of the poor. In such gardens, soil and situation seem to have but little or no effect, for in sunshine and shade, in light and heavy soil, in dry and damp positions, the Lilies seem equally contented. To account for this, the pretty conceit has been suggested that the Lily, following the example of her whose name it

Madonna Lily (Lilium candidum).

bears, loves rather to brighten the lives of the lowly and needy than to add its charms to the pomp and circumstance of the rich.

In almost all the allusions of poets to the Lily, the Madonna Lily is evidently indicated. Shelley's

> "Wand-like Lily that lifted up
> Like a Mænad its moonlight coloured cup"

is, without doubt, the Lily in question; so are the "Lilies fair, the flower of virgin light," and "the milk-white Lilies that lead from the fragrant hedge." While the individuality of the flower that was in the writer's mind when the following verse was composed admits of no doubt—

> "And the stately Lilies stand
> Fair in the silvery light,
> Like saintly vestals, pale in prayer;
> Their pure breath sanctifies the air
> As its fragrance fills the night."

The Madonna Lily's beauty is so pre-eminent that it retains its claim to be queen of the garden, even though its blossoms come at that midsummer time when Flora showers her gifts with lavish hands. All too short is its season of beauty, during which the tall, white flower-spires are in perfection, and which, in the dewy summer twilight, fill the air with perfume. For indoor decoration no flower can be used with better effect, yet one is chary of denuding the Lily-bed of even a portion of its charm, and of diminishing even infinitesimally the fragrances of the open air. S. W. F.

Perennial plants (*Ignoramus*).—Never dig between in such a flower garden as you describe. Keep off weeds by hand pulling and very shallow hoeing.

SOME SIMPLE PROPAGATORS.

(Reply to "G. W., Hanley," and others.) More than one correspondent has asked us how to make a propagator. Unfortunately, none of them have said what class of plant they wish to propagate. To meet the desires of the many, we now give a few hints upon the formation of cheap propagators, but as to what heat should be maintained this must perforce depend upon whether one is propagating a cool greenhouse subject or a plant revelling in a strong stove temperature; therefore we leave that part of the question alone; but if readers will ask questions in case of any difficulty, we shall be pleased to reply briefly through our correspondence columns. It is not our intention to go into elaborate propagators—these can be purchased at less cost than it would take to make at home. Our object is to point out a few practical ways of making a cheap one in the ordinary amateur's greenhouse. No propagator is of service as such unless we can keep it close, and ventilate at pleasure. Where a house is heated by hot-water pipes the matter is very simple.

No. 1.—If you can fix a piece of zinc, tin, or galvanised iron to rest upon the pipe, supporting this at each side and blocking in the pipe as far as possible, you will secure the necessary bottom-heat. The length of the propagator will depend upon room and your requirements. Now fix pieces of board so as to form a box some foot or so deep, and above the warm bottom already secured. If only a narrow box, it will be easy to cover with a few sheets of glass, such as are used in glazing the house; but if wide, then adopt the plan we will presently describe in propagator No. 2 and 4. Place a layer of Cocoa-nut-fibre in the bottom of the box, keep this fairly moist, and then half plunge the pots of cuttings in the fibre. It is astonishing what a uniform heat, ranging from 60 degs. to 80 degs., can be obtained thus, regulating this by more or less ventilation, obtained through leaving a little space between the squares of glass. It is so easy to remove a pot; all one needs do is to lift one or more squares, and there is full access. You need not fear too strong a heat, even if the tin or iron rested upon two pipes, as the latter being round only a very small portion is upon the hot pipes. In almost all greenhouses so heated it is not difficult to fix a contrivance upon the above lines.

No. 2.—This is to be used where a side bench or border can be had, under which one or more hot-water pipes run. The width is immaterial. Nail four pieces of wood together, so as to make a miniature frame. Let the gables or ends be brought up in the same way as a span-roofed house. Along the top of this nail a narrow piece of board, reaching from gable to gable. Along the side boards inside, and an inch or so below the top, nail a small fillet or strip of wood. This is to rest the bottoms of the sheets of glass upon, the tops leaning against the board joining the two gables You can have what pitch and width you like. It is merely a question of height and size of glass If your glass is too short, let the centre board be wider. Nor is it at all necessary that the glass should fit, as you can let them overlap, and can also give just what ventilation you choose. Here, again, it is very easy to remove any pot or pan. It is also a very simple matter to divide such a propagator, and to have one for hot and one for intermediate subjects, all that is necessary being to divide with another fixture similar to the gables. This will also strengthen the whole very much, and avoid breakage and strain from resting the hand upon the pitch board, a thing one is often tempted to do.

No. 3.—This is practically the same as the last named, except that we now fasten a strip of wood at the back of the wall or bench, and convert our propagator into a miniature lean-to.

No. 4.—Where there is not the help of hot-water piping a deep, inverted box may be used, cutting away a large enough hole in the side to admit of a small lamp being inserted. Nail up a few pieces of thin board around the upper sides of the box, and arrange for glass to be fixed in one or other of the ways previously shown. If this is at all difficult simply tack a strip of thin wood across the top. The glass can rest upon this, while the slight ventilation afforded at the sides will be a great safeguard against scalding and overheating. Cocoa-nut-fibre must be used at the bottom, and care

taken to keep this moist. By fixing a piece of tin or zinc upon the bottom of the box you will avoid any danger of the lamp setting fire to the wood, and at the same time distribute the heat more evenly.

These are only a few rough plans that have been followed by the writer, and who can assure readers that they have been even more effectual and satisfactory than many elaborate constructions. The mere fact of keeping the subjects close in a greenhouse, and thus avoiding the outside influences and all danger of very cold glass, is enough for the propagation of many greenhouse subjects.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1868—**Colouring large garden vases.**—I should be much obliged if you could give me a recipe for colouring large garden vases? They are new, unglazed fire-clay (fired), and I, of course, could coat them with linseed-oil, and then paint with ordinary paint of shade desired; but I think plants would thrive better if the vases were coated with some porous medium that would not blister or cake off with sun or damp from soil contained. Any suggestion with thanks.—J. D. Hepworth.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1869—**Stephanotis in fruit** (*Mrs. C.*)—It is not at all uncommon for the Stephanotis to fruit.

1870—**Tomatoes unsatisfactory** (*Picotee*).—Give more ventilation. Your atmosphere is not dry enough.

1871—**Fruit and vegetables** (*Old Reader*).—We know little of the place mentioned, but our advertising columns should help you.

1872—**Seedling Hollyhocks** (*Ignoramus*).—If you can put the plants into a cold-frame they will be much safer. Plant out next March.

1873—**Lilium auratum** (*Ignoramus*).—You had better lift the Lilium, unless your ground is well-drained and the position sheltered.

1874—**Rooting Ivy** (*A. G. Lamb*).—Both autumn and spring are equally suited for rooting Ivy slips, and they like a damp position.

1875—**Potting Dwarf Roses** (*Enthusiast*)—If you refer to a recent issue you will find an article upon pot-Roses which will give you full information.

1876—**Begonias in beds and pots** (*F. J. White*).—Lift the Begonias and store free from frost as soon as they have begun to die down, repotting the tubers again next March.

1877—**Streptocarpus in winter** (*E. C. Cartwright*).—Streptocarpus do not need rest from growth. They will continue to grow and flower all through the winter if you afford a temperature of 60 degs.

1878—**Name of fungus** (*C. M. Smith*).—The fungus is not a Truffle, but a kind of Puff-ball named Sleroderma vulgare. It is not edible—notice the rank, offensive odour.

1879—**Passion-flower and Clematis** (*Brickendon*).—Both are hardy subjects, and may be left alone all winter, merely cutting out dead wood in the spring. We do not recognise the name of your Clematis.

1880—**Plants not flowering** (*E. A.*).—No doubt too rich a compost is the chief cause of few blooms. We do not see how you could improve upon the selection of plants, excepting to include Begonias and Fuchsias.

1881—**Tuberous Begonias and Cyclamens from seed** (*C. H. S., Reading*).—Pot them on next February, or early in March. Ordinary greenhouse treatment will suit them during the winter months.

1882—**Carnations unsatisfactory** (*E. J. L. Costead*).—You have spot upon your Carnations. Keep the atmosphere a little drier, and dust with a little flowers of sulphur.

1883—**Begonia semperflorens and Scarlet Lobelia in winter** (*Burwell*).—Lift the plants and store beneath the greenhouse bench, placing them into some sandy compost and keeping them rather dry.

1884—**Strawberries unsatisfactory** (*West Meath*).—You have probably got a bad variety of Strawberry; the lime and loam would not conduce to more fruit; far better set in some fresh runners, and do this as soon as possible.

1885—**Wintering Bedding Geraniums** (*F. J. White*).—Pot into a sandy compost, and keep them in a light room. A dark cupboard would not suit Zonal Pelargoniums. You should have no difficulty in saving them in a spare room free from frost.

1886—**Ensuring moist heat** (*Old Subscriber*).—Why not put Cocoa-nut-fibre upon the staging? Your bench is probably too dry, and if plants do better upon the fibre it would be an easy matter to make the bench so as to hold more.

1887—**Weeds in pond** (*R. W.*).—We can hardly think it is Duckweed growing so strong as you mention, nor have we ever known this weed to be injurious to fish. There is no better way of ridding ponds of weeds than by constantly raking them out.

1888—**Tuberous Begonias changing** (*T. Clark*).—We cannot understand your divided Begonias turning out single flowers if they were double varieties in the first place. Seedlings vary much, but we never found Begonias from cuttings and division vary from the original stock.

1889—**Heat in propagator** (*X. Y. Z.*).—Our correspondent sends this as a "repeated query," but it has been replied to before. We asked what class of plant he proposed propagating, and until we know that, it is quite impossible to give the "correct heat to be maintained."

1890—**Treatment of Diplacus glutinosus** (*Inquirer*).—Prune back the Diplacus slightly, and repot when it has flowered. It is propagated by cuttings of young growth in April. Follow the same plan as we describe and illustrate for Fuchsias in our issue for March 27th.

1891—**Lilium lancifolium dying** (*Inquirer*).—After doing so well as to give over forty blossoms upon each bulb, we fear your Lilies will be too exhausted to do much the ensuing season; but you can do no harm in following out the instructions in our recent article.

1892—**Boiler in greenhouse** (*Breck*).—For obvious reasons we do not recommend one stove over another. Look up the advertisement. There is no reason why you should have the larger boiler in use for so small a section of your house, especially as Tea-Roses need heat but a few months in the year.

1893—**Cutting Holly-hedge** (*Wulfrum*).—Shorten the hedge in April; you will then soon get more foliage. It is immaterial whether chopped or sawn, so long as the cuts are made clean. You might thin out the Hawthorn at the same time, but leave as much young growth on as possible.

1894—**Wintering Stocks** (*T. B.*).—Put them in the cold-frame if your position is exposed, but not otherwise. We do not quite understand if you mean pricked out into pans or into the border. In the first place, we would certainly winter them in the frame in a cold locality like yours.

1895—**Hydrangea in tub** (*W. Abbott*).—The winter will probably do the necessary pruning, but you can cut away dead tips in spring. Place a few ashes or Cocoa-fibre over the crown when frosts come, and stand the tub in a sheltered place outdoors. This will be better than taking it under cover.

1896—**Diseased Celery** (*D. Lock*)—The Celery is eaten by wireworm, through the land being infested with it. In may have been brought in the manure you have used. You can do nothing now, but when the crop is off dig up and dress the soil freely with gas-lime, leaving it there throughout the winter.

1897—**Pruning Clematis montana** (*S. A. H.*).—Clematis montana flowers upon the old and ripened wood. You must not prune this, nor does the variety ever form a bushy plant well clothed to the bottom. It is seen at its best when rambling among an old hedge, or over rough roots, etc. You cannot have it so well furnished as you evidently desire.

1898—**Hyacinths, etc.** (*Dr. Bruce*).—Much will depend upon the heat and attention given, but the end of February or early March would be a good date. They could be forwarded, or retarded, so as make a month's difference in arriving at full beauty. Tulips would be much longer than Hyacinths in coming into bloom, probably another three weeks.

1899—**Best large-flowered Clematises** (*A. E., Norwood*)—Henryi and Otto Frœbel are two good and large-flowered Clematises. We expect you mean the Dutch Honeysuckle. Tropæolum speciosum needs a cool and partially-shady position. Ceanothus, Cotoneaster, and Passion-flowers would probably suit your purpose best.

1900—**Creepers for house** (*G. P.*).—There is nothing better than Ampelopsis Veitchi for your purpose. A Rose would be some time covering so large a space, and would also need much nailing to secure against the strong winds. But the Ampelopsis would cling without any help, stand the wind well, and always have a pretty appearance. Put in three plants.

1901—**Pear-tree** (*A.*).—Colmar d'Eté is a prolific bearer, but fruits are very small. A child's Pear, ripe in September. We should much prefer Williams' Bon Chrétien, a fine and good flavoured Pear. Durondeau is a very good and a handsome Pear, ripens in October. Beurré de Capiaumont is a good market Pear, but poor in quality. Louise Bonne of Jersey would be a far better variety.

1902—**Treatment of Scarlet Gladiolus** (*R.*).—It is fortunate you sent a leaf of your plant. It is decidedly not a Gladiolus, and we are almost certain it is a side leaf of a Lilium. If you planted these so late as March, you would get no bloom, and the bulbs would now be pushing up as you describe, especially as you gave no water. Leave them to take their chance; except to partly cover with ashes or Cocoa-nut-fibre should hard weather set in. They may flower next summer.

1903—**Market Pears** (*Market Gardener*)—It is very difficult to have Pears from standard trees of any table merit in December. Even in November fruits seem soon to be over, for if kept in a very cool place to preserve them the fruits soon lose flavour. Whilst so many good Pears do well trained on walls or as pyramids on the Quince-stock, so few do well on standards. The best for market purposes other than well-known early sorts are: Alexander Lambre, Louise Bonne of Jersey, Beurré Diel, and Josephine de Malines.

1904—**Planting bulbs on Grass slope** (*Daffodil*).—Do not use Tulips, but confine yourself to the many pretty Daffodils, Dog Violets, and Snowdrops. They are more in keeping, and are more permanent. Plant without any attempt at regularity, and so secure a pleasingly natural effect. Simply take out a small, three-cornered piece of the turf and set the bulbs beneath. Replace the turf carefully. The bulbs will force their way through this quite as easily as they do year after year in a natural state. We would prefer Mrs. W. J. Grant to Cramoisé Supèrieur.

1905—**Pears for walls** (*W. A.*).—Six fine wall Pears are Citron des Carmes, first early; Williams' Bon Chrétien, second; Marie Louise, third; Louise Bonne of Jersey, fourth; Doyenné du Comice, fifth; and, latest, Easter Beurré. There are many others—especially midseason varieties—but this is a good selection. Good wall Plums are: Transparent Gage, Green Gage, Oullin's Golden Gage, and Coe's Golden Drop; for flavour and for cooking, Rivers' Early, Czar, Victoria, Monarch, and Archduke, all fine and coloured. East and west walls are best for Plums, but Victoria does well on a north wall.

1906—**Plums casting leaves** (*E. H.*).—It seems very evident that your Plum-trees suffered from drought in the summer, thus causing very early leaf castings. You do not say how long they have been planted? Have the soil around them lightly forked up to loosen it, as clay soils bake so hard, and in that way alone do great injury to the roots. Then add about the roots a little barrow-load or two of fresh soil. Also give over the roots in the spring a coat of manure, and if it be dry an occasional soaking of water to induce good, strong growth and surface rooting. Give fresh mulching about midsummer.

1907—**Clothing wall** (*J. A. G.*).—We should have thought that with 6 feet of bare wall on a north aspect, under your large trained Pear-tree, you would have liked to grow some Tomatoes in the summer, as it is a capital site. A few Peach or Apricot-trees might be planted and trained to fill the space. If you prefer Roses you could have Climbing Niphetos, Crimson Rambler, W. A. Richardson, or Cheshunt Hybrid, or indeed, any good Tea Rose would do well there, that were not climbers, such as Catherine Mermet, Homère, Mme. Lambard, or if preferred, any good Hybrid Perpetuals that would grow tall if kept nailed. Teas, however, would, on the whole, do best.

1908—**Fruits for north wall** (*Subscriber*)—Very few kinds of fruits do well on a north wall, as a rule, but you are in a rather warm part of the kingdom, Somerset. The very best of fruits are Morello Cherries, those trained fan-shaped and kept clean thrive and fruit wonderfully well. Next comes the Victoria Plum, which does admirably. So also will the Czar, if the wood can be induced to mature. Of Pears you may try Catillac, the fine stewing variety, and such fairly good sorts as Williams' Bon Chrétien and Louise Bonne. Some fairly early Apples should do very well also. So also will Red Currants and Gooseberries.

1909—**Vine border** (*Luke H.*).—Remove top soil from your present border, lift Vine-roots carefully, and tie them up in mats to protect from wind; then excavate soil to an entire depth of 2 feet. Break up the bottom and leave it, adding on top a few inches of any rubble; on that lay turves, Grass downwards, then get turfy-loam well chopped up, but not fine. Mix with it equal quantity of soil from vegetable quarter, add one-eighth of lime-rubbish, well-broken, wood-ashes, and crushed bones. Place in 12 inches and tread down moderately, and relay Vine-roots, so that when covered they be not more than 6 inches below the surface.

1910—**Grass-lawn** (*Inquirer*).—As the Grass on your recently-made lawn is dark green, we cannot call it unhealthy. Rather it seems to be somewhat gross. If it were pale or yellowish then we should regard it as unhealthy. In mowing and rolling it frequently you seem to have done the best you can for it, and in wishing to give it a dressing, should say that not much manure is needed. The best dressing, which may be applied anywhere during the winter, but not later than February, so that it may get well worked in, would be road-grit or trimmings, well decayed and frequently turned, mixed with some wood-ashes, fine coal-ashes, and a little soot. A good Grass manure (if obtainable your way) is British or native guano, and it is cheap.

1911—**Barked Apple-trees** (*E. F. B.*).—We sympathise with you appreciably in the injury cows have done to your standard Apple-tree stems in an orchard in entirely stripping off the bark around to the depth of from 8 inches to 9 inches. Had but 2 inches or 3 inches of the bark on one side been left the trees would have continued to live, but the total stripping round is almost certain to produce death. We know of nothing that can be done in such a case. No sap can pass below the severed top bark and thus the functions of nature are suspended. It will be well to place mesh wire-work round the stems of other trees in case the cows attack them. Cows, like horses, once they taste bark seem to have a great liking for it.

1912—**Seeding Celery-plants** (*S. S.*)—The proper way to seed Celery-plants is to put out some of the ordinary variety into a bed in the open ground about July. Plant at 15 inches apart with no intention to blanch, as that is undesirable. The plants should stand all the winter very well unless unduly severe. If it is, some protection may be given to the plants by laying over them—resting on stout wood supports—Wattle-hurdles, and on these throw some straw, or Fern, or Heather. When the winter is over, and the protection removed, the plants will soon start off to flower and seed. The plants you have in pots, if kept all the winter in a frame or greenhouse, may be planted outdoors in April, where they will seed well during the summer.

1913—**Cucumbers uneatable** (*Constant Reader*).—How are you growing Cucumbers? In a heated house or on a manure-bed, under a frame? If in a house, then giving

more warmth, say an average temperature of 75 degs. of heat, should help to bring your plants into proper fruiting condition. If they are in a frame, then the plants are suffering from a low temperature, and roots cankered, or gumming, because they have got into the sour dung. Unless you can keep up an equable and sufficient warmth, especially at this time of the year, when we get so little sun heat, it is useless to continue growing them. With ample warmth Cucumber fruits grow quickly and are sweet; but with a low temperature, and the soil cold and wet, perhaps getting exhausted or sour, the fruits grow slowly and are uneatable.

1914—**Figs** (*Eaton*).—Your Fig, judging by the description given, is the Brunswick. It is a long and high-flavoured variety, and one of the best for culture outdoors on warm walls. Perhaps your tree in greenhouse is not yet sufficiently old to fruit well? It is a mistake to induce a very free growth. When roots are more confined and coarse-wood growths checked, then fruits come freely. Unless you can give the tree good warmth early and late, you cannot get two crops in one season. The present buttons may be removed, and cut out all bare shoots, laying or tying in those having most leaves and likely to bear fruit next year. In the summer keep the air rather close and mulch with manure. You do not say how the tree is trained—whether on a wall far from the light, or on a trellis near the glass.

1915—**Fig-trees** (*Vers Ne*).—Fig-trees in a cool orchard house will not ripen more than one crop of fruit during the season, whereas, in a proper-heated house they will produce practically three crops, if ample warmth be furnished. Probably the fruit now falling, of which a sample is enclosed, are the ordinary third or late crop that for lack of warmth will not ripen. They are, in your case, valueless. Your tree too may get none too much of sunshine, also may be too much watered and growing too grossly. Presumably it is planted out, but that is not stated. Then cut out any bare shoots so as to give the young ones of the present year all possible light and air to enable them to ripen, and if you will wait patiently, you may get a good crop of fruit next year, especially as Figs fruit better as they get older.

1916—**Auriculas dying off** (*R. S*).—Your plants have been kept too dry or too wet. Several trade growers advertise young plants early in the spring; look through our pages at that date. Sow the seed as soon as ripened. We presume you are alluding to the alpine varieties, which flower in March and April? The seed should be sown upon shallow pans of well drained soil, consisting of turfy loam, leaf-mould and coarse sand in equal proportions. Keep close by laying a sheet of glass over the top, and prick off as soon as they can be handled. By no means do away with the seed-pan, as some will germinate in a month or two, while others may not even come up until the next spring. A cold pit is the best place until winter, when a cold greenhouse will suit. Good loam, one half, and the remainder made up of well-rotted cow-manure, leaf-soil, and sand, make a good compost.

1917—**Runner Beans** (*Vale of Clyde*).—Your statement that Runner Beans are rarely grown about Glasgow, and never eaten as a green vegetable by the working people, reads oddly to southerners who grow these Beans so largely and consume them so liberally also. But it may be due largely to difficulties of culture in your northern district. We suggest that these Beans should be grown on the south aspect of house, wall, or fence, and trained up to them either with the aid of string or long sticks. Before sowing seed a trench, 2 feet deep and as wide, should be opened all along where the Beans are to grow, the bottom of the trench well broken up, then a good dressing of manure added to the thrown out soil, which should be mixed as that is returned to the trench. The Beans should be sown ully 9 inches apart the third week in May, and, if needed, protected at night until danger from frost is over. Best of All is a very fine strain.

1918—**Planting fruit-trees** (*Limerick*).—We should certainly advise you not to plant Rhubarb among the fruit-trees and bushes, as it is so exhaustful of the soil, and necessitates so much treading the ground. Keep it quite away elsewhere. Bush Apples on the Paradise-stock, if you do not want to thin and replant later, should be fully 2 feet apart, as by the time the trees get 6 feet to 7 feet through, they have none too much room. Plant in rows that width apart, the trees in the rows being angled, as you understand. That will give still more room. Then you can plant now one Gooseberry-bush between each Apple in the rows, and one row all down between the rows at 4 feet apart, filling up the ground for three years with Strawberries. After Mr. Gladstone Apple, the best is French Peach, then Worcester Pearmain, then Cox's Orange Pippin. Souvenir du Congrès Pear does well as a pyramid or standard over here certainly.

1919—**Diseased Apple leaves** (*East Anglia*).—Had you not referred to diseased Ash-trees near your garden, we should have assumed that Sycamores or Oaks diseased were near, but the natural assumption is that the disease on Apple and Ash is identical. When the leaves of all diseased trees fall burn them. Do not allow them to be decayed and used as manure, as that propagates these fungoid pests wholesale. Perhaps decayed Ash-leaves may have been used to dress your fruit-trees? When the leaves have all fallen make up a solution of 2 lb. sulphate of copper, 2 lb. of fresh lime, and 2 lb. of coarse treacle Soak the sulphate of copper all night in a wooden vessel, or cask, in boiling water to dissolve it, add the lime-water and treacle next morning; add 10 gallons of water and gently spray the trees and so kill resting spores. Do this again just before the buds burst in the spring. It is a dangerous solution to use when trees are fruiting.

1920—**Standard Victoria Plums** (*E B.*)—That a complaint as to Victoria Plum-trees, five years planted in the county of Kent, very early shedding their leaves and showing great evidence of gumming, is made, is surprising from that quarter, because Plums, as a rule, do well. Still, they do like a chalk base better than one of gravel. The case seems to be one of soil poverty, and we suggest as the best remedy that you at once have the soil opened out round the trees, carefully lift them out, and severing all roots down right, neatly trimming all others that have ragged ends; replant as soon as possible. Remove some of the old soil of the holes and replace with fresh, then plant as shallow as you well can, but having several inches of soil over the roots. Some thinning may be done to the head, and the trees for a time should have supports. Give each tree a mulch of long manure about the roots. Some lime may be mixed with the soil when planting, also wood-ashes.

1921—**A poor garden** (*A. G. V.*).—That your garden is sheltered by high trees on east, west, and south-west sides, leads to the inference that it suffers from too much shelter and too little sunshine. If you could reduce the height of the trees so as to get more sun and air, great good might result. Your soil being of a sandy nature would be easy to warm and fairly fertile. That it is infested with worms rather shows that it is not poor, as these exist chiefly where there is plenty of vegetable matter, such as leaves, straw, which they can digest and then expel in the young worm-casts, which are really plant food. Wait until the tree-leaves have fallen, then distribute them equally over the ground, and add a dressing of half-decayed animal manure. Then trench the ground by opening at one end a trench 2 feet wide, and the same depth, throwing out all the soil, then deeply breaking up the bottom and leaving it. Throw in the top spit of the next trench soil, dig in leaves, and break up the bottom of that, and so on until all is finished.

1922—**Vines** (*G. P. S.*).—That your Hamburgh Vines are seeding well shows that culture and border are fairly good for them, but the Lady Downes Vine had no doubt for some reason or other got stunted and did not fruit until you carried up a new rod. But you did wrong in allowing it to fruit so heavily. Ordinarily, any good grower would not let it carry more than ten bunches, and unless it is a strong rod that would be too heavy. No wonder the Grapes are set unevenly. Foster's Seedling doubtless wants more warmth, and has probably been exposed to a cold draught. Twenty-five bunches seems to be an unduly heavy crop, but nothing is said as to length of rod or how many rods. That aërial roots are forming shows that the proper roots are not doing well. Very likely your berries have shanked from the same cause. Border too sour, or root too deep in it. Manure of a raw nature should not be used in making Vine-borders; the best ingredients are good turfy loam, wood-ashes, and crushed bones. Strong manure soon conduces to sourness. A narrower border, too, will be better.

1923—**Peach, Pear, and Vine** (*Girder*)—You have certainly introduced a novelty in correspondence in sending in photo.'s of trees, with respect to the pruning of which you ask for information. With respect to the Peach-tree in a pot, and 2 feet in height, you will have to prune back quite 12 inches, so as to induce the breaking out of at least two, or perhaps three, good shoots from each stem next spring. Then you will lay the foundation of a neat bush-tree; or if you plant it out against a wall, then you can train it fan-shaped. It may be some time, however, before it fruits, as it is a seedling, and may prove also to be of little value. With respect to your Pear-tree having a single stem 2½ feet in height, if you propose to train it to a wall, cut it back to 15 inches, and induce it to break three shoots next spring, to make a foundation for the tree. If to be a bush-tree cut it back till about the same, and you can make it what you wish. As to the Vine, that will only fruit when you get from it a strong rod. To have that, cut it down to one strong eye or bud, about a foot from the pot. It will need plenty of feeding.

1924—**Tulips a failure.**—I have for many years grown bulbs pretty freely. Of late years, notwithstanding change of soil, many of the Tulips in particular fail to come up, leaving the beds irregular. In the case of groups of five or six bulbs planted in the borders—one group will be perfect in the flowering season, and the next a failure—on examination these often present a wet, slimy appearance. We only discover a few wireworms occasionally in digging; certainly the garden is not infested with them. I refer to newly purchased bulbs for which a good price is paid. Is there a remedy? I may add that my Hyacinth-beds are always satisfactory, as is the case also with Polyanthus Narcissus.—Blanc.

*** *We have no doubt some pest is the cause of your failure with individual groups, seeing others do well. Slugs seldom eat Hyacinths, but are greedy devourers of Tulips. Could any reader of* Gardening *help our correspondent?*

1925—**Echinopsis Eyresi.**—Should young plants of this Cactus be removed or allowed to remain on the old plant?—X. Y. Z.

*** *There is no necessity to remove these offsets, unless you wish to increase your stock.*

1926—**Blue Lobelias in winter.**—Will you kindly tell me how I can keep some blue Lobelia roots through the winter? I have no greenhouse or garden lights. I inclose a little for you to see. I do not know if I have given it the correct name.—F. Holloway.

*** *Yes, it is the Lobelia that you send. Place a little light sandy soil around the plant, after cutting it down to within 2 inches or 3 inches. In a fortnight or so lift and part off by pulling the crown to pieces. Each piece will have a few new roots. Set the pieces into pots or pans and keep them in a warm window until spring, when they can be parted once more. You would do better by purchasing a few seedlings next April. They are very cheap, and as you have no frame or house we would advise you to follow that plan.*

1927—**Hiding low wall.**—I want to cover or hide a low wall as quickly as possible. It faces north-east. Can you tell me of any creeping plants—not Virginian Creeper or Ivy—that will grow and do well? And is this the time for planting? I thought Oratægus Pyracantha might do?

*** *Ceanothuses would be better than Pyracantha. You might also try such Roses as Rêve d'Or and Félicité Perpetué.*

1928—**Muddy stream.**—I have a small stream running through my garden which is constantly being silted up with mud, which is brought into it by a smaller stream (a mere ditch). I have to clear this mud out about once in two years, every year would be better. What use can I make of this mud? Can you suggest any possible means of keeping the mud out of my stream?—Ladymede

*** *Unless the ditch is shut off from the stream it is difficult to know how the mud can be prevented from polluting the latter Perhaps it would be possible to form a dam at the junction of ditch and stream, over which the water from the ditch would flow, the mud forming as sediment behind the dam. This would have to be cleaned out whenever it got within a foot of the surface, or it would be stirred up as the water passed over the top of the dam, and, mingling with it, would enter the stream. The only other plan that appears feasible is to alter the course of the ditch, and bring it into the stream lower down. The mud that is removed, after being dried, can be mixed with garden soil.—S. W. F.*

1929—**Moving Lilies of the Valley.**—Is this the right time of year to move Lilies of the Valley?—Barna.

*** *Yes; move them directl the leaf dies down.*

1930—**Ashes from railway sleepers**—Will you kindly inform me if the ashes of old railway sleepers that have been dressed with tar or creosote, would be injurious to flowers or Roses, mixed with the soil? If not, what quantity to use? Soil very stiff.—Doubtful.

*** *We have never used such ashes, but the fact of burning the sleepers would do away with all tar or creosote. Use the ashes at the rate of half a gallon to the square yard. You will find soot better than ashes for your stiff soil.*

1931—**Tea Roses and Carnations.**—Will the Editor please name the best varieties of Tea Roses and Carnations for beds on plan marked 1, 2, 3, 4? Should like some rich red H.P.'s, if they would do as well. Carnations, like Old Clove and self colours, liked, and sorts that grow low, so that many stakes are not required.—L. Denning.

*** *You will find Marquis of Salisbury a splendid red bedding Rose. Souvenir de la Malmaison, creamy-white; G. Nabonnand, salmony-pink; Perle des Jardins, deep yellow; and K. A. Victoria, pale lemon-white. These are all good Roses for your purpose. Among Carnations we would select Duchess of Fife, F. E. Thoday, Leander, Raby Castle, Redbraes, and Rose Celestial.*

1932—**Manuring Roses.**—Does good digging and manuring help Roses to throw off mildew?—Dahlia.

*** *No; the disease is entirely dependent upon weather influences.*

1933—**"Geraniums" in tubs.**—I want to fill some large tubs with "Geraniums" to set outside next summer. As I have little help, it would suit me best to put them in the tubs this month when I take them out of the beds. Please tell me whether in this case they would require replanting in fresh earth in May?—C. Irwin.

*** *Far better pot the plants when lifting them now. They will only need a small pot, and can be stood closer together than if placed in the tubs. Why not fill your tub with fresh compost when help is at hand? The compost would not deteriorate, and you could plant in February or March, to grow on ready for the open when warmer weather sets in. In any case, if you put into the tubs now, both tubs and plants would require housing.*

1934—**Palm-plant withered.**—My plant seems fairly healthy, but the tips of leaves keep turning brown. I keep it in a room, and fairly moist. Can I do anything to help it?—Little Toad.

*** *Unless you have one of the more hardy Palms, such as Latania borbonica, they will not do in a room for many months—certainly not in the winter. Palms are so very varied that we cannot reply without some guide as to variety. Other replies next week.*

1935—**Perennials to go with Delphiniums.**—Could you suggest what perennial or perennials could be grown with tall Delphiniums, to bloom later on? I find Delphiniums smother Phlox, Helianthus, etc. When Delphiniums cease flowering and are cut down there is a great blank.—A Reader of Gardening.

*** *If the Delphiniums are kept within bounds there are many perennials that may be grown with them to bloom later; but if they are allowed to overgrow everything, as would seem to be the case from the remark that even such a strong-growing subject as the Helianthus is useless on this account, it is difficult to suggest any perennial that would answer the purpose. If these plants are allowed to become overgrown during their period of growth they cannot be expected to flower well. Michaelmas Daisies, Pyrethrum uliginosum, Chrysanthemum maximum, the Perennial Sunflowers, Solidago ambigua, and Bocconia cordata all do well interspersed among Delphiniums if given sufficient space; while the White Japanese Anemone, Rudbeckia Newmani, and herbaceous Lobelias may be grown in front. All these perennials bloom after the Delphiniums, and will fill the space caused by their absence.—S. W. F.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Jack.*—1, Santolina Chamæcyparissus; 2, Ligustrum lucidum; 3, Helianthemum serpyllifolium; 4, Oratægus Pyracantha; 5, Muhlenbeckia adpressa; 6, Not recognised; Unnumbered, Menziesia empetriformis.——*H. Graham.*—1, Retinospora squarrosa: 2, Retinospora pisifera; 3, Cupressus Lawsoniana; 4, Hoya carnosa; 5, Reineckia japonica var. variegata; 6, Æchmea sp; impossible to tell which without flowers, but perhaps Æ spicata.——*Rev. T. Flinteff.*—Long leaf is Ailanthus glandulosa (Tree of Heaven). Stem with reddish flowers is Symphoricarpus orbiculatus. Crimson-berried, Cornus mas.——*Bridge End.*—Oxalis cernua.——*J. J. Llandrich.*—Lophospermum scandens. It is safer to lift the plant and keep over the winter in a greenhouse. It is not very hardy.——*R. Weatherill.*—The plant is Trachelium cæruleum. We do not recollect contents of previous letter, but presume it was name of plant that you required. ——*J. Brown.*—We do not name Dahlia flowers; the other plant is not a Saxifrage, but Sedum spectabile.——*T. Pratt.*—You are wrong; the Roses you send are undoubtedly Niphetos.——*Manor.*—Your plant is Tecoma radicans, syn. with Bignonia radicans. It is easily propagated by root-cuttings and by pieces of partly-ripened growth. It is quite hardy in your locality.——*W. S. Smith.* —1, Polygonium cuspidatum; 2, Leycesteria formosa; 3, Next week; 4, Spiræa flagelliformis; 5, Phlomis fruticosa; 6, Coronilla Emerus; 7, Rubus odoratus.

Names of fruit.—*R. Hobley.*—1, Lane's Prince Albert; 2, Ashmead's Kernel; 3, King of the Pippins; 4, Warner's King; 5, Bess Pool; 6, Lemon Pippin.——

Garlands.—1, Blenheim Pippin Apple ; 2, Beurré d'Amanlis Pear ; 3, Bergamotte d'Esperen ; 4, Beurré Diel ; 5, Old Colmar.——*A. S.*—The Plum is a poor fruit of Pond's Seedling. ——*Rev. J. Newman.*—The large Apple is Alfriston ; the small one Lemon Pippin.——*Miss R.*—1, Pears, Black Worcester ; 2, Louise Bonne of Jersey ; 3, Apple Old Nonpareil ; 4, Pears, Beurré Sterckmans ; 5, Duchess d'Angoulême.——*W. Morley.*—1, Old Hawthornden ; 2, Cox's Pomona ; 3, Cox's Orange Pippin ; 4, Not recognised, as the fruit was not in condition ; 5, King of the Pippins ; 6, Northern Greening.—— *Flintoff.*—1 and 5, Ribston Pippins ; 2, Blenheim Pippin ; 4, Golden Spire ; 6, Mere de Menage ; 7, King of the Pippins.—— *G. H. Percival.*—1, Marie Louise ; 2, Beurré Bachelier ; 3, Beurré Rance.——*N. D.*—2, Louise Bonne of Jersey ; 5, Swan's Egg ; 7, Duchess d'Angoulême ; 12, Not recognised.——*Lanson.*—1, Cellini ; 2, Adam's Pearmain ; 3, Beurré Clairgeau.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Norman Drew.—Of course, a man who behaves as described in your letter is dishonest. We do not think such practices are common—at least, we hope not.

Catalogues received.—*Roses.*—Messrs. Paul and Son, Waltham Cross.——*Hyacinths, Tulips, and other Spring-flowering Bulbs.*—Messrs. Barr and Sons, 12 and 13, King-street, Covent Garden.——*Autumn in Garden and Greenhouse.*—Messrs. J. Carter and Co., High Holborn. ——*Roses, Carnations, Pinks, and Tufted Pansies.*—Messrs. Dickson and Co., 1, Waterloo-place, Edinburgh. ——*Ornamental Trees and Shrubs.*—Messrs. J. Clark and Son, Crawley, Sussex.

LAW.

Damage by rabbits to market-garden crops.—Two years ago I took five acres of land as market-garden land, and two months later the landlord let the shooting over his park, which adjoins my gardens The shooting tenant makes a living by breeding wild rabbits which overrun the place and get into my garden. This summer I had 1,500 plants eaten by rabbits, and on complaining to the sporting tenant I was told I must kill them. He put some netting round one side, but the rabbits still get in, and he walks over my garden shooting them. Has he a right to do this without my leave? Could the landlord let him the shooting over my garden? Can I treat him as a trespasser?—J. S.

*** Unless the shooting was reserved when the garden was let to you, the landlord could not let the shooting over the garden to anyone, and the sporting tenant who does shoot over it may be treated as a trespasser and summoned before the justices just like any ordinary poacher. If he is so summoned, it will lie with him to prove that he has the right to shoot over your garden. If you have a written agreement of tenancy it will show whether the sporting rights are, or are not reserved ; but if the letting was a merely verbal one, the sporting may have been verbally reserved also. As to this you will however know whether there was such a reservation or not. But if there was such a reservation, the landlord might let the sporting over your garden if he chose to do so. I do not think you have any claim against the sporting tenant for compensation for the injury done to your produce. The law is unjust in this respect, as it allows a sporting tenant to preserve a large quantity of rabbits in a wood adjoining cultivated land and does not make him liable for the damage done by the pests he preserves. But if he brings upon the land a larger quantity of game or rabbits than could under ordinary circumstances be reared and kept on such land, he then becomes liable. Such liability would be very difficult to prove, unless indeed you could show that he had been in the habit of importing rabbits from some other place and turning them down. Your best plan will be to call in the assistance of a professional rabbit-catcher, who with snares and nets, and traps, will soon be a thorn in the side of the sporting tenant.—K. C. T.

Removal of shed.—I am leaving my house, and I have a shed of stone with ends partly of wood, the roof of tiles. The property was sold five years ago, but the shed was new roofed by us before the property was sold. Can I claim the wood and the tiles?—W. G. L.

*** It seems that this shed belonged to the landlord when you took possession, but that you put a new roof on it more than five years ago. If this be so, you cannot remove the roof nor claim any compensation for it. If you put up the wooden ends, and there were no wooden ends nor ends of any kind previously, you may remove them.

Local authority supplying water to allotment garden.—I have, among some allotment gardens, ¾ acre of garden ground in three separate pieces. I have a greenhouse on one piece, and am building another greenhouse on another piece. The soil is sandy, and I suffered much this summer from want of water, and I am thinking of asking the council to fix a tap in the garden against the end of a row of houses which come up flush with the gardens. What rate should I have to pay for either one piece or for all three? Will the council fix the tap and require me to pay the cost?—Water.

*** You do not say who the "council" are, nor under what circumstance are they owners of a water supply. But it is really not material, as you cannot compel the council to supply water, and if they agree to do so (as they probably will), terms will have to be arranged between you. There is no fixed rate of charge under such circumstances.—K. C. T.

Liability for damage occasioned by fall of tree.—I bought a slip of ground adjoining my garden, with three fine Elm-trees upon it ; a year later a man bought an adjoining piece, and built a house a few yards from my land. He makes no complaint nor yet any inquiry, but should one of my trees fall, his house or his chimney will be damaged. In that event, should I be liable?—G. P. S.

*** If the tree were living and healthy at the time of its fall you would not be liable, as it could only fall through some severe storm, or similar occurrence, such as the lawyers call "the act of God," for which no man is liable. But there is a duty cast on all owners and occupiers to prevent any decayed and unsound trees from falling upon a neighbour's land to his injury. If such a thing happens the test of liability will be, was the tree previously in an unsafe state, to your knowledge? And if you could have had the knowledge had you examined the tree carefully, you will be liable.

POULTRY.

Death of chicks (*C. E. J.*).—I do not think it likely that your chicks are poisoned, although, of course, this cannot be decided one way or the other unless the intestines are carefully examined by a chemist. I should rather attribute the deaths to a lack of nutritious food. You must remember that the weather is now extremely cold at intervals ; then we have had a lot of rain, and nothing can be more trying to young birds. There is, therefore, a great strain upon them, and thus meals and Corn which would answer well in the early summer are not good enough now. I am afraid any advice I may give you will be too late, as you say all the birds are affected. My treatment would be to give them soaked bread in warm ale the first thing in the morning, at ten o'clock a little mixed meal (Barley, Indian, and Sharps), at one o'clock some underdone meat cut into small pieces, and at roosting time a handful or two of sound Wheat. In their drinking water give some Parrish's chemical food, or cod-liver oil. Take care that they do not huddle together too closely at night in a badly ventilated coop. Above all, put them in a run somewhere where they cannot be knocked about by older chickens or the adult stock.—Doulting.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Green Tomato chutney (*F. G. Trevers*).—Have ready a saucepan of boiling water on the stove, stick a fork into each Tomato, and dip it for two minutes into the boiling water. As the fruits are scalded they can be put on a dish until all are prepared in this way, then skin them and cut out the stems. Peel and core the same weight of Apples (6 lb. of each) as Tomatoes, put them into a preserving-pan with 1 quart of vinegar, a dozen red Chillies, a dozen Cloves, two dozen Allspice, two dozen Peppercorns, ½ oz. Ginger (pounded), a tablespoonful of salt, 1½ lb. of Demerara sugar — tie the Peppercorns, Cloves, Allspice, and Ginger in a piece of muslin to be taken out when putting the chutney into pots—and 1 lb. of Sultanas. Bring this quickly to the boil, then stir until it is a thick mass like jam ; about three quarters of an hour it will take. Pour into glass bottles that are dry and hot to prevent their cracking ; cover with wet bladder. It can be used at once.—B.

To cook Vegetable Marrows.—Put two Onions, and cut them up small, into a saucepan, with a generous lump of melted butter, two leaves of Sage chopped fine, a sprig of Parsley, and Lemon Thyme. Peel two small Marrows, cut each in half, and put them in the saucepan with the herbs ; close the lid tight, and set the saucepan on a hot part of the stove for twenty-five minutes. Give the saucepan a shake once or twice during the time and turn over the Marrows. Turn into a hot dish and serve with any roast or boiled meat.—B.

BIRDS.

Teaching Parrot to talk (*T. Clark*).—From the description you give of your bird it would appear to be a rose-breasted Cockatoo (Caeatua roseicapilla), a handsome bird, but very noisy as a rule, its yells and screams being at times distracting. It is to be feared that there is no probability of your bird ever learning to talk, and that when it gets used to its new home it will give forth some of its natural notes, resulting in its banishment to a distant part of the premises. It is to be regretted that so handsome a bird should be so deficient in musical talent.

GOOD CHEAP GLASS.

Always in stock, large or small quantities, in the following sizes

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14 by 10	16 by 12	18 by 14	20 by 16	22 by 18
16 by 10	18 by 12	18 by 16	24 by 16	24 by 18

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Note.—*Glass cut to any size at slight advance on above prices, in large or small quantities.* **Special Line.**—8 by 6, 9 by 7, 10 by 8. 100ft. 15-oz., 6/- per box ; 21-oz., 8/- per box. 1/- extra for 3rds. Putty, 28 lb., 2s. Paint, ready for use, 3½d. per lb. Put free on rail in London. Package free. All glass is sent direct from stock at my warehouse (not from wharf), carefully examined, and guaranteed to be in sound condition before handing to railway co. Intending purchasers will do well to consider the advantage of buying direct from stock at warehouse. All glass is carefully packed, put direct on rail ; risk of breakage very slight. Before placing orders with agent, please write for wholesale prices to—**J. B. ROBINSON**, Wholesale Glass Merchant, **31, Moor-lane, London, E.C.** Continuous advertiser in this paper for over 14 years.

LEGGINGS ! LEGGINGS ! !—Smart Military Officer's appearance. Just passed out of service for other patterns. Very strong, all leather, with extra leather strap at top, lace-up side, cost 7s. per pair. Will send a pair for 24 stamps, post free, from—H. J. GASSON, Government Contractor, Rye.

GOOD, heavy, large, dark grey Waterproof CLOTH CAPES, come well down the waist, very warm, as used by the Army on night duty, but passed out of service for other patterns ; not soiled in any way. Post free for 2s. 6d., from—H. J. GASSON, Rye.

GREENHOUSE SALE.—Half price. Off season. 7 by 5, 28/6, 38/6 ; 10 by 6, 42/-, 50/- ; 14 by 6, 52/6, 65/- ; 10 by 8, 52/6, 58/6 ; 14 by 10, 75/-, 87/6 ; 20 by 10, 95/-, £5 10/-. Frames, 8/9, 14/6, 22/6. Fowl-houses, 8/9, 10/9, 14/6. Approval.—HYPOLITE, Deptford.

RUGS ! RUGS ! !—Good, all Wool, 8 ft. long, 6 ft. wide, and weigh over four pounds ; Government grey ; only been used a little ; much better than common new. I will send one post free for 3s., from—H. J. GASSON, Government Contractor, Rye.

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"AMERICAN POCKET CATAPULTS," powerful, accurate. Kill at immense distance. Greatest success of the day. Price 1s. 3d. each, post free. From importer—J. EGGLESTON, Naturalist, Sunderland.

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HEAD GARDENER.—F. HARRIS, for the past seven years head gardener to Lady H. Somerset, is open to Re-engagement as above ; twenty-two years' experience in first-class gardens ; age 38 ; married, no family ; can be highly recommended by present employer, Mr. W. Coleman, and others.—Address, The Gardens, Eastnor Castle Ledbury.

TRAVELLER.—Wanted young man with good connection among Florists and Market Gardeners to sell Canary Guano. First-class ability as salesman essential. Apply by letter, stating age, particulars of experience, and salary required to the CHEMICAL UNION, LTD., Ipswich.

AMARYLLIS CANARIENSIS GRANDES.—A new introduction of gigantic bulbs bearing immense spikes of sweetly-fragrant flowers, salmon-pink, shaded Apricot, 7 to 14 large flowers on a spike. These bulbs if potted now will flower at Christmas in cold greenhouse. No heat required. 6 specially selected bulbs, each bulb averaging 10 to 12 oz. weight, 7s. 6d., carriage free ; 3 bulbs 4s. ; 1 bulb, 1s. 6d.—WHOLESALE FLORAL DEPOT, 28 Paradise-street, Liverpool.

GARDENING ILLUSTRATED.

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THE KITCHEN GARDEN.

UTILISATION OF ANIMAL MANURE.

(In reply to "A. M. C.")

We readily respond to your request for an article on the best way to prepare manure from animals for garden use, but it need not be lengthy. Now, for application to the soil for ordinary crops when the ground is bare and ready to dig, it is just as well to apply all animal manure whilst it is fresh, and if wet, then strewing a little soil over it to prevent its sticking. All manures are best when fresh, because they then contain the greater portion of diverse plant food. Waste soon comes from heating or fermentation, or the manure lies in heaps, or exposed to weather is much washed by rains. But it often happens that the ground is not always at liberty for manurings. In that case it is a good plan to spread the fresh manure about on the surface amongst such crops as will admit of it, such as Cabbages, Cauliflowers, Peas, Beans, fruit-trees and bushes. Such mulches as these in the summer always do great good, but it may all the same happen that it is undesirable to so utilise manure. Then the next course to take is to treat it as when prepared for Mushroom-beds—that is, to put it into a heap, especially under some cover, turn it thoroughly every few days, and whilst generating a little heat, yet by keeping it turned and sufficiently moistened with water fermentation is of the mildest and there is little waste. Again, manure can be separated from the long straw, then be neatly packed into a square heap and be covered up with soil. In that way it will keep very well also. In using manure on land for any crop, it should always be the aim of the gardener to preserve the plant food elements it contains to the utmost, and not to allow waste either by fermentation or by washing out the food to waste. Of course, when spread on the ground as a mulch what washing it then gets is carried into the soil and is not wasted. As to preparing manure for potting-composts, gardeners invariably use such as they obtain from spent hot-beds, in which the manure has become solid, well decomposed, and sweet. It is, of course, not very rich in plant food, but, as a rule, pot-plants do not need these in a crude form. The great thing with animal manure in potting is to make it like leaf-soil. Before using it should be well decomposed or shrunken, as when mixed with soil, and has been some time in the pots, if it shrinks much then it leaves the soil very open and hollow, and that is detrimental to the plants. Manure from Mushroom-beds is very good also for this purpose, being well shrunken. It is well to obtain pure horse-droppings from a stable if possible. Mix them with three times the quantity of turfy-loam got from an old pasture, as that is full of plant food, stacked into a heap, neatly topped, all the winter, as then it will chop down and bear rubbing through a coarse sieve, the coarse portions making some capital drainage for the bottom of the pot. Whilst for all ordinary purposes horse-manure is best, cow-manure is not a bad substitute if it be well decomposed, but it is cold and shrinks up amazingly, consisting as it does so largely of water. Horse-manure contains more of mineral matter, and also, what is so useful, plenty of fibre. With pot-composts, as a rule, especially with good yellow turfy-loam, use a moderate mixture of sharp, white, clean sand, as that helps to keep the soil from binding hard.

Cultivating clay soil (*A Duffer*).—Your kitchen garden seems to be about eleven rods in area. Six loads of manure, if it be at all good, and the loads full ones, are far too much for such a small area. We should regard three good loads as a liberal dressing. It would be well to get it on to the ground just before trenching proceeds; then a good portion should be mixed with the soil, and especially the subsoil, as the trenching proceeds. But, to deal effectively with the clubbing trouble, it will be best to give a dressing of gas-lime at the rate of about two bushels to three rods of ground, applied at once, spreading it about over the surface, letting it be exposed six weeks, then still further breaking and spreading it evenly. Then it can be mixed with the soil as the work goes on. In the spring, before sowing or planting anything, give the surface a good dressing of fresh slaked lime and fork it in. These dressings should also do much to destroy slugs. These pests, however, dislike dressings of fresh soot or lime when cast about in the summer evenings. A good deal of the clubbing in Cabbages no doubt arose last summer from the dryness of the soil and the exceeding exhaustion of the leafage under the hot sunshine, preventing the plants from overcoming club pests. Light dressings of superphosphate of lime, potash, and nitrate of soda, at about 4 lb. to the rod, used in equal quantities and forked in with the lime in the spring, would do great good also, as the new crops would speedily utilise it, and thus help to stimulate more rapid growth.

Making Asparagus-beds (*W. W.*).—The making of Asparagus-beds, in the common acceptation of the term, differs now appreciably from old usage. Formerly, it was the rule to excavate soil of a long bed from 2 feet to 3 feet deep, break up the bottom, add manure, then layers of soil and manure until the bed stood a foot higher than the surrounding soil. A bed of that description is very well where the soil is shallow, and much of the bottom or subsoil has to be removed—say, 12 inches in depth—and replaced with better soil. Such a bed may be 4 feet in width, taking three rows of Asparagus plants, and be so long as may be desired. The common rule now, where soil is of fair average depth, is to trench it 2 feet deep in the winter, keeping the lower soil down and adding to it in the trenching a good dressing of manure, then later, during frosty weather, adding a dressing of manure to the surface and well forking it in. The breadth of ground thus remains till the spring, usually the middle of April, then it is set out into broad furrows or drills. These should be fully 6 inches wide and 4 inches deep. Into these are put the young Asparagus roots, one year old, having been raised from seed sown in April the previous year. The rows should be 20 inches apart, and the roots in the furrows 18 inches apart; the soil is then carefully placed about them and levelled, the plants being gently fixed by light treading. Nothing more can be done until growth appears. After that the hoe should be kept well used between the rows. About July a light dressing of common salt and nitrate of soda may be given and be well hoed in. Similar treatment is desirable the second year, and the third year cutting off stems may commence.

Three Peas for flavour.—A correspondent in Gardening of Sept. 4, Query 1506, wishes to know the six best Peas. My experience has not been much, and I cannot name six, but the three best for flavour I have ever tasted are Sharpe's Queen, Magnum Bonum Marrowfat, and Main Crop Marrow.—Robert Harding.

NOTES ON CARNATIONS.

Judging from what flowers I have seen in this district, it has not been a particularly favourable Carnation time, the blooms being for the most part comparatively small and poor. Carnations enjoy dry weather overhead while the blossoms are expanding, we know, but anything like drought at the roots has a very unfavourable effect upon both the plants and flowers at this period; in fact, the quantity of water and liquid-manure these plants will take and evince their gratitude for in a very practical manner during the whole of the blooming period is really astonishing, especially considering their decided antipathy to anything like superfluous moisture at all other times. Last winter was decidedly too wet, and the spring and early part of the summer were much too dry to suit these as well as most other plants, and on our naturally light, warm, and shallow ground, which parts with its moisture only too quickly, they would have suffered severely from drought unless frequently and copiously watered.

There is, however, one advantage in a wet winter which I do not remember to have noticed before—viz., that it appears to reduce the ravages of the destructive "maggot" to a minimum. Last season my plants suffered terribly from this pest, my ground being very high, dry, and sunny, but this year I have not found a single shoot affected in this way. No doubt the weather was too wet to allow the fly to get about and deposit its eggs as usual.

It is somewhat remarkable that such a situation, though the soil is by no means favourable for the growth of Carnations generally, suits the old Crimson Clove admirably, and though many of the best-named varieties do not seem particularly happy, yet this too often "miffy" variety appears to be quite at home, making a free and healthy but by no means rank growth, and never being attacked by the "spot," "gout," or any other disease. Again, it is an acknowledged axiom with Carnation growers of all classes that the plants succeed much better when set out in the autumn rather than in the spring. But to even this rule there are exceptions. I planted out some beds of the old Clove last autumn, and a couple of others rather late (owing to the wet weather) this spring. The weather subsequently was extremely dry, and at one time I feared the whole lot were disappearing, but a few good soakings just pulled them through, and they have not only flowered more abundantly and finely than the

others, as well as lasting longer, but the "grass" also is both more robust and healthy in colour than that of the plants put out in autumn. By the way, I recently saw the presence of white streaks or spots in the petals, to which the Crimson Clove is peculiarly liable, attributed to the work of thrips. This, according to my experience and observation, is not correct; the defect is caused simply by drought at the roots. Both last year and this it affected the early blooms of the Old Clove here rather badly; the plants consequently received a thorough soaking, and in both cases it almost or quite disappeared directly. The plants that got the most water produced the finest and clearest blossoms, so there can be but little doubt about it. Carnations growing in pots, in particular, can scarcely be overdone with both water and liquid stimulants while the buds are swelling and expanding, though at all other times they require to be watered with the greatest care.

For supplying cut flowers I decidedly prefer seedling plants of a good strain to named kinds—except, of course, where particular colours, such as the exquisitely delicate pink Duchess of Fife or crimson Uriah Pike are required—as they are infinitely more floriferous, as well as more robust and less troublesome in many ways. For one thing, that pest, the wireworm, seldom or never seems to touch seedling Carnations, while it will devour named kinds from layers, however robust and healthy, wholesale; the maggot, too, is much less destructive among seedlings than layered plants. And if the seed is carefully saved from good varieties, fertilised by hand, at least 75 per cent. of good double flowers, many of them equal to named sorts, and admirable for cutting, may be safely expected. I raise a batch of seedlings every year, and always find them invaluable. They have done unusually well this year, and to give some idea of the amount of bloom that seedlings produce, I may say that from two beds, barely 30 feet long and 4 feet wide, I have been cutting from three to five gross of fine double blooms three or four times a week for several weeks past, and occasionally more than this. Seedlings also remain a long time in bloom—the beds referred to, which began expanding in June, will afford a considerable number of flowers for a full month yet. By sowing, late flowers may easily be had in plenty in August and September.

The Grenadin is a very useful class of Carnation, flowering a fortnight or more before the ordinary border kinds. The flowers are bright scarlet in colour, with fringed petals, highly fragrant, as well as very abundantly produced. I grew several hundred plants this season, but, unfortunately, nine-tenths of them produced only single blossoms, though the seed came from a first-rate firm. I am, however, saving seed from a few very fine forms, so hope for better luck next year. B. C. R.

GARDEN WORK.*

Conservatory.

Now that the tender plants are all housed, we shall have time to look round and see what will be required in the way of Spiræas and other things for forcing. Many thousands of Spiræas are imported about this time from Holland and Belgium. Those grown in the rich soil in Holland are not so good for early forcing as the roots obtained from drier sandier soil, as the crowns are not so well ripened. The prepared roots or clumps are very cheap. I wonder sometimes how they are produced for the money. They should be potted on arrival, and plunged in ashes or Cocoa-nut-fibre till required to move on. They will come in useful after Christmas, and will scarcely be required before. Pink Ivy-leaved Pelargonium Ryecroft Surprise is a splendid variety for autumn and winter flowering. We have a large batch just coming into flower now, and I like it much. Wants a temperature of 50 degs. to 55 degs. at night, and a light position. White Marguerites that were cut down early in August will flower again towards Christmas in a light warm-house. They will do well with the Tree-Carnations and Zonal Pelargoniums. If Roman Hyacinths are moved to a warm-house the early potted batch will soon be throwing up their spikes. Lilies of the Valley should be in hand now, and be potted and plunged outside in ashes. They will come away better after being exposed to a few degrees of frost. When forced the work should be done quickly, and they move speedily in the dark. May be plunged in a close frame in a brisk bottom-heat, and the crowns covered with Moss, which should be occasionally damped. Deutzias, Rhododendrons, hardy Azaleas, Lilacs, and other plants for forcing should now be under cover. A cold-house or pit is the best place for them. The same treatment will suit Tea and other Roses for the present. Of course, the spring top-dressing has been done. Small fires will be necessary now if flowers or plants are to be kept in good condition.

Stove.

There should be plenty of colour in this house from both foliage and flowers. If Crotons and Dracænas have been exposed to the light, they will be of splendid colour now. The lighter foliaged Crotons are the best for table decoration, and plants with single stems and long, narrow, drooping foliage are charming in association with Cocos Weddelliana and Maiden-hair Ferns. Crotons and foliage-plants generally must have warmth not less than 65 degs. at night, with the requisite moisture in the atmosphere. Shade will be dispensed with now, and if roller blinds are used, have them dried and put away, unless it is intended to use them in cold weather to reduce the fuel bill. The difficulty I have found in using blinds in winter for shelter has been the wind, which in stormy weather tears everything to tatters. Gesneras cinnabarina and Zebrina varieties will be coming on now. These are easily grown, and a few dozen pots or pans will be found useful.

Ferns under Glass.

A good collection of Ferns will be always interesting in winter, and there are variegated Ferns enough to give colour. The variegated Adiantum cuneatum is not an acquisition as we have it, though, perhaps, it may improve. But there are several variegated Pterises, including Argyrea, albo-lineata, and Mayi, which are pretty. Market growers sometimes grow green and variegated Ferns in the same pots, and the variety is pleasing when the selections are rightly made. The light green foliage of Pteris straminea blends well with the broad, variegated fronds of Pteris argyrea. We find these and other mixtures always attract attention. Wimsetti is far away the best crested Pteris I cannot say that I care for the crested form of Pteris tremula; it has destroyed the grace of the type. Microlepa hirta cristata is rather a pretty Fern, and is a free-growing variety, easily managed by the average amateur. All the Nephrolepis family are useful. Many of them are graceful things for baskets, and the Davallias are good also, but require more heat. The Fern-house should have a temperature at night not below 55 degs. Probably 65 degs. will be better.

Hard-wooded Plants.

Give abundance of air to keep out damp, and only use fire enough to keep out frost where Heaths are grown. New Holland plants will do better with small fires regularly after October, as many of the early-blooming things—Chorozemas, etc.—will be showing flower.

Early Peach House.

Where the trees are started in December the pruning and training should soon be seen to, and the house thoroughly cleaned, and the condition of the borders seen to. Old, worn-out trees should be taken out, and a bearing tree taken from the wall outside to replace it. For Peaches nothing beats good loam. If heavy, mix a little old plaster with it, and charcoal dust from the bottoms of heaps where charcoal is burnt, or wood-ashes. Stimulants can be given later when the trees are bearing heavy crops.

Late Grapes

A little warmth will be useful in the pipes, but too much heat will be hurtful, and lead to premature shrivelling. Gros Colman must have a well-drained border. If there is much dampness around the roots the Grapes will not colour well, and all outside borders should be covered to throw off heavy rains.

Cold Frames.

Give air freely to Violets and Christmas Roses. These latter should be sheltered with glass in some form if the flowers are required for cutting. Cauliflower plants will require shelter. Since the demand for Violets and salad plants increased many have raised their Cauliflowers in heat in January.

Window Gardening.

Do the watering early in the day. Use the sponge more and water-pot less now. Keep cuttings and young plants in the lightest position. Maiden-hair Ferns will require less water now. These are sometimes dried off and rested in winter; though unnatural, it is better than starving in a damp condition.

Outdoor Garden.

Everything is now in the transition state. There are still a few summer flowers which one does not like to destroy. Beds of Phlox Drummondi have been very fine, and are still bright. Asters, unless they were mulched and copiously watered during the dry weather, have been rather disappointing, but the masses of Mme. Desgrange Chrysanthemums have been fine. Marguerites, both white and yellow, are among the best of the dry weather flowers. Ours have had no water, but the yellows, which seem to require more moisture than the whites, have been mulched. A good collection of Perennial Asters is indispensable for autumn display and cutting. Some of the newer varieties are great improvements on the old sorts. Archer Hind and grandiflorus are very good. Carnation layers have rooted better than usual. We generally plant out a lot of the Perpetual or Tree variety. A number of selected seedlings have flowered continuously, and the layers are showing buds. These will be lifted and put in 4-inch and 5-inch pots to flower in a warm-house. Beds of "Geraniums," &c., should be cleared now and refilled with other things for winter and spring. Violas are charming, and there are such lovely colours in some of the new varieties. Beds of Cannas have not been good, except where the beds have been specially prepared. Many who have planted them have been under the impression they would do with the same attention given to "Geraniums," and have been disappointed. They must have a sheltered situation, as the wind tears the leaves to tatters. Beds of the small-flowered Begonias have been good. The Tuberous Begonias are getting too large now for bedding.

Fruit Garden.

As soon as the leaves are ripe and falling in the early vinery the Vines should be pruned. The spur system, or a modification of it, is the one commonly adopted. The Black Hamburgh and Foster's Seedling—two varieties commonly forced for the early crop—if the roots are in good condition, and the wood well ripened, will show more bunches than are required. Muscats, also, and Golden Queen are very fertile, and generally show several bunches from each spur. When the roots are going deeper than is good for them the wood becomes longer-jointed and the back eyes do not yield large bunches, and some pruners then leave longer spurs, or prune to full, plump buds. It may not always be convenient to lift the roots, and this system of pruning to best buds may do for a time, but ultimately the roots will have to be lifted and brought nearer the surface. Feeding liberally on the surface will keep the roots from going down. At any rate, the best feeding roots will be found near where the food is placed. When the roots of fruit-trees go down deep into the earth, it is usually after moisture, and if plenty of nourishment in a condition to be utilised is kept on the surface there would be less trouble from deep rooting. Ground intended to be planted with fruit-trees during the coming planting season should be trenched at least 2 feet deep, and well manured if poor. Where the land is good the manure may be used as a mulch on the surface after planting the trees. Wet land should be drained. The Canadian Poplar makes a speedy shelter for a fruit farm, and if cut annually soon forms a dense growth.

Vegetable Garden.

If not already done, the remainder of the roots should be lifted and stored—Parsnips, Salsify, and Jerusalem Artichokes excepted. Gardens infested with wireworms and other insect pests should be dressed with gas-lime. It requires to be used carefully where there are any crops on the land, but even from 1 lb. to 2 lb. per square rod may be used with advantage. The best way to apply it is to scatter it evenly over the surface now, and dig it in during the winter. Where the land will not be cropped till spring from two to three bushels may be used per square rod. Salt, lime, and soot are good agents used in moderation. Salt is a valuable dressing for dry, porous land. On such soils from 1 lb. to 2 lb. per square yard may be given if there are no crops on the land. If there are any seeds of Peas left unsown, sow in succession during winter in shallow boxes thickly for the purpose of raising young tops for flavouring soups, etc. It is time all Celery, except the very latest planted, was earthed up now. The last rows will be taken from the open air raised plants, and will not grow so large as the plants raised under glass, but the plants will not bolt till quite late in spring, and be useful for flavouring. Ashes, old tan, or burnt earth will be the best material for blanching the latest Celery. It takes a good deal of frost to hurt unblanched Celery. Ground intended for Asparagus and Seakale should be trenched up as deep as it will bear, and manure very liberally. When this is well done it is not necessary to make beds. Set out the plants 3 feet apart, and 18 inches apart in the rows, next April. E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 11th.—Put in a lot more Rose-cuttings of various kinds—chiefly Hybrid Perpetuals. We generally get cuttings enough of Teas from the forced plants in spring, when they are successfully rooted in a bed of Cocoa-fibre in heat. Disbudded Chrysanthemums. We always thin the buds more of all varieties grown from cuttings, as small flowers have not so much value. Earliest Arum Lilies just throwing up flowers; latest plants are in a cold-pit. The principal seasons for these are Christmas and Easter, but the flowers are always useful, and we can generally cut a few.

October 12th.—A little fire is used regularly now in the principal Chrysanthemum-house, with air more or less always on. Damp and earwigs are the two principal troubles now where large blooms are coming on. Earwigs are hunted up every night now with a light, and many are captured, but still they come. Planted Ne Plus Ultra Beans in 6-inch pots in a warm-house. Took up and stored Beet and Carrots. Earthed up more Celery. Sowed Mustard and Cress in boxes in warm-house. Moved a lot of Scarborough Lilies to conservatory just coming into bloom. Moved Allamandas from stove to another house to rest.

October 13th.—Planted in beds and borders a lot of Violas and Wallflowers. Dwarf Yellow Wallflowers and Blue Violas make a pretty and cheap bed. Shifted on a lot of seedling Aralias and Grevilleas. Caladiums and Gloxinias have been laid on their side to ripen and rest. Grubbed up several old fruit-trees which have become unprofitable. We always buy in a few maiden trees annually to grow on to fill vacancies as they occur with bearing trees. Looked over budded Briers to loosen ties and shorten back young shoots, and clear away suckers.

October 14th.—Stirred soil among Violets in frames. Cut down old Maiden-hair Ferns which had been picked from all summer. Potted Azaleas just arrived from Belgium and placed in cool-house. A few old established plants of Fielder's White and Deutsche Perle have been moved to warm-house for early flowering. Potted and boxed more early Tulips and Daffodils. Planted a large bed of the Golden Giant Rocca Onions. This is the best of its class. Lifted and stored Dahlias and Salvia patens. Early-flowering Gladioli have also been lifted.

October 15th.—Repaired turf on tennis-lawn. Mowed lawns for last time. Gave a sprinkling of bone-meal to thicken the turf. Gathered Pitmaston Duchess Pears; also the last of Marie Louise and Louise Bonne, and Blenheim Orange and other Apples. Lifted the roots of several Peach-trees on south wall. Moved pot-Vines intended for forcing indoors. Top-dressed with old turf and artificial manure. Pruned climbers in conservatory which have done flowering. Potted Freesias and Lily of the Valley.

October 16th.—Moved several large evergreen shrubs on lawn. Trenched a piece of ground to form a group of Hollies. Put in cuttings of Ivies, Honeysuckles, Jasmines, Ampelopsis, etc. Filled a frame with cuttings of hardy edging plants, including Santolina incana and Euonymus radicans variegatus. Potted off Heliotrope and Fuchsia-cuttings. Will be kept growing all winter, as both are required to flower in 5-inch pots in May.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

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OUTDOOR PLANTS.

MIXED BORDERS.

Borders which contain a mixed collection of hardy plants too often present a confused appearance, from the practice being usually adopted of singling the plants out too much, and constantly curtailing their size. If more freedom were allowed and a bolder arrangement chosen and carried out, not paying too particular attention to heights, much better and more pleasing results would be produced. By forming colonies, for instance, of different families which contain several desirable species or varieties, a group of six or more species of Campanula and the same of the best Asters, Ranunculus, Œnotheras, will always look better than the same number scattered over the border. Lilies and Narcissi may be planted together, as both will flourish under the same treatment, and the Narcissi flowering early will be replaced by the Lilies later in the season. Again, species of similar habit and character may be arranged together, such as the dwarf Rudbeckias, Coreopsis, Heleniums, or Eryngiums, Echinops, etc., not to mention Spiræas, Saxifrages, Iris, and others.

Opinions vary as to the best time for dividing and transplanting, some preferring spring, others autumn. If a general overhauling is desired, I should prefer doing it in October as the soil

A mixed border of hardy flowers.

of the borders at that time is generally good, and the work is not so liable to be interrupted by adverse conditions of the weather as it is in the spring. But when performing it in spring I should advise, first of all, lifting and either potting or laying in in some snug place all the more choice and tender things, to be divided and replanted in spring. Speaking generally, I think the spring is the best for dividing those with roots of a soft and fleshy nature just as growth is commencing to push. Flame-flowers (Kniphofias), Day Lilies, Plantain Lilies (Funkias), Hellebores, and Japanese Anemones will represent this class; whilst for bulbous plants, as Lilies, Narcissi, &c., autumn is a more suitable time, and those whose roots are of a fibrous character can be treated at any time during winter.

Time and care should be given to the work if the after well-being of the plants is considered. It is not sufficient to make a hole with the trowel and stick in the plants indiscriminately. The roots must be spread out, adding a little fresh soil of a sandy nature for those things which require it. In dividing a clump it should be done thoroughly, pulling it apart, with the help of a hand-fork, into several pieces, which may be planted pretty close together to form a good-sized clump, in preference to chopping it in two with a spade and replanting the halves. Such plants generally fail to re-establish themselves quickly, and are invariably burnt up by the first spell of dry weather. A.

PERENNIAL LARKSPURS.

Any garden soil suits Delphiniums, and they thrive in almost any position. They may be planted at any time of the year, provided that in summer the plants are not too forward, and that they can be well watered if the weather be dry. The soil should be deeply dug or trenched, the latter being preferable, and plenty of well-rotted manure should be added. Copious waterings in summer will be attended by increased size of spike and flower. Coal-ashes strewn over the crowns will protect the plants from slugs through winter and spring, and a succession of flowers may be expected from about the middle or end of May to early in the autumn. The effect of Delphiniums is exceedingly fine when they are either planted in lines as a background to a flower border or in groups of, say, three plants alternately with other tall herbaceous plants of contrasting hue. They should have a fair amount of room, from about 2½ feet to 3½ feet apart, and look well arranged in beds with about this distance between the plants. The newer kinds far outshine most of the older varieties. No amount of liberal treatment will cause the smaller-flowered kinds of some years back to develop into the gorgeous hybrids of to day. A very good and up to-date selection is represented by the following :—

Beauty of Langport.—The new creamy-white variety; yellow centre, semi-double.

Primrose.—Another white variety with a yellow centre; single flowered.

Princess of Wales.—White, black eye, single flowered.

Albert Edward.—A handsome, deep plum colour, with violet edges to the sepals, black eye, semi-double.

Monument.—A shade of lavender, with a blue centre, semi-double; a very symmetrical spike.

Mr. Crompton Roberts has a ring of petals overlapping the sepals, the former rich purple, the latter brilliant violet-blue, the eye brown, barred with black; semi-double.

The Rev. J. Stubbs.—Of an attractive light blue colour, tinged with lavender-pink, the centre or eye brown; semi-double.

Sara.—Sky-blue, veined rose, white centre, exceedingly handsome, well-formed spike.

Dr Mead.—Violet, inner petals rose and lavender.

King of Delphiniums.—Gentian-blue and plum, white eye, semi-double; an imposing variety.

Triumph.—Violet, inner petals plum, semi-double.

Wonder.—Blue, inner petals lavender, semi-double.

Britannia.—Deep blue, with a large white edge.

True Blue.—Brilliant blue, with a black centre; single flowered.

TREES AND SHRUBS.

SHRUBS FOR SHALLOW GRAVELLY SOIL.

"Oxon" might use Sea Buckthorn (Hippophæa rhamnoides), Portugal Laurel (Cerasus lusitanicus), Laurustinus (Viburnum Laurustinus), Leycesteria formosa, Berberis Darwini, Berberis aquifolium, and perhaps Oleari Haasti as evergreen subjects. In the south-west the Shrubby Veronicas (particularly V. Traversi), Escallonia macrantha, Choisya ternata, Ceanothus, and Desfontanea spinosa would also be available. For deciduous shrubs or small trees there are the Lilacs, Hawthorns (both single and double), Laburnum, Guelder Rose, and the handsome dark-leaved Prunus Pissardi. Groups of Yuccas might be planted here and there, as well as Pampas Grass, which will grow on a steep, shallow bank, although not increasing in size so rapidly as they will do in a moister situation. Large breadths of German Flag Irises should be planted here and there in distinct colours, while the common St. John's Wort (Hypericum calycinum) should thrive well, and Tritomas, Rudbeckia Newmani, Anemone japonica, Gazania splendens, Coreopsis grandiflora, Perennial Sunflowers, White Pinks, and Dianthus Napoleon III., as well as many other perennials, might be used with good effects. It must not be supposed that these plants will assume the proportions they would attain under more favourable conditions, but they should bloom well and endure after they have once got good root-hold. It would be most unwise to apply dressings of nitrate of soda to such soil, which should be enriched with farmyard manure, leaf-mould, vegetable refuse, and any material that will add humus to the staple. In planting break up the ground to some distance around and beneath, and add, if possible, good soil and well-decayed manure, so that the plants or shrubs may get a good start, which is more than half the battle in such a situation. If the surface could be mulched, and the mulching retained during the summer months, this would be found most beneficial in conserving the moisture. S. W. F.

Eucalyptus globulus in Staffordshire.—I have in my garden, which is one of the most exposed and wind-swept to be met with in this part of the country (Staffordshire), two Eucalyptus globulus trees, one of which is 15 feet or 16 feet high, and the other 14 feet or 15 feet, and both are looking beautiful. I should like your opinion as to whether this is not unusual, seeing that the larger one has stood out two winters and the other one? They are of the same age, and were grown by me from seed about four years ago, passing the first winter in the greenhouse, and one of them (the shorter of the two) was carried in and out of the stable each day. The stems, 4 feet from the ground, are 8½ inches and 7½ inches round. They looked very wretched last spring, and were given up for lost, but ultimately broke again, and are now most luxuriant and very much admired. I can scarcely expect them to survive another winter, but purpose leaving them. Do you think they have a chance, as I hear these trees only live about four years?—Legis.

*** This we should consider is very unusual, as it is generally in quite the milder parts of the British Isles that the Eucalyptus attains any size, being a very tender tree. Perhaps readers in the North of England would answer our correspondent.

A selection of bushy shrubs (*W. H. Prowse*).—The following are very useful and ornamental shrubs: Choisya ternata is a grand shrub with rich, shining green leaves and clusters of white, sweet scented flowers. Thrives well in poor soils. The broad-leaved Kalmia (K. latifolia) is exceptionally free flowering, of good habit, and perfectly hardy. Its pretty pale pink flowers are seen to excellent advantage against the deep green leafage. Ledum palustre and L. latifolium are a couple of excellent shrubs for your purpose. Like Kalmia latifolia, they are of even, regular growth, scarcely ever requiring the knife to keep them within bounds. Olearia Haasti is another shrub of the first order. It grows freely and flowers abundantly in damp and shady positions. It forms a round bush with small,

thick, deep green, Box-like leaves and clusters of white, fragrant flowers. Amongst New Zealand Veronicas, V. Traversi is perhaps the best. Hardy, free growing, of good habit, and a profuse bloomer, it well merits wider cultivation. Rhododendron præcox is one of the earliest of Rhododendrons to flower; dwarf, compact, and very floriferous; its rich, rose-pink flowers are very distinct and handsome. Escallonia Philippiana is the hardiest, and certainly one of the best of all the Escallonias. It forms a small bush of graceful outline, the long, pendulous branches having numerous branchlets clothed with small green leaves. The small pure white flowers are borne very liberally, and have a decided Hawthorn fragrance. Yucca filamentosa and Y. recurva glauca are very graceful plants. Their flowering spikes vary in height from 3 ft. to 6 ft. are covered with large white bell-shaped flowers, which remain in perfection for many weeks. Hypericum Moserianum rarely exceeds 1 foot in height. Its long, weeping shoots carry an abundant supply of large deep buttercup-yellow flowers. This St. John's Wort should be planted in the front of the shrubbery. Zenobia speciosa pulverulenta is one of the most charming of dwarf-growing shrubs. Its pure white Lily-of-the-Valley-like flowers hang in graceful profusion. Berberis Darwini should not be omitted. It is a good grower in wet and dry soils. Its small deep yellow flowers are produced with great freedom.

Shrub for name and treatment (*T. Edwards*).—Your shrub is the Weigela. There is no difficulty in rooting cuttings of it, if pieces about 3 inches or 4 inches in length be taken off during August and September and placed round the sides of 4-inch pots and stood in cold-frames and shaded from the sun. As the season is now getting late it will be advisable to place the cuttings in a close case in a gentle heat. When roots have been emitted, remove to cold-frames, and in spring transfer to nursery rows in the open ground.

Removing conifers.—I want to remove some conifers, also large Silver Holly. Please say best time and proper way to remove them?—T. Edwards.

*** The present is a very suitable time to transplant conifers and Hollies, as they will be induced to form fresh roots before the winter sets in, and be ready to start into growth without receiving a check in spring. The plants should be lifted with good balls of earth, and the old and worn-out roots cut away, but the small rootlets should on no account be interfered with. If the plants have to be taken any great distance the soil round the roots should be covered with mats so as to prevent the wind from drying up any rootlets. Water the soil and plants overhead when planting is completed. If the planting is not done now, it will be safer to wait until spring, as conifers, especially Hollies, do better when planted in the early autumn or spring.

Unhealthy hybrid Rhododendrons (*Ficus*).—Rhododendrons ought to grow as well at Heston as in any other part of Middlesex. It is a mistake to suppose that peat is absolutely necessary for the well-being of this favourite class of plants. Some of the finest flowers we ever saw were from plants grown entirely in loam. As your plants have been reared in peat, and the soil they are now planted in is loamy clay, the cause of temporary failure is not hard to find. Plants that have been raised in peat rarely take very kindly to any other kind of soil. They grow fairly well for a season or so, but as soon as the peat is used up and the roots are compelled to go into the loam for support they receive a check. Plants raised in loam thrive well if transplanted into peat, but not *vice versâ*. If you lighten your soil with peat and leaf-mould your plants ought to regain their usual vigour. The Rhododendron is a surface-rooting plant, and delights in its roots being kept moist. A mulching of well-decayed leaf-mould should be given yearly, and occasional waterings overhead and at the roots during dry weather will be of great benefit.

Brush-bush in Argyllshire (Eucryphia pinnatifolia).—Seventeen years ago this beautiful deciduous shrub was introduced from Southern Chili, and now adds a wealth of beauty to our gardens in July and August. It has Rose-like foliage and large white flowers. In the shrubbery here is a fine specimen 8 feet high and 5 feet in diameter, which grows freely and flowers abundantly every year. The foliage is of a deep glossy green, and each leaf has five leaflets about 2 inches long. The flowers measure 2½ inches in diameter, and in form resemble those of an Hypericum. Owing to the length of time the flowers keep fresh after they have been cut they are largely used for decorations. The soil is a sandy loam, and the situation is well sheltered from the north and east winds. This shrub is hardy and requires no protection in winter.—G. S. Macdonald, *Poltalloch Gardens, Argyllshire.*

FRUIT.

THE BEST RASPBERRIES.

The Raspberry is valued in amateurs' gardens for its free-cropping qualities and its long fruiting season, if the soil is good and the plants well cared for. During the past two seasons Raspberries have suffered badly in light soils on gravel, as, owing to protracted heat and drought during the summer, the fruits were soon over. These remarks are more applicable to the southern parts of the country than in the north, as I find in the colder parts there was more rain and less heat. I fear many plants at this date are none too strong, and unless a good growth is made by the late autumn the plants cannot produce a full crop next summer, and it is wiser to make a new quarter than rely upon exhausted stock. I will touch more fully upon this matter later, as both gardeners and amateurs allow their Raspberries to remain too long in one place. They soon absorb all the food from the soil, and as soon as plants begin to lose vigour it is advisable to make a new quarter. Doubtless one of the best kinds is Fillbasket, the one illustrated, for general culture, as it is a strong grower, a great bearer, and a large red fruit. I do not think it is the best an amateur can grow, as the new Superlative is ahead of Fillbasket in several ways. This bears over a long season, and is a stronger grower in poor soils. Previous to the advent of Superlative I had great faith in the one illustrated. Having an excellent soil, the variety named did well, but on removal to another district with a poor soil, only a few inches on gravel, Fillbasket was not so prolific. I find Superlative less fastidious as to soils, and though some may object to it on account of the fruits being more acid, it is one of the best for preserves, tarts, and general use. Of course, there are several more kinds well worth growing in all gardens; Hornet is an excellent red fruit, Baumforth's Seedling is likewise good and most productive, Carter's Prolific is a very good Raspberry, and the old Antwerp Red is a favourite with many, but the newer kinds are more vigorous and have superseded it. Of yellow or white fruits we have less variety, though quite enough for all purposes. White Magnum Bonum is one of the best, being sweet and an excellent dessert fruit. Yellow Antwerp is a good variety, and well flavoured, but smaller than Magnum Bonum. There are other white kinds, but with me they are not equal to those named.

The Fillbasket Raspberry.

Autumn-fruiting Raspberries.

Why these are not more largely grown I cannot tell, as they are so useful when cooked, and may be had until the autumn. They are well worth extended culture. There are but a few varieties worth special notice. One of the best is the October Red, also known as Merveille des Quartre Saisons, a continental variety of great merit. This bears a large bright red fruit in spikes or shoots, often 12 inches to 18 inches long, and the flavour, though acid, is very pleasing. The yellow autumn fruit called October Yellow is a counterpart of the red, except in colour. Belle de Fontenay is also an excellent late fruiter, red, and in season at this date, and of great size when well grown. I have named these autumn kinds as they are grown so readily, and though the summer crop may fail, these do not, as they fruit all through September, and in favourable seasons well into the autumn. A few words as to

Culture

will not be out of place, as now is the season to seriously consider if the old bed or quarter is worth keeping, to prepare soil for a new one, and to select varieties. I would also urge my readers to get strong stock for planting. It is useless to get canes from worn-out or diseased plants, and, unfortunately, Raspberry-canes are subject to disease, a white mould attacking the roots, and they then soon dwindle down and die. It is also well, when disease appears, to make a new quarter as far away from the old as possible, to burn old plants, and make a fresh start. New canes are not expensive. Superlative can be had at 3s. per dozen, and the introduction of new canes will well repay outlay by freedom from disease and the robust growth secured. I prefer to plant in November, and make the bed this month. Either double dig or trench the land. The Raspberry, being a gross feeder, needs ample food, so do not stint the manure, but let it be well decayed, and, in poor soils, the addition of some better material round each at planting is well repaid. A good start is a strong point. In thin gravel soils my advice is to plant firmly, not too deeply, and rely on ample surface-dressing. To promote a strong growth, plants should not be less than 6 feet apart between the rows, and 2 feet between the plants, and 3 to 5 shoots at a stool are ample. I prefer three strong ones. Of course, the first season after planting, only one or two shoots will be made if the plants are not strong, but after planting, no matter what size the plants, it is well to cut the canes to within 6 inches of the soil in February. This will induce breaks from the base. If left any length the shoots come from the canes, and are poor indeed. In summer it is well to mulch with decayed manure. Water also in dry weather, and in autumn the canes may be shortened a little. These will fruit the next season, and in poor soils well repay manure on the surface. Do not dig over the roots, but merely hoe or keep free of weeds. During the second year suckers will throw up freely, and these must be reduced to the three strongest, but amateurs often grow more. It is a mistake; the plant does not give such fine fruit or in quantity. Three shoots with their numerous offshoots are quite as much as any plant can manage, no matter how well treated. Those who have liquid-manure at their disposal will find it useful for these plants at any time from June to October, as few plants require more

moisture in poor light soils. There is a great gain in feeding at time named, as it builds up the growth for the next season. After a couple of years' growth the canes throw suckers too freely. These must be kept down, only keeping those for fruiting the next year. And another important point is cutting out the old fruiting-canes as soon as the crop is cleared, as those left after that date rob the next year's canes. Of course, having fulfilled their task, they should not be left a day longer than necessary. I do not advise pruning the fruiting-canes until the winter is well advanced, as if it is at all severe it injures the wood at the portion where cut. Shortening is best done just before growth commences, and there is little to cut. Only shorten if the canes are thinned to the right number when the fruit is gathered. Sucker growth to excess robs the canes, and, as advised, only those needed for future canes should be left, and, of course, these should be the strongest. Autumn fruiters are treated differently. These are cut down to within 6 inches of the soil in March or April, and they fruit on the young wood. They must be given plenty of room, and not too many shoots. I prefer to grow in rows far apart, and crop between with vegetables, as they then get more light and sun. Treated thus they produce more freely. If crowded the fruits do not always ripen. W.

Vine pruning (*New Beginner*).—As your Vines keep making growth, and you seem to want more light for your plants beneath them, cut back the Vine-shoots partially—say one-third—and that will give you some relief. The leaves will now ripen and soon fall. In watering your plants do so with more care. At this time of year they need comparatively little, and the less you slop the flooded soil the better. You do not say whether your Vines are carrying fruit; in any case the pruning suggested can do no harm. After the leaves have all fallen you may cut all the side-shoots or laterals from the main rods back to one good wood-bud, and then after well brushing the rods leave them for the winter. You may trim up the branches of a Scotch Fir if in your way, or even shorten them back; but removal close to the tree stem is best. Still, in doing it have some regard to the tree's appearance, and do not have too many branches on one side only.

Peaches in house (*Ireland*).—If you plant what you term espalier trees—that is, of course, trees planted crosswise against wires—in your 15 feet wide house, these would require a width of 10 feet at least to be of much service. Trees planted in this crosswise fashion may be 5 feet apart; that would enable you to plant six trees, which, when full grown, would give you a run of 60 feet—that is, so planted just double the length you would get from a single line running lengthwise. In that case you could easily have a line of other flat-trained trees on the back wall, getting ample light and fruiting from bottom to top. Under no circumstances could you more fully occupy the house. The standards, as suggested, would render the back wall useless Nectarines require exactly the same culture as Peaches—indeed they are smooth Peaches — and an Apricot would do well also on the back wall. A little artificial heat given when the bloom is expanding would help to set it, but that would no doubt suffice. By planting early, midseason, and late varieties, one tree of each, you would, without any artificial heat, have Peaches over a long season.

Peach Mr. Gladstone.—This is one of the best late Peaches. The fruit is large and highly coloured when exposed to the sun. It is worthy of notice what an effect the air and sun have on the colouring of these late kinds. We have two trees growing on the front trellis of our cold Peach-house, and this house has sliding lights in front to give air. Where these lights push back and the fruit is exposed to the sun the colour is splendid. This variety is a strong grower, and sets well. We are now (the last few days in September) gathering fine fruit from these trees, and shall be able to continue to do so well into October. I can thoroughly recommend this kind for cold-houses.—J. Crook.

Market Plums.—Excellent suggestions as to introducing greater variety in Plums grown for market were made recently in a paper read before the Royal Horticultural Society by Mr. A. H. Pearson. A great grower for market, Mr. Hammond, whose experience is very wide, said, however, in relation to that famous mid-season Plum, Victoria, that he could sell in the Borough and Spitalfields markets twenty bushels of it at any time to one of any other, simply because the Victoria has a market reputation no other Plum has. Mr. Warren, of Isleworth, a first-class market Plum grower, seems to have a diverse opinion, or had twelve years since, when I visited him. He largely planted Czar and Monarch to give greater variety and to ease the pressure of the Victoria and Pond's Seedling season. All the same, there can be no doubt we have not in commerce any Plum so reliable as is Victoria.—A. D.

LILIUM GIGANTEUM.

This is one of the most distinct and handsome of the Lily family. As will be seen by the accompanying illustration, its flower-stems are remarkably showy and tall, the leaves being of great size and rich green in colour. The flowers are not showy individually, but they are borne freely in a raceme towards the apex of the stem, and their colour, ivory-white stained with brown, is unusual. A deep, well-drained soil suits the plant. The best results are got from grouping the Lily boldly with shrubs around for protection and screen from fierce sun.

Lilium giganteum. From a photograph by Mr. C. J. Backhouse, St. John's, Wolsingham, Darlington.

Montbretias.—I have had some experience of these quickly-increasing plants. About fifteen years ago I had some thriving clumps in a south border, protected from north-east winds by a high wall at the back. They multiplied very fast from half-a-dozen small specimens, and I brought them to my present residence ten years back. I soon had many fine patches in the borders. About four or five years ago these suddenly perished in the spring without a single exception, and all I had previously given to friends did the same. Fortunately, I had planted a good stock in a narrow border, warmed by the greenhouse pipes. M. Pottsi, M. crocosmæflora, M. rosea, all grow luxuriantly and flower freely every autumn, while my neighbours complain that their plants will not bloom. The spring season of this cold county is very trying—one gets alternate frosts and rain—and I expect my Crocosmas rotted while dormant from that cause.—W. H. L, *Cumberland*.

ORCHIDS.

A BEAUTIFUL AUTUMN-FLOWERING ORCHID (LÆLIA AUTUMNALIS).

A good stock of this handsome Lælia is of great value in keeping up an autumn and early-winter display of flower. The pseudo-bulbs of L. autumnalis are shining green, roundish, narrowing almost to a point at the apex. From here the bloom-spikes proceed and bear five or six flowers on each, these being rosy-purple on the sepals and petals, side lobes of the lip white, the centre rose, streaked with magenta, and having a yellow centre. The plant is a true epiphyte, and consequently cannot endure a thickness of compost about its roots. It is owing to inattention to this that many amateur cultivators make such a poor show with it, for it is not really a difficult plant to grow when suitably housed and cared for. I have seen remarkably good specimens of this and similar species grown on large rough blocks of wood with the bark kept on, Apple wood being especially suitable. Rafts or shallow baskets are better than these and much more convenient for moving about. The compost may consist of equal parts of Moss and peat, a cushion of this about an inch in thickness being formed on the raft, pressing a little more Moss around the pseudo-bulbs when necessary to hold them fast, the whole being then firmly wired down. For baskets the same thickness of material will suffice, and in either case a firm holding for the pseudo-bulbs is of great importance. The plants push young growths in early spring, and as soon as these are getting a little advanced on established, well-rooted plants it will be necessary to water very abundantly, the more so as hardly any shading and a free circulation of air are required. The advantage of perfect drainage will at this time be apparent. I find L autumnalis rather erratic in its habits, some plants pushing up the spikes at once, almost before growth is finished, and others resting awhile. In their treatment this has to be considered. When root action is seen to be slow and no sign of the spike is apparent by all means let them rest, and the less water they have and the cooler they are kept the better; but if, on the other hand, the spikes push up at once, let them have their way and endeavour to rest them afterwards. In the depth of winter a night temperature of 50 degs. is ample, and care should be taken not to excite the growth until the increased light in spring allows of its being made under congenial influences. Too much heat is not advisable even in summer; in fact, I am of opinion that the majority of these Mexican kinds would be quite warm enough with the Odontoglossums if only the latter would stand more sunshine. But in a shady house they will never be satisfactory, so they have, as a rule, to put up with more heat than is really necessary. It is a very variable species, many named forms being in existence. T.

Pelargonium Raspail Improved.—For winter flowering this variety is especially valuable, and in the dull November days the brilliant blossoms are very effective. The individual flowers, too, are much larger than in the old form, and being semi-double stand well when cut. It is surprising the number of useful sprays that may be gathered from quite small plants, while those of larger size that have been specially prepared for winter flowering yield considerable quantities.

THE NETTED IRIS AND ITS VARIETIES.

Snowdrops and Crocuses are world-wide known and their merits often extolled, but scarcely a thought is given to the charming spring-flowering reticulata group of Irises which has recently come more to the front, and happily so, as the species and its varieties are amongst the most cherished of early hardy flowers. The type is naturally the best known, as it has been introduced for some years, its date of introduction probably being about 1821. And now that the fashion of forcing hardy flowers in pots for winter bloom is on the increase, this lovely Iris has come more into notice, as it is one of those things that a small amount of heat will bring into flower long before its natural season. We may say all Irises are beautiful, but this is especially so, as it is almost as early as the Snowdrop, often sending its violet and gold flowers, vividly coloured and richly fragrant, through a covering of snow, and then its exquisite delicacy is intensified. A clump of I. reticulata in full flower on a wintry day is a refreshing sight, and one that may be obtained at a mere nominal outlay. I. Histrio is pretty, as, although scentless, its flowers are of a delicate shade, pleasing to many, while the flowers have not the washed-out, poor appearance of those of I. Vartani—at least, this is my opinion of that Iris as I have generally seen it; but perhaps others can tell a different tale. I. Histrio was found in Palestine under the famous Lebanon Cedars, and is the second of the group to appear, the first herald being the sky-blue and dwarf-growing variety cyanea, a charming thing, and valuable not only for its earliness, but also for its delicate tints. It is quite distinct from I. reticulata, and the two as regards colour make a fine contrast, the rich velvety hue of the type associating remarkably well with the paler colour of the other. The flower is smaller, but the segments are broader, the inner ones purple, and the outer flaked and spotted or blotched with purple on an almost white ground, but with a tint of blue. As mentioned previously, I. reticulata cyanea is the first of the series to bloom, and though of quieter colouring than the typical I. reticulata, it is a gem that all Iris fanciers must appreciate. It is dwarf, the flowers nestling not far from the ground, and displaying fine shades of blue; the central segments are the palest, the others having a deeper-coloured ground, made bright with a rich yellow band. Another form to be recommended is Krelagei or purpurea, found, we believe, as in the case of the type, in the Caucasus, and also in Persia. It is less desirable than I. reticulata, as the colour is duller, approaching more a slaty hue than a true royal purple, and it is scentless; but, notwithstanding its drawbacks compared with other kinds, it should not be discarded from the collection. The last of this interesting race to show its beauties is the type, and this needs no eulogising; its beauty speaks for itself, and its popularity justifies its wide cultivation. Such a sweet flower should be in every garden worthy of the name, and it must indeed be a poor place in which this spring Iris cannot find a suitable home. In the case of all these Irises it is a good plan, when the weather is likely to prove stormy or cold, to shelter the clumps with a hand-light, or give similar protection, as it is impossible to preserve the purity and delightful beauty of the flowers when they are exposed to all weathers. But there is no need to systematically provide a covering, as they are quite hardy, preferring naturally a sheltered, warm corner and moderately light sandy soil, though we have seen the plants succeed under less favourable conditions than these. An amateur may, by planting these four Irises, have a brilliant succession of beauty from January to March in the open air, and by potting up the type in autumn and placing the plants in a warm-house a display of its lovely flowers will be made during the Christmas festivities. I. Bakeriana, rich purple with white blotch on the lower segments, is very beautiful.

There is one other point I should like to mention in connection with these Irises, and that is the suitability of the flowers for cutting. It is a common belief that they fade almost as soon as those of the Tiger Flower, or Tigridia, but such is by no means the case. I have had the blooms last three or four days in good condition, but after this period they commence to wither.

X.

The Netted Iris (I. reticulata). From a photograph by Miss Willmott, Great Warley.

A way of growing Sweet Peas.—I have Sweet Peas here which look very neat growing inside a circle of wire-netting 3 feet high and nearly 2 feet across. When sowing I marked out a circle in the soil by pressing down the bottom of the wire circle upon it. In this I sowed the Peas and then pegged down the bottom of the wire circle in its proper place around them. When the plants had grown some inches high I inserted a few branching rods about 5 feet long here and there amongst them. On these they climbed, and, overtopping and overhanging the circle of wire-netting, formed a dense head above it, which, when in full bloom, looked remarkably well.—W. M.

ROSES.

WORK AMONG POT-ROSES.

This is a very busy time. We need to re-pot, to prune the early batch, and generally overhaul all of our pot-Roses. Of course the majority of the plants have been in the open for the last two or three months; if not, we shall need to bring them outside at once. I will take it that they have been out since July; also, that it is desired to have a few blooms at Christmas and during the New Year. In that case we must select a few of the ripest and best matured plants, treating them the same as I will presently describe for the general collection, excepting in the matter of introducing them to heat, or, at least, under cover of glass at once. From time to time a few plants can be pruned and brought into the house to give a succession of bloom. These notes are not intended for large growers, but for the amateur with, perhaps, two, or, at the most, three small houses, and a pit or frame.

Re-potting is most important. Many have the idea that to flower a pot-Rose it must be root-bound and undisturbed. This is wrong. Why should we be unable to obtain bloom simply because a plant has been given help from more soil? A Rose that is root-bound will naturally have exhausted the compost in the pot. Turn them out carefully, rub off a little of the loose soil at top, pick out what crocks you can without much disturbance, and do not hesitate to afford them a double shift. It is much best to have the plant carrying that short and well matured wood so easily obtained in a 5-inch or 6-inch pot, and then give it fresh compost. Pot deeply—that is, endeavour to get the crown of the plant a little lower than before. The various composts for Roses have been dealt with before, but it may be well to repeat that a good mixture of turfy-loam, leaf-soil, and thoroughly spent stable-manure is as good as any; do not break this too fine. When repotted—which should be done more firmly than is usual—stand on one side in a pit or frame, or under the partial shelter of a wall or hedge, being sure to take some precautions against the ingress of worms through the drainage holes. The earliest batch may go to the greenhouse at once after being pruned. Do not prune the later ones for a few weeks yet.

Pruning is very important here, and must be done with two objects in view—to get as much bloom as possible, and yet not allow the plant to become loose and coarse. At the end I will give a few selections, and if these varieties are used the question of pruning will be more simple. They are also of good habit naturally, and all are first-class under glass. Make a point of cutting out the centre shoots, especially those that are at all weak, and see that the terminal eye has an outward look. Cut back a strong shoot about half-way and the weaker ones two-thirds.

You must use a little judgment in what I may call balancing your plant; but never do this at the expense of a good shoot that is well matured. It may happen that only two or three of these are present. In that case tie them into position as soon as pruned. You cannot do better than start with pot-Roses at the present time, if you do not already possess a stock. Purchase plants of last winter's grafting, and have them in 5-inch pots. These will carry sound wood and be in a capital condition for potting on.

SELECTION OF VARIETIES AND THEIR LEADING COLOURS.

Teas and Noisettes: Catherine Mermet, rosy-flesh; Corinna, tawny-flesh and rose; Françisca Krüger, copper and peach; G. Nabonnand, rose and salmon-yellow; Mme. Charles, apricot-yellow; Mme. Falcot, apricot; Mme. Lambard, salmony-rose; Medea, lemon-yellow; Niphetos, white; Perle des Jardins, deep yellow; Princess de Sagan, deep crimson; Souvenir de S. A. Prince, white; Souvenir d'un Ami, pink; and The Bride, white.

Hybrid Teas: A. Guinoisseau, blush-white; Clara Watson, white and rosy-peach; K. A. Victoria, creamy-lemon; Lady Mary Fitzwilliam, rosy-flesh; Marjorie, white; Mrs. W. J. Grant, deep pink; and W. F. Bennett, deep crimson.

Hybrid Perpetuals: I would only use a few of them to obtain dark crimson shades. Princess de Sagan and W. F. Bennett from the preceding sections give us deep crimsons, but we cannot dispense with General Jacqueminot, Fisher Holmes, A. K. Williams, Etienne Levet, Gustave Piganeau, Duke of Wellington, and the new Rose, Tom Wood. P. U.

Roses for winter and early spring.—What Roses could you recommend for pot culture to meet my requirements? The house is a small glass one, and I shall heat it with small combustion stove. I am thinking of putting pots of bulbs in the rest of the greenhouse. Would this arrangement be suitable, and what heat in day and night would be required?—A. GOTTSCHALCK.

*** Our selection of Roses will answer the first part of your query. Bulbs will grow very well in a temperature of 45 degs. to 55 degs., which may rise in the day, and fall at night another 5 degs. without the least harm.

Wood of Reynolds Hole Rose (*Harold*).—Strictly speaking, Reynolds Hole is a deep pink Rose of very old standing; but as it is almost forgotten by the average rosarian, a newer variety, which was introduced in 1873 as S. Reynolds Hole, has for a long time had the first letter cut off. S. Reynolds Hole is a very dark Rose, with perfectly smooth wood, and the description in the book you name is quite correct. Yours is certainly not true to name, but we cannot name a Rose or any other florist flower from description. Send a piece of wood and leaf if you have no blooms left and we will reply.

BLAIRII No. 2 ROSE.

THE accompanying illustration shows a tree of the variety Blairii No. 2. The tree had more than 200 fine flowers on it when the photograph was taken. I find that each year's growth of the Blairii No. 2 can easily be bent and tied in position about the end of August, and that doing so does not cause lateral shoots to start before the following spring. If not bent down till October the season's growth becomes brittle and less easy to train. ALBERT COATES.

Standard Rose Blairii No. 2. From a photograph by Mr. Albert Coates, Clarence-street, Manchester.

—— After upwards of fifty years this old Rose is still one of the very best of its colour for pillars, arches, and especially as tall standards. The pale blush is not found in exactly the same shade elsewhere among Roses, while the habit of the plant, and its exceptionally free-blooming qualities early in the summer, together with its sweet perfume, will always make it welcome, even among the many new varieties of merit that are constantly being introduced. One of the most effective ways of growing Blairii No. 2 is as a tall standard upon the lawn or by the sides of drives. The long growths can be bent over in form of an arch, and when the whole length of the rods are simply covered with blossom and deep-coloured foliage there are few prettier features. It may be well to give a warning anent the pruning away of any long rods. Because these have not borne blossoms this summer or autumn they must not be considered useless. They are, in fact, the most valuable wood, and while others may be cut out we should not even shorten these. Blairii No. 2 is one of the hybrids between Chinas and Bourbons; it is very large and double, but, like the rest of this section, it, unfortunately, only blooms once in the year, and is one of the section called "summer Roses."

SOWING SEEDS OF BRIERS AND ROSES.

(IN REPLY TO "MELON.")

As so many will now be gathering hips of Roses and Briers with a view to sowing the seeds from same, it may be well to go a little further into the subject than could be the case to individual inquiries.

The hips of Roses and Briers should be gathered when just turning black from the red and orange colours now prevalent. Lay them in sand and store in a cool place, but be very sure mice have no access to them, as these little pests have a great fancy for such seeds, and will ruin a whole lot in course of a single night. Next February squeeze the hips between thumb and finger, releasing the seed, and stir both sand and seed well together. Unless you do this many seeds will be wasted, and by mixing the whole you are able to sow the seed far more evenly than would otherwise be the case. Now it does not matter much whether you treat both Rose and Brier in the same way or not, so far as germination is concerned; but, as we naturally wish to have our Roses under the best possible conditions, we would advise that these always be sown in rather deep boxes. A compost of loam, leaf-soil, and sand in equal proportions is a good one. Make the surface level, sow thinly, and just cover with a little more of the same compost. You cannot do this better than by placing a little of the rough compost into a fine-meshed sieve or riddle, and shaking this over the seed, holding the riddle some 2 feet or so above. A cool-frame is the best position; and, again, you must see that mice do not trouble the seed. If you keep it dark germination will be hastened, and the soil will not need the surface watering so injurious to seedlings when just appearing through the soil. Of course, you will admit light directly the seedlings appear.

Now treat them to cool temperature; in short, let them grow as naturally as os-

sible all that summer. The following spring carefully lift the seedlings, and plant out upon a prepared border. It is a better plan to turn the whole of the box out and remove the young plants thus than to lift each separately. Choose a warm border, use a light but fairly rich compost, and prick out each seedling 1 foot from its neighbour. Some will flower the same summer, and almost all the season after. If one does not turn out well do not discard it; the first season is not a fair test, and what is very puny and indifferent may—and often does—turn out well after.

So far as the hips of Brier are concerned, prepare the seed in the same way, but sow in shallow drills in the open. We prefer to make a shallow drill, sow, and then cover by means of a riddle, as described for Roses. It is better than drawing the raised soil over the seed. The reason of drills is to conserve more moisture and to keep the seed in rows, so that summer weeding may be more easily carried out.

PROFITABLE ROSES.

Niphetos.

No Rose, if well managed, can possibly be more profitable or useful than Niphetos, and few are more beautiful. When grown under glass and in bud it is the purest white of any of our so called white Roses, though it is mostly described as having a lemon-coloured centre. When, however, Niphetos blossoms reach that stage, or colour, they are beautiful Roses spoilt. Under glass, too, it is far more pure in colour, or rather the back of it is, and more delicate in form than in the open air. This Rose is sometimes described as of globular form; now, this is misleading, as really, when fit for use, it is one of the longest and most delicately-formed Roses we possess. Cut the flowers in time, and no Rose is less globular, or more elegant, pure, and useful. Early cutting of the flowers is as favourable to successful culture as it is for turning the Rose to the best advantage for ornamental purposes, for not only is it true of this Rose that you may cut and come again, but the frequent cutting of the blossoms is one of the most potent causes of their constant and ever-recurring production. This Rose is sometimes called a vigorous grower, but with very few exceptions this is not the case. True, occasionally a large shoot will spring up near the root, and run a yard or more without blossoming, and then finish with a shower of flowering shoots. But generally a foot or less of growth is nearer to the truth. And it is this tendency to moderate growth—so moderate, in fact, as often to deserve the name of weakly growth—that constitutes one of the chief merits of this lovely Rose, for the normal habit of this plant is for each shoot to produce a flower-bud on its extremity. Hardly has this been gathered, even at times beforehand, than the shoot throws out another blossom. Where a greenhouse roof or wall has to be covered as quickly as possible it is best not to prune this Rose, more than is done by the mere cutting of its flower-buds. In all cases hard pruning should be avoided, for Niphetos seldom breaks so well near the base of the flowering shoots as further up the branch. In fact, not a few of the base buds prove blind, and at times many of the flowering branches have few or no wood buds on them, so that the pruning of this Rose needs some judgment and care. Left very much to itself, Niphetos, by its natural breaks, will mostly show the cultivator where and when to prune. When thoroughly established, and where it does well, considerable thinning out and hard cutting back of weakly shoots may be needful to keep the plants regularly furnished with flowering wood from base to summit of wall or roof. But through the earlier stages little or no pruning will be needed. A rather

Light soil seems to suit this Rose best. Naturally, it seems somewhat tender, and moderate food, as well as a soil that tempts but little rooting, such as a mixture of peat and loam, and leaf-mould or thoroughly well-rotted farmyard-manure, suits Niphetos well. The root-run should also be well drained; the slightest excess of water at the roots, if the drainage is defective, will tell at once injuriously on the healthy growth and perfect flowering of this Rose. A rather dry and fairly warm atmosphere, especially throughout the winter months, is also essential to the free production and perfect finishing of its flower-buds. Little or no overhead syringing should be given to Niphetos under glass from November to March, and a temperature of from 45 degs. to 60 degs. will suit it admirably during those dull, cold months; not but Niphetos will do fairly well under glass with less fostering and genial conditions. But when exposed to damp or cold in winter the lovely flower-buds are apt to lose their external petals, or, worse still, to rot off at the neck or collar. Such symptoms are but the natural protest of the Rose against cold or damp. The scent of the blossoms of this Rose is a very distinct and delicate one—a sort of a half-and-half mixture of the odour of Primroses and Violets. The foliage is also specially fine, and almost unique in distinctness, and the Rose needs no other greenery, either for button-hole or other bouquets, or for general decorative purposes. In those old-fashioned gardens where flowers are not wholly grown for cutting no Rose is more worthy of a place for the decoration of a wall, roof, rafter, or pillar, than Niphetos. Trained on the roof of a greenhouse, most of the buds, from the slender nature of their flowering shootlets, depend more or less from it.

H. B.

Pegging down Roses.—I wish to make a bed of Gloire de Dijon or some other Tea Rose. I want the ground well covered. Can I peg down the plants? Would they do well, and could other Roses be treated in same way? When in Ireland I followed that plan with Moss Roses, and planted between them a deep blue Pansy, which flowered in the spring, and then the young Rose-shoots lifted their heads, and made a grand bed of uniform height a little later.—North Devon.

*** You evidently know how best to obtain a pretty effect with pegged-down Roses. The Gloire de Dijon is suitable, but you will find in our "Selections of Roses for various purposes" a list of those we know to be very pretty when treated in this form. The list will soon appear.

Roses for house.—Will some kind person tell me which are the best Roses to grow in a house heated to 60 degs, and would they do along with "Geraniums" and other plants?—Steinman.

*** Any of the Roses named in our selection for pot work in the article upon such will grow in the temperature you name. It is rather a mistake to grow Roses with a lot of other subjects, unless you can afford great care as regards syringing and the checking of insect pests.

Crimson China Rose.—Would you kindly tell me what Crimson China Rose you recommend for perpetual blooming in border on lawn? I want one that would grow to a fair-sized bush.—G. P.

*** La Vesuve and the Old Crimson China are both good, and would suit your purpose. The Old Crimson will be least expensive.

Roses for walls in Berkshire (*G. P.*).—We would choose Félicité Pérpetue and Rêve d'Or, which will flower from early June until mid October, and probably carry their foliage several weeks longer.

Manure for Roses (*O. F.*).—Of course you can overfeed a Rose, but so long as it grows healthily such is not the case. Your Bouquet d'Or should flower next year upon the long, flowerless growths of this season. Do not prune these away; it is the nature of Bouquet d'Or and other strong climbers to flower upon the past year's wood. Do not clip the roots nor lift them annually.

Growth on Rose (*Purley*).—The hair-like growth is peculiar, but, nothing more, we think, than of a fungoid nature.

Niphetos Rose in pot.—Would the Niphetos Rose do well in a pot in a greenhouse?—Greenhouse.

*** Yes; it is the best of all white Roses for pots.

Best H P. dark Rose.—What is absolutely the best very dark crimson H P. Rose, having regard to quality of flower and vigour of growth? I incline to Grand Mogul or Prince Arthur. Do you know better ones?—Harold

*** Prince Camille de Rohan and Fisher Holmes are both better in the same colour as the above.

Planting standard Roses (*Snap*).—Put in your fresh standard Roses early in November. Yes, give a little manure and dig up the soil now. A slight mulch of manure after planting will also do good. Surface moving of the soil is a great help during growth. It keeps the whole moister below, prevents weeds, and generally helps the plants.

Rose-buds failing.—I have had a great many of my Rose-buds, when budded near the ground, fail; the centre of the bud dies after a fortnight or so, while all the rest of the budded part remains healthy. The root of the bud has not been pulled out in budding. This does not happen so much when budded high. Can you tell me the cause? Is it eaten by an insect?—Alpha.

*** If you cover the buds with soil it would cause just such failure as you describe. It also occurs when the bud is too young. Many, too, do not tie the lower part of the bud in so well when working upon dwarfs as with those more easy of access. Insects will not attack the dwarf more than the standard.

Rose-leaves diseased (*A Constant Reader*).—It is very clear that your Roses are infested with either aphis or green-fly. The honey-dew from these pests retain every impurity that may come into contact with the foliage; hence the black and sticky deposit. You must wash well with a weak solution of soft-soap and water. See our article upon pot-Roses. It is absolutely necessary that they be kept clean from the first. We think the bud sent would have opened in due course.

Evergreen Roses.—Your correspondent writes "there are no strictly evergreen Roses." Has he ever seen the Banksia, W. A. Richardson, or the Macartney, which latter I think will be found a true "evergreen?"—Salf.

*** We do not mind friendly criticism to our replies—it helps one to look at a subject in another light—but this time we venture to say the critic is wrong. Does he for one moment think we do not know such everyday Roses as the above? The first and last varieties named are tender, and even when planted in the warmest nooks of our warmest counties are not "strictly evergreen." They are, under favourable conditions abroad, and under glass here. If the query (page 436) be read again by "Salf" we are sure he will agree that the answer was not far wrong or misleading—it was for a fence facing east. But what is an evergreen? We believe it to mean such things as the Holly, Laurel, conifers, etc., and call the Rose a deciduous-flowering shrub.

1862.—**Mice and Crocus-bulbs.**—A few years ago my garden was over-run with mice. They devoured the Crocus-bulbs, Peas, Beans—in fact, anything—till I began to trap them; afterwards I seldom lost one. Ever since then I always put traps (not poison) whenever I sow or plant anything likely to be eaten by mice. The traps I use will catch from two to six. They have holes with a wire spring. I drop candle-grease or cheese in the holes and tie the springs down with cotton. The mice will break the cotton to get the cheese and cannot get out again.—E.

A good Daffodil for forcing.—Of all the Daffodils I prefer Ard-Righ for forcing, as it requires but slight warmth to have it in flower in January and February. Its bright yellow flowers are always acceptable, and more so at that time of year when yellow or golden-coloured flowers are not abundant. Its culture being so easy, and only slight heat being necessary to bring it into flower, it is essentially a subject that amateurs may grow in their greenhouses without fear of failure. The chief thing to remember is to pot up the bulbs early or as soon as they can be bought, which is generally early in October. If potted at once and plunged in a bed of ashes or leaf-mould with the Tulips and Hyacinths, they quickly root and are ready for removal to a pit or greenhouse during November and December. When the flowers commence to push they will speedily develop if placed in a temperature ranging from 60 degs. to 65 degs. I prefer potting the bulbs singly in 3-inch pots, as they are then more convenient for the purpose these forced Daffodils are required for here, but they may also be planted in 6-inch or 7-inch pots, putting eight or nine bulbs in a pot. Anyone having a conservatory or greenhouse to keep gay with flowers early in the year might do worse than grow this Daffodil in quantity. If required merely for cutting, the bulbs need be only planted in either boxes or pans. After being forced the bulbs should not be thrown away, but planted either in mixed borders or shrubberies, or otherwise utilised for naturalising in woods or the wild garden.—A.

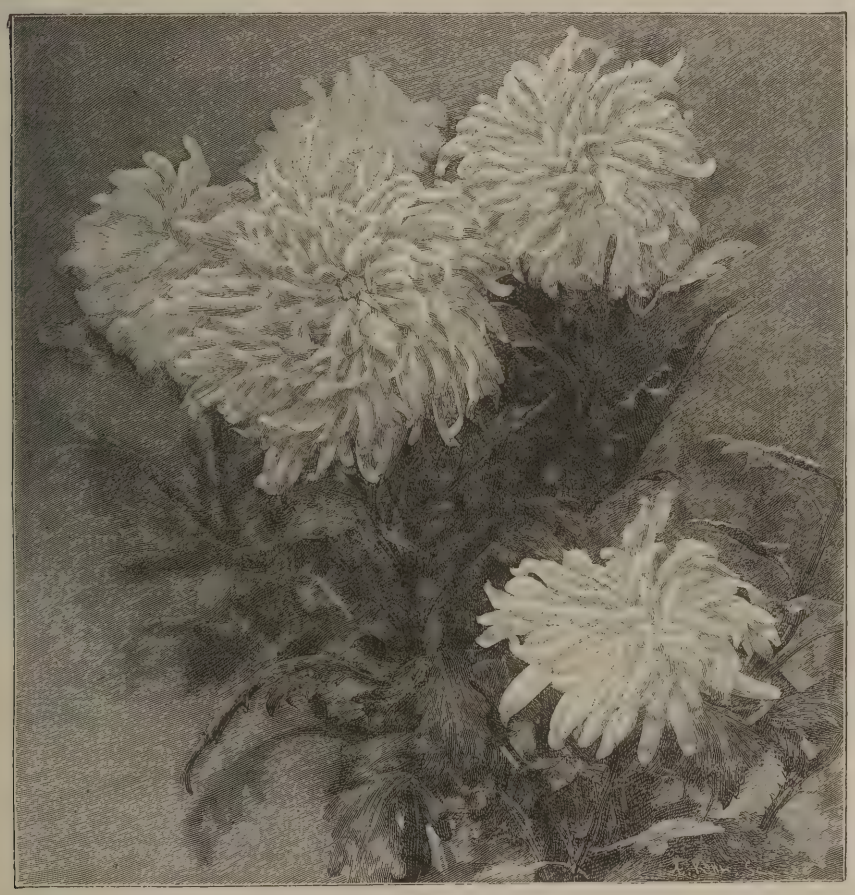
Using road-scrapings (*N. W.*).—Road-scrapings are very beneficial for lightening heavy soil, as they usually contain so much gritty matter, but "N. W.'s" garden appears to err on the side of lightness already. Leaf-mould, vegetable-refuse, farmyard-manure, and all humus-forming substances would be the best additions to such soil.

CHRYSANTHEMUMS.

LATE CHRYSANTHEMUMS.

The variety depicted in the accompanying illustration has been grown for many years, and as a late-flowering sort is much valued. There are several varieties now in cultivation, each having some special quality or characteristic; but the flowers of Princess Blanche have proved very useful during late December and early January of each succeeding year. Although not absolutely pure white, it is of a shade of creamy-white that for almost all kinds of decorative work is generally appreciated. It is one of the best of the late flowers, and strong culture should be the rule. When grown in too free a manner the flowers are rather poor and the stems very weak, causing the blooms to fall over, thus losing grace and beauty. On this account they should be freely disbudded. Plants grown on strongly all through the growing season invariably develop stout and sturdy stems capable of finishing off blossoms of good size and substance. It is thus possible to grow a batch of plants each carrying two to three dozen flowers if the plants be treated in a proper manner. The constitution is strong and the habit comparatively dwarf and sturdy. There is also a recent sport from this interesting variety named Janette Sheahan. This is of a beautiful golden-yellow colour, lightly tinted bronze, and is a welcome addition to the late kinds. Like the parent variety, it is dwarf. Other late sorts are Niveum, large, pure white, very beautiful in any form; L. Canning, pure white, seen at its best when grown freely, dwarf; Lady T. Lawrence, pure white, large, rather tall; and Princess Victoria, also white, and of a dwarf habit. Among the yellow sorts W. H. Lincoln is good at almost any time, with its large, handsome, deep yellow flowers on a splendid dwarf habit of growth; Le Rhone is a good clear yellow flower on a dwarf habit, and has a very hardy constitution, flowering very late indeed; Duchess of York, now three years old, has been tried and proved a splendid late sort, its pretty light yellow flowers of graceful form being much admired; Challenge, a variety of American origin, is a good bright yellow, and flowers freely enough, too, and is of excellent habit; Golden Dart, a recent addition, is sure of extensive culture in the near future; its lovely flowers of a rich buttercup-yellow, combined with elegant form, stamp this sort as a fine acquisition; the other yellow sort is Golden Gate, and this is in good condition until quite late in the season; tawny yellow is the best description of its colour, and when the plant is grown strongly and freely disbudded large, handsome blooms are always developed. Other varieties of a deeper and richer shade of colour are Golden Gem, rich bronze-crimson, passing to rich yellow with age, free flowering; Tuxedo is a beautiful terra-cotta, flushed crimson flower, and free, too, though rather tall; Lord Brooke, with its large, incurved florets, is a useful late sort, the bronze colouring in late flowers being very pronounced; G. W. Childs, with its bright, rich crimson blossoms, should be in all collections; Mme. Felix Perrin is a very free-flowering late variety of a beautiful shade of soft rose, and because of its colour highly valued for December uses; and Mrs. E. W. Clarke, deep rosy-purple and sweet-scented, is generally seen in beauty late in December and early in the new year. All the foregoing are Japanese sorts of the incurved type of the flower; the best are: Mrs. Norman Davis, rich yellow; Chas. Gibson, deep bronze; Princess Teck, pearly-white; Lady Dorothy, buff; and Hero of Stoke Newington, rosy-pink. The best late Pompons are: Snowdrop, small, pure white; Primrose League, light yellow sport from the former; Marion, very small, but free flowering, colour intense orange; and Dolly, a pretty, compact flower, colour pale canary-yellow. To ensure the plants being in flower late, the buds should be retained about the end of September or early in the present month, and the plants should also be kept outdoors until severe weather sets in. Then place them in a cool-house, freely ventilated, only using fire-heat to dispel fog and excessive moisture.

A Chrysanthemum Grower.



Late White Chrysanthemum Princess Blanche.

Chrysanthemum Harvest Home (*T. R., Sussex*).—The flowers of this variety do sometimes fail to open evenly all round when grown in a free manner in the open border. It is a weakness peculiar to the variety, and not to any other cause that we are aware. We think the cooler weather may be answerable to some extent. When freely disbudded the blossoms are more even in form generally. However, judging from the specimens you send us, they appear to be rather better than many others of the same sort in our own garden.

TREATMENT OF PLANTS IN FLOWER.

Failures in opening the blooms satisfactorily may occur by faulty treatment after the plants are under cover. The difficulties of amateurs who grow but a small number of plants are perhaps greater than those who cultivate a large quantity, because the latter have greenhouses filled entirely with Chrysanthemums, whilst many readers of Gardening have a bit of everything, as it were; and all must be grown together in one structure. To keep moisture-loving plants in perfect health, and, maybe, some requiring a fair amount of heat in the same temperature suitable to developing the blooms, is no easy matter. However, the enthusiast generally gets over such difficulties by care. For the first two or three weeks after being put under glass the Chrysanthemums must have abundance of air; these plants, therefore, should be arranged near the door or at one end of the house, so that a current may pass through by opening the front ventilation as well as the top. Fumigating, again, in a mixed house of plants should be carefully done. It is most necessary with Chrysanthemums. If this be not done aphis is sure to come later on when fire-heat is applied, and one cannot dislodge this pest when thoroughly hold of opening blossoms. I have found the X L All the safest material tried. It will not damage tender Ferns and is easily used. This liquid is a preparation from nicotine, and the vapour is made to rise by the aid of a small lamp. The appliances are sold with it, and when once obtained will last for years. Shade is desirable in the case of the early blooms more especially. Shade is effective during the first part of the morning. It prevents the sun from shining on the blooms when they are damp through the accumulated moisture of the previous night. After the surroundings have become dry, by giving air the sun does not damage so much, and, of course, assists colour. The blooms should be examined frequently as they open, and any decaying floret pulled out at once. If left decay will spread. One may also help to untwist the petals in the case of some of the curiously-formed Japanese sorts. This is done with a knitting-needle or the like. Incurved sorts may have petals that are shorter than the bulk pulled out, and the centre or cushions of the Anemone-flowered kinds is improved sometimes by the removal of ill-formed parts. These little attentions make a considerable difference to the finish of a blossom. I would not hasten the flowers by too much fire-heat. In fact, fire-heat, if the temperature is much above 55 degs., absolutely does harm; the florets lose in substance and colour and the blooms put on a distressed look. Chrysanthemums generally open their blooms in a satisfactory way if brought into a dry, airy temperature rather below than above 50 degs. Cold draughts may not be allowed after the flowers show colour. We arrange, therefore, that only a small amount of air shall pass through the front of the house in favourable weather, but always keep open a bit at the top.

Watering.

What watering is required should be done early in the day; and any plant wanting moisture at the roots is given an ample supply, so that the whole ball of earth is soaked, then left alone. Manures, in the form of liquids, are applied up to the time the blooms are nearly fully open, but in a weak state. Nitrate of soda and sulphate of ammonia are most powerful in causing the blooms to open quickly and adding colour. They are, however, most dangerous. Use only a quarter of an ounce to the gallon of water. Never sprinkle it over the surface of the soil.

Exhibiting.

To amateurs who contemplate exhibiting it may be well to mention that the National Chrysanthemum Society and all societies affiliated thereto insist upon an enlarged board on which to arrange the Japanese varieties. The old size for twelve blooms—namely, 24 inches

by 18 inches, and 6 inches high at back and 4 inches in front—is still used for incurved Chrysanthemums, Anemones, Pompons, and singles, the latter two classes being exhibited in sprays of three; the above size allows of the holes being 6 inches apart. The new board is 28 inches wide for a dozen blooms, 21 inches deep, and 7 inches high at back, 4 inches in front; the holes are 7 inches apart. A board for half-a-dozen blooms must be less wide, but the other measurements should be the same. Any exhibitor knows that it is not wise to lose a point through having faulty appliances. The boards then may be painted a dark green and well varnished. A nice finish here adds to the colours of the blooms. The flowers, again, should be well set up; when fixed near the boards the blooms look flat. To enable exhibitors to place their blooms well up off the boards, suitable cups and tubes have been invented. That called the "Springthorpe" is, in my opinion, the most simple. The back row of flowers especially must have a high altitude. For this purpose telescope tubes accompany the patent named; a few of these are necessary. The Japanese kinds, with their long, trailing petals, are those requiring such lengthy arranging. Incurved blooms may be set just 2 inches or 3 inches off the board. Pompon and Single Chrysanthemums may be wired to keep them in place. The proper positions on the stands for each bloom cannot be named; individual taste will blend the colours for a general effect. And the arranging of the larger flowers in the back row and prominent ones in corners of the stand need hardly be mentioned. Neatly-written cards with the names, fixed in front of each row of three blooms, give the final finish, and add to the interest of an exhibit. A stand of flowers without names is disappointing. H. S.

Chrysanthemums and the Celery-fly (*Heather*).—Your plants appear to be affected with the Celery-fly, the appearance of the leaves of the Chrysanthemum and that of the Celery foliage sent to us being exactly similar. The depredations of this insect are generally made early in the summer, say May and June, although there is a recurrence of it sometimes later in the season. This is the case evidently with you. The usual remedy of dusting with soot should prevent the evil spreading, and failing this, a solution made from boiling Quassia-chips and syringed overhead would check it.

Early Chrysanthemums.—To those who have not yet grown Pompon and early-flowering Chrysanthemums in the garden I would say—give them a trial and you will be charmed. For six weeks the front of my Rhododendron border has been a mass of bloom, and will remain so, more or less, until frost comes. The position is sunny and sheltered from north winds; the soil good but not too rich. The taller kinds, such as Mme. Desgrange, Orange Child, Alice Butcher, Mme. Marie Masse, are at the back; and Blushing Bride, Bronze Bride (with the dwarf kinds), Piercey's Seedling, Little Bob, Canari, Golden Fleece, Flora, and others in front. I cannot grow the late kinds so far north. I have always taken cuttings, and also lifted the old roots, but this winter I shall leave some of them in the ground, protecting them with ashes.—Heron, *Lancaster*.

THE GLADIOLUS.

These gorgeous flowers are not so much grown as they deserve. For beautifying the flower-beds or for cutting to furnish large vases few flowers can equal them. We grow them for the double object of getting extra large bulbs during winter and spring and for yielding plenty of fine spikes of bloom. Our mode of culture is briefly as follows—viz.: We lift the bulbs in October, or before any very severe frost comes, or enough to freeze the soil; but we like to leave them in the soil as late as possible. They are spread out on the floor of any cool glass-house or shed to dry, and after the tops are quite withered they are cut off just above the bulbs, which are then packed away in boxes, and placed in any cool, dry place secure from frost, where they remain until the following March. During the winter the plot of ground intended for them is deeply cultivated and liberally enriched with manure, and left as rough on the surface as possible. About the end of March the soil is levelled down, and the bulbs are planted in lines similar to Potatoes—that is, rows about 3 feet apart, and bulbs in the rows 1 foot apart. We plant with a spade, one man lifting the soil with a spade while another places a bulb in each hole, the soil is levelled over them, and beyond frequent surface stirring with a hoe little else is needed. They commence to push up their flower-spikes in June, and in July and August are in full bloom. When strongly grown each stem will yield three or four good spikes, and in cutting the top spikes care must be taken not to cut so low down as to cut the succession ones; but if the first is removed the lower ones develop more rapidly. J. G., *Gosport*.

ORNAMENTAL GRASSES.

During the summer and autumn months the majority of the hardy Grasses are conspicuous in gardens where hardy plants receive attention. For planting on the outskirts of the lawn, on the margins of lakes, streams, and waterfalls, it would be very difficult to find more suitable plants for the purpose than the ornamental Grasses. Their season of beauty is not nearly so fleeting as some people seem to suppose, and it is equally certain that they add more charm to the hardy garden than do many of the dearer and rarer plants whose floral beauty is visible for but a week or so. Altogether the hardy Grasses are exceptionally useful plants. One of the earliest to flower, and perhaps the easiest to grow, is the

The Silvery Reed Grass (Arundo conspicua).

New Zealand Reed (Arundo conspicua) (see illustration). It is handsome, but not so vigorous or so bold as the Pampas Grass. Its long, drooping, silvery plumes are exceedingly graceful, and when planted in bold masses very fine effects are produced. It thrives splendidly in dry soils, but prefers a moist, rich, and well-drained loam. It rarely exceeds 7 feet in height.

A. Donax is another grand plant, with strong stems several feet long, and broad, flat, glaucous green leaves. A. Donax variegata is a beautiful variety, with white and green leaves. Though not such a strong grower as the species, it is a very useful companion to it. Though perfectly hardy, it is seen to better advantage when treated as a pot-plant and grown in a cold conservatory. All the Arundos delight in plenty of water in early spring and summer.

Gynerium argenteum (Pampas Grass) has been an inmate of our gardens for upwards of fifty years. It is a native of the plains of South America, and is one of the most graceful of all hardy plants. It does not thrive satisfactorily in cold, starved soils, but prefers moist, rich loam mixed with well decayed leaf-mould. If possible, a sunny position should be selected, and care should be taken not to expose it to north and east winds, as these do more harm than frost. Its huge flower-spikes are produced in September, just as the hardy flowering plants are on the wane—consequently its value is much enhanced. Copious supplies of water should be given during the growing period. Before winter sets in the plant should be cut down and the crown covered with Cocoa-nut-fibre, etc., to prevent the snow from lodging in the centre, thereby causing the crown to rot. Plants are readily raised from seed sown in cold frames, or old plants may be divided in the month of April. Ajax.

Helianthus Miss Mellish.—All who want a good perennial Sunflower should give this kind a trial. It is strong-growing, and attains a great height, when it branches out and gives beautiful flowers. The flower-stems are long, and can be used advantageously in a cut state. If it is once established it will not be lost readily, as the strong roots run all over the ground. It is best grown on a somewhat poor, dry soil, where it will not get so tall; or it may be cut over when the shoots are about a foot high in spring; but this reduces the size of the bloom.—J. Crook.

Snowdrops and other spring bulbs at Christmas.—Will you kindly inform me in your next number of the Gardening Illustrated the time to plant Snowdrops, Tulips, and Narcissus for blooming at Christmas? I have a glass-house heated by 4-inch pipes. Also, what temperature required day and night? —Wm. Thompson.

*** Plant Tulips and Narcissi at once, using rather deep boxes and a light loamy soil. Set them beneath the greenhouse bench for a few weeks, and then bring to more light and heat, still keeping them covered over until growth of at least 3 inches is made. A temperature of 45 degs., rising to 50 degs. or 55 degs., according to the state of your bulbs, should be ample. In this connection a great deal will depend upon whether we are favoured with bright weather or not. Pot up the Snowdrops now, and keep in a cool pit or frame until early in December. These strongly object to forcing from the first, and must be treated steadily.

INDOOR PLANTS.

POTTING MALMAISON CARNATIONS.

A GREAT many rooted layers of these increasingly popular Carnations are annually potted up at this season; mine are being done this week, being well rooted into the Moss. I do not turn my old plants out-of-doors or into a pit for layering, but keep them in a cool shady greenhouse. The Moss has become permeated with white rootlets, these protruding in all directions; they will be severed from the parent and potted, Moss and all, into 3 inch pots. Although my plants will each have three or four strong growths, I do not care to put them into too large pots to start with, finding it far better to give another shift, say, in November, using then a 4½-inch pot and wintering them thus. At first I give them quite a light fibrous loam, containing a large amount of natural grit—in fact, it comes from the sides of carriage drives and pleasure-ground walks, when they are edged in the spring, and is laid up for twelve months before being used. At the second potting, however, I like to give the plant half of this material and half of a stronger loam, such as is used for Vines and Peaches, as the Malmaison Carnations seem to prefer a somewhat stronger rooting medium than the ordinary run of Carnations, the great thing being to keep it open by an addition of road-grit or coarse sand, and to drain the pots well. Potting completed, the plants will be returned to the shady greenhouse, syringed on fine sunny days for a fortnight, and kept free from draught. In November I remove them to an extra light, airy house, exercising great care in watering, as the least carelessness in this matter is liable to produce rust and spot. I am afraid that many gardeners who still cling to the old practice of turning their old plants out into the open garden for layering will this year find rooting take place very slowly, and many layers fail altogether, the weather having been so wet and many of the nights cold. Indifferently rooted Malmaison layers invariably turn yellow and die off after potting, whereas those rooted under the mossing system indoors are proof against all the evils arising from inclement weather. J.

Fuchsia General Roberts.—This is a capital kind when grown in a free and natural manner for the decoration of the large greenhouse. The clusters of richly-coloured blossoms hanging from the roof present a decidedly cheerful feature at this time, the flowers being large, showy, and freely produced over a long season. To attain this end the plant should be allowed unrestricted growth from the first, growing it to a single stem and allowing it to branch in its own way. When fully grown the flowering branches may be spurred back.

Luculia gratissima.—This is one of the most welcome, as also the most fragrant, of greenhouse shrubs in bloom in autumn, and for the sake of its fragrance, apart from the ease with which it can be grown, it should be included in all collections of greenhouse plants. The species is particularly well suited to the larger greenhouse, where ample room can be given. Its fragrance is always appreciated because not overwhelming. Among autumn-flowering subjects this is of the greatest value, very little warmth being needed to bring its flowers to perfection. The plant is comparatively easy growth, and if liberally supplied with root-room and given a rather generous treatment while growing will not lose its foliage so much as is usually seen. A somewhat vigorous shrub by nature, it will endure a fair amount of feeding. The species come from the Himalayas.

A seedling Ivy-leaved Pelargonium.—Being interested in the cross-fertilisation of plants, I was glad to see the note of "B." (in No. 968) on the Pelargonium he had raised, a cross between the Ivy-leaved and Zonal Pelargonium. I have for several years been cross-fertilising between these two sections of this favourite flower, but I cannot say with any success. I did, three years ago, get a seed to germinate, the foliage of which lost the character of the Ivy-leaf in shape; the stem is also much shorter in the joint and more robust. The flower is pure white and double. I have named it "Diamond Jubilee," as it was not until this year that it reached its proper form. The whole plant measured about 2½ feet by 2 feet, stood well up above the pot, and carried about fifty trusses of blooms.—EDWARD DAVIES, *Mayfield, Moorland road, Weston-super-Mare.*

MICHAUXIA CAMPANULOIDES.

ALTHOUGH over 100 years have elapsed since this plant was introduced from the Levant it is strange that so few grow it. It is one of the handsomest and most striking biennials we have, and few things better repay good cultivation. We saw, some time ago, a group of it upon a knoll of light sandy soil, and the plants being in flower they made a striking feature. The seed was sown in July of last year, and when large enough the plants were transplanted to their present position, where they soon formed thick, fleshy roots and large, spreading tufts of deeply lobed, rough, hairy leaves. The flower-spikes began to shoot up early in June, and some of them attained a height of nearly 6 feet. They branch freely into a pyramidal head, bearing large, white, purple-tinged flowers in great profusion. They sometimes live and flower for the third or fourth year, but in this respect they are uncertain; therefore by far the best plan is to raise a batch every year, and then flowering specimens can always be assured A warm, sheltered border and a good depth of soil are all

Michauxia campanuloides.

the plant requires, and it is so striking, bold, and stately when well grown that the cultivator is amply repaid for any little trouble he may have taken with it.

CLEMATISES.

THE Clematis family comprises a host of useful climbing plants. Vigorous in growth, hardy, and of good constitution, they are admirably adapted for running over arbours, old doorways, arches, etc. With a careful selection some varieties may be had in flower from April until the end of September. They are exceedingly free flowering, the colours being rich and varied, ranging from pure white to blue, through mauve, red, rose, crimson, etc. To do them justice rich soil is absolutely necessary. The soil which meets their requirements best is composed of rich loam, with either a little chalk or lime-rubbish mixed with it. Good drainage is of great importance, as the Clematis detests a heavy, stagnant, cold soil. Good mulchings of half-rotten manure should be given occasionally, which may be forked (not dug) into the soil early in spring. Water must be freely given during dry weather, and manure-water occasionally will be of immense benefit to them. For general purposes the Clematis is divided into two sections: (1), those which flower on the young wood, and (2) those which flower on the old wood. It is in the pruning of Clematises that so many amateurs meet with only partial success. Before attempting to prune, it is absolutely necessary to know which section the varieties belong to, as the mistake frequently occurs in dealing out the same kind of treatment all round. This difficulty is easily surmounted if the time of flowering is observed by the operator. All spring or early-flowering varieties belong to the patens, florida, or lanuginosa types. With these it is necessary to prune in February or early in March. All the very weak and part of the old flowering wood should be taken away, and only the vigorous, well-ripened growths should be trained in for flowering.

With the Jackmani and Viticella types the pruning must be more severe, and should be performed early in November, cutting down the whole of the wood to within 6 inches to 9 inches of the soil. The names of a few of the best varieties for ordinary positions, placed in their proper sections, may be of some service to readers of GARDENING. To begin with the early blooming sorts, I will first of all consider the

PATENS VARIETIES.

The flowers are above the average size and delicately coloured Though perfectly hardy, the plants are specially adapted for planting in sheltered positions or in corridors, and also produce beautiful effects planted in beds protected from severe spring frosts. Miss Bateman is very hardy and free flowering; white with a cream band. The Queen, large deep puce, flushed with violet; very distinct. Lady Alice Neville is a handsome variety with large flowers; pinkish-lilac with pale mauve bars. Miss Crawshay, pink, flushed with heliotrope; very fine. Albert Victor is a first-rate variety of good constitution, lilac, with lighter bars. Edith Jackman has very large flowers, white, shaded with delicate pink; a choice variety. Lord Derby, large, bluish-mauve, with conspicuous reddish-purple anthers. Lord Londesborough, very large, deep mauve, purplish-red band. Mrs. Quilter is a very profuse bloomer. The flowers are pure white, of good form and substance. Fair Rosamond, light blue, red bar.

FLORIDA VARIETIES

Here the flowers are double or semi-double, and although they thrive out-of doors they are seen to better advantage when grown in pots for conservatory decoration. A selection of the best varieties should include the sweet-scented variety named Duchess of Edinburgh. The flowers are very large and pure white. J. G. Veitch, light blue; very fine. Countess of Lovelace has large bluish-lilac coloured flowers with yellow anthers. Mrs. G. M. Innes, large lavender blue. Elaine, violet flushed with purple. Belle of Woking is very distinct, colour pale heliotrope; very free flowering. Lucy Lemoine, pure white with conspicuous yellow antlers. Enchantress, white, exterior of petals suffused with pink; good grower.

LANUGINOSA VARIETIES.

All the varieties mentioned under this heading thrive wherever the Patens varieties succeed. The flowers are very large and the section is a valuable one. It contains many good things, but the undermentioned are perhaps the best of them: William Kennett, deep lavender; extra fine. Grand Duchess has large bluish-white flowers slightly edged with rose. Blue Gem is one of the best; its flowers are pale blue in a young state, changing to satin mauve with age. Lanuginosa is a capital sort with extra large pale lavender-coloured flowers. Beauty of Worcester is another fine variety with flowers of a bluish-violet shade. Fairy Queen, soft pink with deeper bars; very distinct. Lady Caroline Neville, French white with mauve bars; distinct and free flowering. The Shah is a vigorous grower with bold flowers, colour deep lavender changing to lilac.

JACKMANI VARIETIES.

The varieties mentioned in this group are the hardiest and most profuse bloomers of the family; succeed well in nearly all positions. Guiding Star, large purple, shaded crimson. Tunbridgensis is very large and free flowering, dark blue shaded with purple. Lilacina floribunda, pale lilac with deep veins. Jackmani is unquestionably the finest all-round Clematis, as it possesses a good constitution, is of vigorous habit, and exceptionally free flowering. The flowers are of an uncommon shade of violet-

purple. A good companion to it is Jackmani alba. The pure white flowers, though not borne with the same freedom as the type, are produced freely enough to entitle it to a place in the garden. Magnifica is very distinct, with large, bright, reddish-purple flowers. Star of India, puce with red bars. Mrs. Baron Veillard is very vigorous and free flowering; colour lilac-rose. Gipsy Queen is a capital grower, flowers large, rich velvety-purple.

VITICELLA VARIETIES.

The varieties belonging to this section bloom about the same time as the Jackmani group. They are large-flowered, blooming in dense masses, and of great value on account of the long time they continue in beauty. Thomas Moore, rich purplish-violet; Venosa, reddish-purple, with prominent veins; Mrs. James Bateman, pale lavender, streaked with a deeper shade, very handsome; rubra, large crimson-purple, very free flowering; Earl of Beaconsfield is a lovely variety, with large rosy-purple flowers of much substance and perfect form; Hendersoni has large bell-shaped, bluish-purple flowers. H.

EARLY FLOWERING BULBS.

ROMAN HYACINTHS.

THESE Hyacinths are very useful flowers for forcing, as they can easily be had in blossom during December and January. The bulbs, although not nearly so large as those of other Hyacinths, often produce two spikes of blossoms each. They are of the purest white imaginable, highly and sweetly fragrant, and well adapted, in a cut state, to use in glasses for room and table decoration, or as sprays, with a bit of fern, for personal adornment for either a lady or gentleman. To have them in bloom by the middle of December they should be potted as soon as obtainable. I have found a good time for this potting to be from the end of September to the end of October (batches thus managed give a good succession), and I have always had plenty of their blossoms from the middle of December onwards. The pots intended for them must be all quite clean and dry inside. Good and efficient drainage must also be provided, no matter what size the pots may be. Single bulbs may be potted in 3-inch pots. Three bulbs may be put into a 4-inch or 5-inch pot, and five bulbs may be placed in a 6-inch pot, four round about and one in the centre of the same. The latter number have a pretty effect when they come into bloom. The best soil for them is a mixture consisting of loam, decayed manure, and sand—two parts of loam to one of manure and sand. When potted, the tops of the bulbs should just be seen above the soil, and no more. After this they should be buried in ashes to the depth of 6 inches. I pot all my bulbs, then set them close together in a cold-frame, and put the ashes on the top of them afterwards. No water is given before the ashes are put on, as over-dampness is very liable to make the bulbs rot. In a week or so after being covered with the ashes the roots begin to run in the soil, but they are left undisturbed until about three weeks before they are wanted in bloom, then they are taken out of the ashes and transferred to a house where the temperature ranges from 50 degs. to 60 degs. Here, with plenty of water at the roots, they soon push up flower-spikes. When in blossom they will do well in any ordinary greenhouse or conservatory, and a dry atmosphere is most favourable for the bloom lasting long. Supposing some hundreds to be potted at first as advised, and only fifty or so are needed to flower at one time, the whole may be taken out of the ashes together, and those not wanted just then may be set in a cold-frame, kept safe from frost and too much moisture. By introducing a few from these into warmth occasionally a long succession of them may be had; but it is for very early work they are most valued, and they certainly deserve wide culture for that purpose. H. B.

Rhododendron Princess Alexandra.—The waxy-looking blush-white flowers of this variety are very charming, and being somewhat freely produced on comparatively small plants, this Rhododendron should be freely grown where greenhouse species have a place. Blush-white at first, its flowers become pure when well expanded, and, being substantial-looking, its trusses of bloom are very attractive.

GARDEN PESTS.

Asters dying (*Mair*).—The so-called white worms are little insects belonging to the family Poduribæ or spring-tails (Lipura ambulans). This species, however, has no power of jumping. If what you have done does not have the effect of killing them, try watering with a strong solution of nitrate of soda. As regards when you could replant the ground on account of the dressing of lime that you have given, it is very difficult to give an opinion without knowing the amount used and the nature of the soil, but I should imagine, unless you used a very large amount, you would be quite safe to plant in the course of a month.—G. S. S.

Lilium lancifolium diseased (*Miss T. A. Vulliamy*).—Your Lilies are attacked by the Lily disease, Botrytis cinerea, a most destructive fungus, and one which seems to spread very rapidly from one plant to another. As soon as the slightest sign of it appears on a plant it should be sprayed with "Bordeaux-mixture," which is prepared by dissolving ¾ lb. of carbonate of copper in a little warm water, place it in a vessel that will hold 6 gallons of water, slake ½ lb. of freshly-burnt lime and mix it with water, so that it is about the thickness of cream, and strain it into the solution of copper through some coarse canvas, then fill up the vessel with water. In the course of two or three days the plants should be sprayed again.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

1936—**Gardening abroad.**—I would be most thankful to know through your valuable paper in what part of America or other foreign country gardening would be most likely to be prosperous, or give address of foreign agent or person who could be communicated with on the subject?—SUBSCRIBER, G. I.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1937—**Fruit-tree snags** (*X. Y.*).—Now is the time to cut them off.

1938—**Show basket of vegetables** (*Basket*).—The judges were quite right.

1939—**Seedling perennials** (*F. Hindle*).—Keep in a cold-frame, especially the Gaillardias, and plant out in the spring.

1940—**Heating span-roofed house** (*Fern*).—We should use the 4 inch pipes for the flow, as then a larger surface would be heated.

1941—**Moss on lawn** (*Shakespeare*).—We have answered several queries about this matter lately. Kindly look through recent numbers.

1942—**Crickets in greenhouse** (*Constant Reader*)—Mix a little oatmeal and salt and place near their holes, or pour a little carbolic acid into them.

1943—**Begonias in winter** (*Gloucester*).—Lift the tubers and store in silver sand in a dry place, free from frost during the winter. We presume you mean tuberous kinds.

1944—**Use of sea-sand** (*On Yon Bonnie Banks*).—We do not like sea-sand for garden work. But whenever so used it must be thoroughly washed from saline moisture contained in it.

1945—**Heating greenhouse** (*G. W.*).—You will find several oil and gas-stoves advertised in our pages. We do not like to recommend one over another when so many are equally good.

1946—**Treatment of Lilium auratum bulbs** (*L. U. X.*).—You might leave these in the ground under such conditions as you describe, but they will be safer if not allowed to get too wet.

1947—**Planting Anemones** (*W. Adams*).—There is no better time than the end of this month, and again end of February or early March. By planting in two batches you would extend the flowering season considerably.

1948—**Christmas-flowering Holly** (*Allegin*).—Hollies do not flower at Christmas. Perhaps you mean Viburnum Tinus (Laurestinus)? If you can send us a small twig of the plant you refer to, we shall be pleased to name it for you.

1949—**Arums not flowering** (*Ignoramus*).—Arums should be growing now. If not very forward, remove the offsets and repot into rather smaller pots for such strong growers. You will get bloom then. The offsets can be potted on too.

1950—**Exotics and Ferns** (*I. M. F.*).—Please give us some idea of your accommodation, as exotics vary from one to ten or more feet high. We may say, however, that almost all could be grown with Ferns where there is no limit to the heat obtainable.

1951—**Eucalyptus sickly** (*Miss C.*).—You have most likely gone to extremes in watering. But it may be some large worm is disturbing the roots, which the Eucalyptus much resents. We do not think draught can be the cause, but the plant likes as much light as possible.

1952—**Clematis for south wall** (*Monkseaton*).—If the variety is montana it must not be pruned hard, as this flowers upon the old wood. C. Flammula blooms later in the summer, and upon growth of the current season. Give a dressing of rotten farmyard or stable-manure.

1953—**Hollyhocks diseased** (*R. S.*).—The leaves had evidently shifted out of their insecure covering, as none came to hand. Kindly send again. No doubt, however, it is a case of the Hollyhock disease. If you refer to GARDENING, for July 31, of this year, you will find a remedy described.

1954—**Dressing for beds** (*H. B. P.*)—A slight dressing of lime and soot mixed can be now dug into the beds previous to planting the bulbs; but if it is incorporated with the soil in quantity it would possibly burn the bulbs. Another dressing can be given after the bulbs have been lifted.

1955—**Culture of Oleander** (*E. M. L. B.*).—It is very wrong to tear away a quantity of young roots. Plants seldom make useless root growth, and yours would only grow more of the same. This is probably the cause of your failure. We do not think you would overwater, as it is a moisture-loving subject.

1956—**Quantity of glass for house** (*Fern*).—You require 700 square feet for the roof; but there will be the heads as well, and, not allowing for the part of the doorway, you will want 70 square feet extra here. This is close measurement, and does not allow for breakage. You had better procure 800 square feet.

1957—**Plants for bed** (*Prestonian*)—We think your piece of ground too small for strong-growing Roses and Dahlias. Confine yourself to Pansies, bulbs, Begonias, and such dwarf-growing Roses as the Polyanthus. You might have Clematises in the corners marked 1 and 2, but do not try too great a variety of subjects.

1958—**Oak trees dying** (*Runner*).—We should think something is attacking the roots of your Oaks, as the soil is very suitable to them. If not, they would not have grown all the time and now suddenly fail. A heavy dressing of fresh soil could do no harm, especially if you were to remove some of the old soil first.

1959—**Treatment of Parma Violets** (*Miss G. D.*).—Leave the lights off, except during really bad weather. A close and dry atmosphere is the cause of your Violets being attacked; but we expect it is red-spider, and not thrip, which you are troubled with. Overhead watering is beneficial so long as the plants do not damp.

1960—**Blighted Ferns** (*G. W.*).—Your plants are not blighted, but much infested with thrips and red-spider. Your atmosphere is evidently too dry. Some of the Ferns are simply dying down because they are not evergreen varieties. Cleanse the plants by mild but frequent use of one of the many insecticides advertised in our pages.

1961—**Potting Hyacinths** (*Hyacinth Glow*).—Pot the Tulips in January, early; the Hyacinths and Narcissus can wait until the end of that month. But so much of, in fact, the whole matter, will depend far more upon the treatment accorded. You can easily hurry them on, or retard them, during the last month, according to season and condition.

1962—**Heating houses** (*Doubtful*).—We do not think you would find the water circulate well in your second plan, where there appears to be no return from the side pipes. The amount of piping shown in your plan should give you almost a stove temperature. We should certainly have the main flow a 4-inch pipe in preference to one of 3 inches.

1963—**Making rock-garden** (*Helston*).—We have frequently had notes upon the rock garden and its construction. Procure the index of last volume, and if you cannot find just what you want, we shall be pleased to give you the additional information. Now is an excellent time to form a rock garden, as many subjects could have no better time for removal.

1964—**Border Carnations** (*On Yon Bonnie Banks*).—Of course you mean border Carnations, not the Tree or winter-flowering section. The border kinds should stand the winter, especially if you could place a little very gritty soil around them, and ward off any superfluous moisture should the winter be mild and damp. A window is not at all suited to Carnations.

1965—**Management of boiler** (*J. W.*).—The lower door is for regulating the draught. You have been keeping it open entirely, and now ask if this would be a good plan? Certainly not, or why have the expense of such a door at all? We know the boiler to be a good one, and would advise you to write to Messrs. Messenger and Co., the makers, stating your difficulty.

1966—**Planting Vines** (*Inquirer*).—You do not say length of greenhouse before adding the 15 feet. Do you want Vines in this additional length only, or through the whole house? You could not do better than confine yourself to Black Hamburgh, and plant 5 feet apart. Plant in such a way that roots can grow both inside and outside, making up a rich and loamy compost, and giving good drainage.

1967—**Creepers for north aspect** (*E. D*)—Honeysuckles, Passion-flowers, Ceanothuses, Cotoneasters, and any of the strong-growing Roses would cover your wall quickly. Fix some strands of wire to the wall with the spikes sold by ironmongers for this purpose. You will probably not find the Red Poker (Tritoma) hardy enough, but the other subjects are suitable. Why not use Gentiana acaulis for the edging?

1968—**Bitter Tomatoes** (*Denmark*).—When Tomato fruits are bitter it is obvious that the plants either are growing in obnoxious soil or the atmosphere is injurious. You do not say whether your plants are within a house or growing outdoors, and we can have no means of judging of the surroundings. If within doors try the effect of some weak lime water once a week. If outdoors then it is too late now to find any remedy.

1969—**Dahlias from seed** (*H. Edwards*).—New varieties of Double Dahlias are obtained from seed. But, like other double flowers, you cannot get seed direct from one that is very double. The seed is saved from semi-doubles that have been carefully hybridised, and even then only a small percentage turn out double. If carefully selected seed be purchased, you may perhaps be even more fortunate than your friend.

1970—**Eucharis Lilies and Stephanotis** (*I. M. F.*).—You can purchase both at any date, but it would perhaps be best to have the Stephanotis early in March, and dry tubers of the Eucharis Lily as soon as possible, potting these on into a strong turfy compost in which a little very old cow-dung has been mixed. Both will need a temperature of 60 degs. to 70 degs, and an additional 5 degs. will do no harm.

1971—**Carnations not flowering** (*O. F.*).—Unless we know what class of Carnation you have, we really cannot say how to treat. If border varieties, they should stand outside, provided you keep excessive wet from them. You have probably been a little too liberal with them, nor do we care for the artificial-manure you name as a fertiliser for Carnations, having found it full of small maggots a few weeks after being moistened.

1972—**Propagating Passion-flower** (*A. E F. Whaplove*).—Passion-flowers are propagated by cuttings of young wood taken off just below a leaf, and about 4 inches long. Insert in a sandy and peaty soil beneath a bell-glass, and keep close in a greenhouse temperature. Any time from May until September is a suitable period. We have selections of Roses for various purposes appearing soon. Refer to these for suitable standards.

1973—**Fir-trees bare** (*Map*).—The Laurels were the cause of your Fir-trees being bare at the bottom, but this would sure to have occurred as the Firs grew older, especially as they are only 6 feet apart. Try Ivy upon the fence. No plants will do well beneath Fir-trees; the resin from roots and fallen needles is fatal to all but a few native Mosses. You could grow such Roses as Emily Dupuy, Gloire de Dijon, and Dundee Rambler over your exposed porch. These are very hardy.

1974—**Twelve best Tree-Carnations** (*C. C. H.*).—You will find the following a good dozen winter-flowering Carnations, and to give a wide range of colours: Winter Cheer, Duke of York, La Neige, F. Thoday, Reginald Godfrey, Mary Godfrey, Improved Miss Jolliffe, Lizzie McGowan, Mrs. H. Cannell, Uriah Pike, Whipper-in, and Mme. de Falbe. Get the "Carnation Manual," published by Messrs Cassell and Co., La Belle Sauvage, Ludgate-hill, London. We think the price is 2s. 6d.

1975—**Walnuts** (*Inquirer*).—These are often gathered too early. If growing on Grass it is well to let them fall, picking up once a day. Laid into a heap for a short time they heat just a little, then shell their green coats easily. They need to be well cleaned and dried before storing. It is a good plan to place a quantity into a clean sack and run them up and down several times. Store in deep cream pans, with just a little fine salt strewed amongst them, and keep tied down in a cool but dry place.

1976—**Plants for unheated greenhouse** (*Bertha Frost*).—Winter Carnations, Cinerarias, Primulas, Zonal Pelargoniums, Fuchsias, Deutzia gracilis, Spiræa japonica, Indian and Mollis Azaleas, Plumbago, Passion-flowers, Clematises, Roses of all kinds, Pteris tremula, P. serrulata, Double Violets, such bulbs as Hyacinths, Tulips, Narcissus, Ixias, and Lachenalias, Echeverias, Vallotas, Lily of the Valley, Mignonette, Abutilons, Veronicas, Hydrangeas. This does not one quarter exhaust the list.

1977—**Culture of Aspidistras** (*F. P.*).—Both the green and variegated forms of Aspidistra lurida need the same treatment. A compost of turfy loam and leaf-soil in equal parts, with a little broken charcoal and coarse sand, suits them well. They should be well drained, as, although they need plenty of moisture, both at the root and upon the leaves, any suspicion of stagnation is most harmful. They need no more than an ordinary greenhouse temperature of 55 degs. to 65 degs, and are one of the easiest plants to grow, also one of our best room and window subjects.

1978—**Preserving Tuberous Begonias** (*City Bird*).—Lift the Begonias as soon as the top growth decays. Lay the tubers on a shelf in the dry for a couple of weeks or so, and when the growth falls away from them easily, store the tubers in dry sand. You must keep them in a fairly warm room, or beneath the bench of a greenhouse. Next February or March they may be potted up into small pots, and planted outdoors again about the end of May. They will not have much growth on by that time, but will soon make grand plants again. You do not say what convenience you have, but a frame or greenhouse is necessary.

1979—**Heating greenhouse** (*H. Y.*).—To heat a structure 20 feet by 14 feet could easily be done by the use of a No. 2 Loughborough boiler, or any other upright horse-shoe boiler of an equal size. It is the simplest possible form of heating apparatus to fix, no brickwork being necessary. The fire burns from ten to twelve hours, if carefully stoked, and the cost of the boiler and fuel together is not by any means heavy. A double row of pipes round the inside of the house would fully meet your requirements, and maintain a generous temperature. We cannot recommend a brick flue, but you might succeed with some of the better forms of oil lamps.

1980—**Grape-Vine** (*Melon*).—The usual rule in pruning Vines making long growths is to cut back to one-third the season's length, as that rate of progress each year better establishes the rod, and renders it capable of fruiting its entire length each year. When too much of the previous year's length is fruited at once, then the following year the shoots often fail to carry fruit. In the case of side shoots or laterals, after the leaves have fallen, they should be cut hard back to the best leaf-bud near the main stem. A moderate warmth, say from 65 degs. to 70 degs., usually suffices to ripen off late Grapes, but earlier ones will ripen well with ordinary sun-heat. Much depends on the variety.

1981—**Young Peach-tree** (*Rusticus*)—Gumming in Peach-trees, such as you complain of in yours, is due to adverse soil. Your only chance of resuscitating it into health and vigour is by lifting it carefully, removing the present soil 12 inches deep, well breaking up the bottom, then adding fresh soil, which should be one half turfy loam, at least, and the rest soil from the kitchen garden. Mix with it wood-ashes and some fine crushed bones at the rate of a pint of the latter to a barrow-load of soil. Then replant the tree, but not too deeply, and after the soil has settled give it a good watering.

1982—**Strawberries for forcing** (*Anxious*).—Let your plants of V. Hericart de Thury Strawberry remain in their 48-sized pots, especially as the plants are well established. The crowns will plump up more yet, and should each carry next spring, if early forced, seven or eight good fruits. Shifting them into larger pots might start the crowns instead of resting them. When the plants have set fruit, thin out to seven or eight of the best, then give the plants a little weak manure-water to help swell the fruits. Keep near the glass, and have a temperature of from 60 degs. to 70 degs. Give no liquid-manure after the fruits begin to colour.

1983—**Hyacinthus candicans from seed** (*A. Bastow*).—It is quite easy to raise Hyacinthus (Galtonia) candicans from seed. I have grown some hundreds of flowering bulbs from seed sown in pans as soon as ripe, and kept in a garden frame or cool greenhouse through the winter It is rather late to sow now, as the seeds would scarcely germinate in the late autumn, though in gentle heat they will grow through the winter. Still, as they are quite hardy, it is hardly worth while to grow them in heat. If the seeds can be kept plump through the winter, a sowing in the spring would be advisable. H. candicans takes about four years to grow from seed to a flowering bulb.—S. W. F.

1984—**Rose mildew** (*Heron*).—There is no rule with regard to attacks of the Rose mildew, but it is usually seen worse on Tea Roses, as the foliage of these is more tender, and therefore more susceptible to attack. Sometimes great heat and root drought produce it, sometimes too much rain, at other times sudden changes of temperature, from hot days to cold nights. As your soil is light and porous, you may find another spring that a good mulching of manure will do good in any case, though dustings of sulphur or frequent syringings with sulphur paste in solution may do some good. It is rather late now to do much good. Dust with sulphur when the leafage is wet with dew if it appears next year.

1985—**Heuchera not flowering** (*H. O.*).—The Heuchera often proves a very difficult plant to flower. Specimens frequently appear in the best of health and grow rapidly, but never show signs of flowering. "H. O" had better divide the plants and grow them in different situations and exposures. In the rockery it often flowers well, as it does in many gardens when grown in a level bed, whereas in other gardens it has been grown, to our knowledge, for years in various sites without producing bloom On one occasion we have seen it flowering profusely in the shade, though a sunny spot is usually recommended. It seems indifferent to soil, as we have noticed it, this year, flowering equally abundantly in heavy loam as in a light, porous medium.

1986—**Nut-trees** (*J. S. H.*).—If Walnut-trees are very old it may be exceedingly difficult to feed or renovate them. The roots no doubt have got down into the lower clay, and fail there to find suitable food. To root-prune such trees would be practically impossible. You may fork up and clean the soil under the trees, and give not only a liberal surfacing of manure, but also pour in about the roots at any time—now or in the summer—a quantity of liquid-manure or sewage matter. You had better treat your Filbert bushes in the same way, but first cut out some of the older branches, so as to allow room for new growths to spring up. It is to be feared that in this case also the roots have got down into the clay.

1987—**Raspberries failing** (*G. H. G.*).—The failure on the part of Raspberry-canes to produce fruit in due season is not uncommon, and is usually attributed to something in the soil that the plants do not like, or wanting in it, that is needed. We infer that yours need some potash manures—such as kainit—given to the plants in May, and again in July, and well hoed in. A mulching of stable-manure in the winter should also help them, for the affection or fungus attacking the leaves is perhaps more due to poverty of soil than any other cause. You might, however, trench and manure a fresh piece of soil, and then get stock from elsewhere and plant it. That Raspberries should always fall in your garden is indeed surprising, and we cannot explain it otherwise.

1988—**Old Filbert-trees** (*Mereton*).—If your Filbert-trees are very vigorous the inference is that they need no special feeding. The best thing to do is to thin out about one-third of the wood or branches, leaving the youngest growths. If you find on them now plenty of catkins developing, you may be assured that it is not through lack of pollen that no fruit is produced. If there are very few or no catkins, then it will be wise to plant some common Nuts near to furnish pollen to set the tiny red blooms you will see on the points of the leaf-buds in February. Perhaps yours is but a poor variety, and not a true Filbert at all? If so, then you should obtain good Red and Gosford Filberts to plant elsewhere, and in time destroy the old bushes.

1989—**Transplanting Pansies sown in July** (*O. C. W.*)—You may safely place your seedlings in their flowering quarters if they are of a goodly size, and are quite sturdy and hardened off properly. If the seed was sown in July, the seedlings should be nice little tufts of growths by this time, and should very soon become nicely established, and before the hard weather sets in. Should they, however, be rather small and not properly hardened off, we should prefer to transplant them 3 inches apart in a cold-frame until the spring. They could then be lifted with a nice lot of soil at the roots, and would go ahead immediately afterwards. Keep the frame lights off, except when there is a heavy or continuous rain-fall, and during protracted frosts. This will produce a fine lot of plants, which should blossom quite early in the spring.

1990—**Strawberry - bed** (*F. P.*). — Strawberry plants so commonly fruit in nearly all soils that the question as to the presence or absence of lime seems not to be very important. Of course, you can try the effect of a lime dressing on yours, doing so as soon as all the runners and weeds between the rows have been cleared off, then gently fork the lime in. As you have, however, put on a dressing of manure lately, perhaps you had better leave the lime to the spring, then fork it in before bloom shows. We see no reason why you should not have a good bloom next year, unless any of your plants have gone blind. In that case they are worthless, and must not be employed to furnish runners. You should plant a few fresh ones on other ground every year to keep up a succession. The lime should be fresh slacked, and strewed thickly along between the rows.

1991—**Various** (*O. F*)—Brussels Sprouts of a good stock will give plenty of good Sprouts shortly. They do this all through the winter. They do not want liquid-manure unless the plants are late. A cold-frame in winter may be used to cover double Violets; or, if filled up to within 6 inches of the glass, be used to sow in at once Cauliflower, Cabbage and Paris White Cos Lettuce to stand the winter, for spring planting, or to store in it Cabbage Lettuce for winter cutting, or Curled Endive to cover up in the dark to blanch white. Bulbs need not be stored in sand to keep them for the winter, but if it be used it must be quite dry. Very fine sifted ashes will do also, but neither are essential. Liquid-sheep-manure is of about same quality as that from cows, seeing that both animals consume herbage chiefly.

1992—**Pears unfruitful** (*Harold*). — As your Doyenné du Comice Pears on the Quince-stock make no growth, as you say, it seems obvious that they need some feeding. But just now, as you have lifted and replanted them, the best thing to do would be to give a mulch of some good animal-manure, not only to wash in gently and thus feed the soil, but also to furnish the disturbed roots some protection should severe frosts come. A better time to give a little artificial-manure, phosphate and potash in equal parts, strewed on the soil and stirred in about and over the roots, would be early in May, when roots and leaves are both active. A little dressing of nitrate might be given in the same way rather later. As you have planted very shallow, a mulch of manure on the surface seems all the more needful.

1993—**Mouldy leaves** (*Maru*)—The Vine leaf is much affected with red-spider. The nearness of the open chimney may account for the dirt, and the nearness of the trees and overmuch shade to the thinness of the leaves and their lack of vigour Again, an oven beneath would generate a very dry atmosphere, which again breeds spider and aphis freely. Mildew comes from great dryness at the roots, and also from currents of cold air. You can do little good now, but when the leaves have fallen and the Vine is hard pruned, give the house a good washing with strong soapy-water, and give a good painting of strong soft-soap water, in which is stirred a wineglassful of paraffin to the gallon. A good fumigation with Tobacco-paper would do good.

1994—**Trees for east wall** (*Planet*).—You say the wall you wish to plant is on the west side of your garden—that, of course, gives you an east aspect. But as the sun does not reach it till twelve p.m., evidently you must mean a wall facing west after all. In either case, you can plant of Plums: Victoria, Czar, and Monarch for cooking, and for flavour Transparent Gage, Prince Englebert, and Coe's Golden Drop. Apples for flavour: King of the Pippins, Cox's Orange Pippin, Adams' Pearmain; cookers: Pott's Seedling, Bismarck, and Lord Derby. Both Red and White Currants will do well trained to the wall; so also will Gooseberries. As the trees cover the wall you can also cover the trellis above it with branches. A wall 100 yards long would take of trained Apple or Plum-trees one to every 4 yards, or say 24 trees in all, or say 20 trees, the rest of the space being occupied with Currants, etc.

1995—**Tomatoes in house** (*T. L.*).—We are very pleased to learn of the success which has attended on your labours in Cucumber and Tomato growing. If you plant a span house 80 feet long and, probably, 12 feet wide, you can put out fully sixty plants at 16 inches apart on either side, keeping them hard pinched to one stem only. We advise that you grow them in boxes, say 12 inches wide, 6 inches deep, and 32 inches long, putting two plants in each box. Use rough turfy pieces for drainage at the bottoms, which should have holes in them, and then fill up with fairly good turfy loam three-fourths, the rest being well decayed hotbed-manure, and some wood-ashes or grit. Rich manure should be avoided, but liquid-manure or sprinklings of good guano, etc., may be given to wash in in watering when the plants are in fruit. We do not know Harrogate Beauty, but Duke of York is very good.

1996—**A rough garden** (*Dick*).—As your land is heavy and sour, no doubt it would benefit greatly by a thorough trenching, so as to admit air to sweeten the soil. Trenching is a rather costly way of beginning, but it is best, and long enduring in its results. In performing this work open a trench to start 2 feet wide and 1 foot deep, breaking up the bottom soil well and leaving it there. Place on to that some long straw stable manure, which will form fibre and help to keep it open; then place the top soil of the next 2 feet trench on to that, and do the same throughout. Get that done at once, leaving the surface rough. About February give the soil a good dressing of

lime and soot, and well fork it in; then later, as cropping goes on, add some short, well-decayed manure, and dig in also. Such a course of treatment should soon get your ground into capital condition to carry crops. The best average time for summer cropping is in March and April.

1997—**Diseased Tomatoes** (*Scotch Tomato*).—If you propose to plant Tomatoes next year in the same soil as plants producing some diseased fruits now are growing in, we should say don't. That there are spores of the Tomato-fungus in your house and soil there can be no doubt. When you have cleared out the present plants, remove all the soil, then thoroughly wash the glass and roof for the winter. Do not plant in a border at all if you can avoid it. Get some boxes 10 inches deep, 12 inches wide, and 20 inches long. Fill these with good sweet soil from road trimmings or turfy loam, or if you must use garden soil take it rather from where Peas or Celery or Onions have grown, and not where Potatoes have been. Have some rough pieces of turf in the bottoms of the boxes before filling with soil. Put two strong plants into each box; they will do better so treated, and fruit better than if planted out in your soil. When the boxes are empty again wash them, then give their insides a good dressing of hot limewash.

1998—**Protecting Broccoli** (*E. A. S.*).—It is of little consequence whether Broccoli plants be laid to the north or any other aspect. The great thing is that the laying there checks coarseness, and tends to harden stems and leaves somewhat. Then the laying enables the stems, often, where leaves break out, the tenderest part of the plant, to be well covered with soil; also in very hard weather some Fern or straw may be littered over the whole of them. So much depends on the general effects of frost in any locality. Of course, vegetation that is coarse and sappy suffers quickly. Where Broccoli tends to grow gross it is a good plan to follow some other crop in planting, without digging the ground, making holes for the plants in it with a crowbar: that does much to check grossness and to harden tissue. You may think of that another year. In laying in your plants take out a spit of soil at one end of a row, put a fork in before the first plant, lift, to throw the plant on to its side, and put a spit of soil on top of the stem, and thus all through the piece.

1999—**Heating forcing-houses** (*J. E. H.*).—If you will look at the matter again, you will find that the boiler you mention is not intended to carry a pipe round a house, but to provide a flow and return along one side. They are capital little appliances, but you would not get even the smallest size of these into a house of the dimensions you name, and your house should be at least one foot longer. You would get plenty of heat. Why not use it for forwarding bulbs until you want it for the Tomatoes, etc? We would advise you not to attempt too many subjects. A few Tomatoes and Cucumbers will be all it would carry, but you could use it, after they were over, for housing "Geraniums," Fuchsias, Petunias, and similar subjects. Your position will be fairly suitable as you get plenty of sun, although somewhat exposed to keen winds. For some time in early spring the Tomatoes and Cucumbers will take up very little room, and if you do not attempt too great variety of subjects the house will be a great pleasure and easily managed.

2000—**Wall-trees** (*H. P. R.*)—Although there have been from time to time many diverse suggestions made with respect to finding other means of rearing trees to walls without nailing, yet none seem to have been generally adopted, and the old method of using oast wall nails and cloth threads is most employed. It is a cheap yet troublesome method, but if it has disadvantages in the decay of threads, their becoming nests of insect pests, and the injury to the wall, which inevitably follows constant nailing, yet no other method serves so well to bring the tree branches so close into the wall, thus securing the full benefit of the wall heat as does the old plan. The next best plan is to drive into the wall, 5 inches apart all over its surface, nails having ring or open eye heads, that thus permanently fixed, enable branches to be tied to the wall as needed. Wiring walls is far from being a success in every case. Trellising a wall with the latter might do, but there can be no doubt the less of such introductions between tree and wall the better. Try any local ironmonger.

2001—**Cinerarias** (*Amateur*).—The leaves of your Cinerarias are badly infested with what is known as the leaf-mining-maggot. If you examine the leaves carefully you will see them easily. A similar pest infests the leaves of the Chrysanthemum, often giving much trouble, and especially of the well-known Paris Daisy. The insects are the produce of eggs, deposited in the leaf by a small fly, and when germinated, the maggot finds food in eating out the green matter that lies between the fine upper and lower cuticles of the leaves. The best means of destroying it is by pinching between finger and thumb the moment evidences of it are seen on the leaves. Badly affected leaves should be picked off and be burnt; but your plants are kept in a too warm and dry temperature, and that has helped the insects. Cinerarias should be kept in a cool frame, where the temperature ranges from 40 degs. to 50 degs., being kept near the glass and covered up with mats at night, and kept there till flower-buds show. They may go into the greenhouse in a rather warmer temperature to bloom in December.

2002—**Tank for Water Lilies** (*Vatis*).—In the first place our correspondent should note that the article was upon "tropical" Water Lilies, and no notes therein can be applicable to her wished-for water-tank upon a lawn. To take out a hole as she describes will not do. The water would not stand in any case, her gravelly subsoil making this even more unlikely. It is absolutely necessary that it be concreted. A builder would do this. Certainly a slight slope of turf would look better, but the level of the Lilies should be nearly as high as the lawn, or they would only be visible when close to them. There was no Grass represented in our engraving, which was from a hothouse. Let the tank be 2½ feet deep, and if you could arrange for a small pipe, if only one of ½ inch in diameter, to supply water, and another to take away the overflow, it would be a great improvement. You had better have a larger outlet to take the flush of water from heavy rains. With a tap to the small pipe you can regulate your water level, and this will be found a great convenience in a small isolated tank. Of course, you can stand a few plants around the edges, if desired, but this would hide the Lilies somewhat. In your case we would use rather large pots, filled with cakes of old and decayed cow-manure and strong turfy loam. Simply stand the pots so that the Water Lilies are about 6 inches below the surface. All of this can be arranged before water is admitted. You cannot use the varieties enumerated in our previous notes. Select from the following: Nymphæa tuberosa var. flavescens, pale creamy-yellow; N. Marliacea ignea, bright rosy-crimson; N. pygmæa; N. odorata rubra, deep rose; N. odorata minor, a small flower well suited for your tank, white, tinged with crimson. Make the compost very firm, and when the Lily root is inserted, place some gravel or clay over the remainder of the surface. If this is neglected, a considerable amount of your compost will rise to the surface and mix with the water from time to time. You cannot accommodate many in so small a tank, and we should be content with four to six plants.

2003—**Plants for long, narrow border** (*G. P.*).—A very dry, narrow border, backed by a Laurel hedge, is about the most disadvantageous situation for the culture of perennials that could well be selected. The border, naturally dry, is made still drier by the roots of the Laurels, which impoverish the soil. Some perennials might exist in such a site, but could scarcely be expected to thrive. The Rose of Sharon (Hypericum calycinum) would be one of those most likely to succeed, while the single and double Periwinkles (Vinca) would doubtless grow. Rudbeckia Newmani, Anemone japonica, Erigeron speciosus, and Erigeron mucronatus are among the best perennials for dry positions, and Marigolds and Gazanias often flower freely under trying conditions. Showy annuals, such as Eschscholtzias, Coreopsis, Cornflowers, and annual Sunflowers might prove fairly satisfactory, if given a good start in well-prepared soil. Good-sized plants of Ivy-leaved Pelargoniums Mme. Crousse and Souvenir de Charles Turner could be put out in clumps during the early summer, if a barrow-load of prepared soil was apportioned to each clump, and a copious water-supply afforded till the roots had got a good hold of the ground.—S. W. F.

2004—**Heating lean-to glass-house** (*Beginner*)—We have seen some excellent results from home-made contrivances such as you propose, but glazed pipes as flues are very risky. At the hottest end they are very apt to fly or crack, and this lets out fumes from the fire that are deadly to all plant life. Nor do we think there is any gain over one of the small heating apparatuses advertised in our pages. Manure in the beds you mention would be serviceable, and would not harm the plants if properly prepared and some means of top ventilation provided—in fact, would be a great help for the subjects you name; but the heat arising from same would only last a little longer than when used for an ordinary frame. Even an ordinary oil-stove could be used during cold weather to better effect than the flue. Could you not arrange so that a stove of this description expended its fumes into a row of the glazed pipes? This would take the fumes clear and give much of the heat you would otherwise lose, besides never being at so irregular a heat as to crack the pipes. It would also be a tenant's fixture, whereas a brick-built stoke-hole would not. We would like to help you further, if you need, and will refer to this reply.

2005—**Various queries** (*Rose Hill*).—The largest Onion for either spring or autumn sowing is undoubtedly Ailsa Craig, globe-shaped. Bulbs of this variety from seed sown under glass at Christmas, the plants when strong being put out thinly into rich soil in April, have produced bulbs reaching 3 lb. each. The largest of the moderately early—that is, July—Cauliflowers from plants obtained by sowing seed under glass in February and planting out in April, is Magnum Bonum. The best point in a vegetable garden is neatness and good order in cropping, good representative crops and well cultivated, nothing too much, but everything useful in fair proportion. Do not omit good Herbs, also some good fruit-trees and bushes. As to flower-garden, our preference lies in plenty of good hardy flowers to cover a long season, and we dislike sacrificing everything to getting a show of tender flowers only just at one time of the year. That is what you should aim for. For early-flowering Chrysanthemums get Mrs. Hawkins, Mme. Desgrange, Lady Fitzwygram, Mychett White, and Mme. Marie Masse. A couple of distinct questions at a time, much less complicated, would ensure greater respect. Replies, it is desired, should have general as well as personal interest.

2006—**Rhubarb** (*Surrey*)—Rhubarb now carrying stalks and leaves is but creating strong crowns for next season's growth, therefore the stalks should be left to complete their work and die away. When that is done the old decayed matter may be removed, the soil lightly forked about the plants and cleaned; then they may have a dressing of long manure laid about them for the winter. No protection is required, but a little long straw or litter laid over the crowns in February will help to start them into growth earlier. A good time to prune Laurels is in March, then they soon break afresh. If you do not want too much growth from them, keep them hard pruned each year with a knife, but not with shears. Clematises may be pruned so soon as the leaves have fallen, by cutting the growths hard down if they be of the autumn-blooming or Jackmani type. All these bloom on the summer wood. The spring bloomers flower on the growth of the previous year, therefore you must with these simply cut out the older wood in the winter, and retain all the new, just shortening it back a little. Jasmines chiefly need some thinning and cutting out of the old dying wood, but not hard pruning. Gather your Scarlet Runner Beans when they ripen, lay them out to dry in a room or shed, and shell them in the winter when quite hard.

2007—**Propagating Hydrangeas.**—When is the time to propagate Hydrangeas, and how should it be done?—HAROLD.

*** *Take short cuttings of ripened growth as soon as possible now, cutting off below a pair of leaves and removing these. Insert in a sandy loam in an ordinary greenhouse temperature, and keep them rather moist. You can also divide the roots early in spring.*

2008—**Colour of Tuberous Begonia seed-pods.**—Mrs. Sharpe would like to know if A. J. Foddy means to infer that Begonia seed-pods which fall in a green state are useless?

*** *Yes, our correspondent when replying to A. J. Foddy, No. 1834, clearly states that the pods must be quite brown.*

2009—**Swainsonia culture.**—Would you kindly give me hints about the culture of and propagation of Swainsonia galegifolia alba?—MELON.

*** *Take cuttings of young growth next March, and treat them the same as we have fully described and illustrated in our issues for March 13 and 27, when dealing with soft-wooded greenhouse plants. An article upon seedling Briers and Roses is appearing shortly.*

2010—**Treatment of Lilium lancifolium.**—Is Lilium lancifolium to be treated the same as Lilium auratum? They have been for two years in the same pots, and have bloomed profusely this year, but I think the soil must be exhausted.—IGNORAMUS.

*** *It would be well to repot into a fresh compost of the same nature you have succeeded so well with in the past. Two years would certainly exhaust the soil.*

2011—**Treatment of Plumbago.**—My Plumbago has flowered well. It is in a 5-inch pot only, and is about 4 feet high and vigorous. Will it do in the same pot next year? If not, shall I transplant now or in the spring?—IGNORAMUS.

*** *Afford a double shift early in the coming year—i.e., put it into a pot two sizes larger than the one it now occupies.*

2012—**Carnations in winter.**—I have some Carnations, rooted layers and old plants, which have done well in the open ground this summer. Varieties: Germania, Yellow Queen, Duchess of Fife, Redbraes, Raby, Mrs. Muir, White and Crimson Clove. Could any of these be left out for the winter? The soil is light loam with gravel subsoil, and the position open and only slightly sheltered from the north and east.—L. U. X.

*** *There is no reason whatever why your Carnations should not stand out all winter. Your soil is favourable; besides this, all the varieties you name belong to the border section, and are quite hardy. The yellow-flowered varieties are the most delicate.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Stoney.*—Chelone obliqua.——*W. S.*—1, Young shoot of Lantana; 2, Vinca oculata; 3, Begonia Weltoniensis.——*Mrs. Leatham.*—Olerodendron fœtidum, a Chinese shrub, usually seen at its best in quite the south, as it is rather tender.——*Helston.*—Your Rose is certainly not the Pink Gloire de Dijon, but a Tea-scented variety named Comtesse Riza du Parc.——*H. Little.*—1, Gesnera sp.; 2, Anthurium Scherzerianum; 3, Cannot name, unfortunately, from such a specimen. Kindly send a flower.——*Troubled.*—Fiery Thorn (Cratægus Pyracantha).——*Ilex.*—The name of your plant is Hedychium coronarium. It requires stove heat.——*Mrs. F. F.*—1, Aster Novæ-Angliæ (New England Starwort); 2, A. lævis; 3, Cannot say, probably a seedling. Asters are very difficult to name, unless the flowers are very characteristic; 4, Chrysanthemum maximum; 5, Pyrethrum uliginosum; 6, Buphthalmum salicifolium.——*Constant Reader.*—Placing flowers between note-paper does not improve them. From its smashed condition we should say the plant is the Winter Cherry; the others are Annual Coreopsis, and the blue flower a Salpiglossis.——*R. Hunter.*—Ivy-leaved Toadflax (Linaria cymbalaria); 2, Oxalis corniculata rubra; 3, Kindly send better specimen; 4, Golden Rod (Solidago ambigua); 6, Verbascum olympicum; 7, False Cape Spurge (Euphorbia lathyris). *Scotus.*—Inula Helenium.——*M. J. Cowper.*—Odontoglossum grande.——*West Meath.*—1, Noyellow flower enclosed; 2, Achillea Ptarmica fl.-pl. (Double Sneezewort)——*J. Mc*—1, Andromeda sp.; 3, Grevillea robusta; 4, Palm of some kind, but specimen too small to identify species; 6, Schubertia grandiflora; 7, Acalypha musaica; 9, Pilea muscosa; 10, Ohiopogon Jaburan variegatum. Kindly send better specimens of others.——*J. Wyatt.*—1, Knotweed (Polygonum cuspidatum); 2, Escallonia macrantha; 3, Cyperus alternifolius; 4, Cotoneaster, but please send fruit; 5, Sempervivum arboreum variegatum.——*Constant Reader.*—1, Please send in flower; 2, Davallia Mariesi; 3, Adiantum decorum; 4, Acalypha musaica; 5, Cypripedium insigne.——*F. Hoare.*—The purplish Chrysanthemum is Mme. Marie Masse; the bronze, Piercey's Seedling.——*Vera.*—1, Clerodendron fœtidum; 2, Linaria purpurea.——*Acanthus.*—1, Woody Woundwort (Stachys lanata); 2, Saxifraga Aizoon; 3, Cornus Mas.——*A. W.*—Bladder-Nut (Staphylea pinnata). It is a shrub requiring fairly good soil. It must be a poor place that will not satisfy it.——*Cottager.*—1, Aster Amellus bessarabicus; 2, A. Robert Parker; 3, A. versicolor; 4, A. Novæ-Angliæ roseus (Rosy New England Starwort); 7, A. lunifolius; 9, A. horizontalis; 10, A. dumosus. The others were not in character.——*J. May.*—Evidently the variety Mr. Reynolds Hole. It is now cheap, but we cannot quote price.——*E. J. Fleming.*—The Fern is Nephrolepis exaltata; the other plant is Farfugium grande.——*T. Ryan.*—You sent too many kinds. Please send again those not named now; 2, Tree-Lupin (Lupinus arboreus); 3, A variety of Tuberous Begonia; 4, Leycesteria formosa; 5, Double Jew's Mallow (Kerria japonica fl.-pl.); 6, Escallonia macrantha; 7, Begonia Worthiana; 14, Phygelius capensis; 16, Polygonium vaccinifolium; 17, P. cuspidatum; 19, Plumbago Larpentæ; 20, Common Jasmine.——*A. Pallett.*—Solanum robustum.

Names of vegetables—*Poseman.*—Pea 1, Ne Plus Ultra; Pea 2, Criterion; but with Peas so old it is impossible to be certain of their names.

Names of fruit.—*Saltire.*—King of the Pippins.——*S. Mason.*—Hawthornden.——*H. E. Curtis.*—1, Reinette du Canada; 2, Northern Greening; 3, Hormead's Kernel; 4, Hawthornden; 5, Beurré Rance Pear; 6, Monsieur's Egg; 7, Autumn Bergamot; 8, Brown Beurré.——*J. H. B.*—Lady Henniker Apple.——*W. J. Dewar.*—Not Marie Louise, but evidently the variety Napoleon.——*R. Jamieson.*—Old Nonpareil.——*E. Firth.*—The Black Hamburgh Grape, but were very poor.——*J. Helsby.*—Brown Beurré, but we should much like to see the Pear when more matured.——*Rev. H. Price.*—Apple Warner's King——*C. M. Johnson.*—Winter Hawthornden.——*Glenner.*—We are not surprised at your remark—"A delicious eating

Apple." It is Cox's Orange Pippin.—*G. S.*—1, Pear Beurré Diel; 2, Apple Cellini; 3, Duchess of Oldenburgh; the yellow Apple is the Golden Pippin.—*D. H. D.*—Plums: 1, Emperor; 2, Red Magnum Bonum.—*Postman*—Name of Apple Manx Codlin.—*J. G. White.*—Yorkshire Beauty.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Blackberry.—Try any of the leading nurserymen for the Blackberries. They are not difficult to get.—*H. Dennis de Vitre.*—Try at any of the leading nurseries.—*Miss Clarke.* The Chimonanthus should not be difficult to get. Consult our advertisement pages. We cannot recommend individual traders; it would be unfair.—*C. C.*—The variety is quite an ordinary one, and has no special value.—*L. L. W.*—Write the Director, Royal Gardens, Kew, enclosing a stamped envelope. You will then receive a printed form.—*G. W. Allen.*—Write to Mr. Rochford, Broxbourne, or Mr. May, Dysons-lane, Upper Edmonton.—*On Yon Bonnie Banks.*—The GARDENING Index is published about the first week in March after the volume is completed.—*Hampshire.*—We know of no book on the subject, nor is the subject sufficiently wide to demand a separate work. You could get as much information from GARDENING as from any work upon such a topic. Ask questions, and you will receive a carefully considered reply meeting your case.

Erratum.—On page 445, query 1793, of Oct. 2, read Anthuriums instead of Antirrhinums.

Catalogues received.—*Bulbs for 1897.*—Messrs Albert Morris and Co., Carlow.—*Roses, Fruit-trees Shrubs, etc.*—James Walters, Rose-grower, etc., Wonford road, Exeter.—*Roses, Fruit-trees.*—Mr. Wm. Rumsey, Joynings Nursery, Waltham Cross, N.

LAW.

THE AGRICULTURAL HOLDINGS ACT, 1883, AND THE MARKET GARDENERS' COMPENSATION ACT, 1895.

KING *v.* EVERSFIELD.

A TENANCY at a certain annual rent, payable quarterly, either party having power to determine it by a three months' notice, is a yearly tenancy, and, as such, is within the Agricultural Holdings Act of 1883 and the Market Gardeners' Compensation Act, 1895.

Under a written agreement, dated October 22nd, 1886, Mr. King held some 5 acres of land at St. Leonard's-on-Sea "at the yearly rent of £19 12s, payable quarterly on the four usual quarter days for payment of rent in every year, and the tenant agrees to pay the said rent at the times aforesaid and to use the said premises as garden ground only, and to manure and crop the same in a husband-like manner. . . . The tenancy may be determined by either of the parties giving to the other three calendar months' notice to quit . . . . on any day of the year." The land was used as a market garden to the knowledge of the landlord previous to January 1st, 1896, and on October 17, 1896, the landlord gave the tenant notice to quit on February 1st, 1897. The tenant had executed certain improvements on the land, and in due course he gave notice of claim under the Acts of 1883 and of 1895, and appointed a referee; but the landlord refused to appoint a referee, and contended that the Acts in question did not apply to the tenancy, which he considered to be for a smaller term than from year to year. By section 61 of the Act of 1883 "Contract of tenancy means a letting of or agreement for the letting of land for a term of years or for lives, or for lives and years, or from year to year," and by the same section and section 1 compensation under the Act is to be payable to a tenant on quitting his holding on the cessation of a contract of tenancy.

Subsection 6 of section 9 of the Act of 1883 empowers the County Court to appoint a referee if one of the parties has given to the other fourteen days' notice to appoint a referee, and that other party has failed to make such an appointment, and the tenant applied to the County Court of Hastings under this section to make such an appointment. The application was opposed by the landlord, but Judge Martineau appointed a referee, as he construed the agreement as a contract for a tenancy from year to year. Leave was given to the landlord to appeal, and the appeal was heard by the Divisional Court of Queen's Bench, and Justices Day and Lawrance reversed the decision of the County Court, and held that the tenancy was not a yearly tenancy, and therefore was not within the acts of 1883 and 1895. Leave was given to the tenant to appeal, and on August 9th the case came on in the Court of Appeal before Lord Esher (Master of the Rolls), Lords Justices Smith and Rigby. The Court decided that the tenancy was a yearly tenancy for a less period than from year to year. Lord Justice Smith said that it was clear law that a yearly tenancy might be determined by any notice which the parties might agree upon, and this tenancy was a tenancy from year to year with a three months' notice to quit. It came within the definition given in the Agricultural Holdings Act, and therefore came within the Act of 1895. The appeal was allowed, and leave to appeal to the House of Lords was refused.

The decision of the County Court is therefore reinstated, and the reference will proceed in due course. This case is one of considerable importance to market gardeners, as a good many plots of land are held on similar terms. Probably one of the next cases before the Court will be the question—What constitutes a market garden?

K. C. T.

A boundary question (*Dennis*).—You may set your fence anywhere you choose in your garden, and as near to your neighbour's fence as you choose, always remembering that the fence must be placed upon your land, and not upon his. You may cut off just as much (but no more) of your neighbour's fence as actually overhangs your land. If his fence be a live hedge, it is highly improbable that it would be planted on the boundary line between the properties—it would almost certainly be planted at some little distance from the boundary, and at his side of the boundary. He has the right to allow the hedge to grow and project up to the boundary, but no further.

Cost of lease—by whom payable (*W. D. K.*).—The general practice is that the lessee pays the costs of the lease, and the lessor the costs of the counterpart, but it is often agreed that each party shall pay half of the whole of the costs. The rule of practice is not, however, a rule of law, and the party who employs the solicitor is the party to whom the solicitor must look for his costs. The lessee is not responsible to the lessor's solicitors unless he has employed them as his agents in the matter or has given them instructions. The lessor, having paid the charges, may in some cases recover the amount from the lessee as money paid to his use, but not in your case. The lease belongs to the lessee when executed, the counterpart to the landlord, and as the lease has apparently never been tendered to you, nor even a counterpart, and as you expressly refused to sign the lease until the clause rendering you liable for the costs was struck out, there seems to be no ground whatever on which you can be held liable to the solicitors for their charges. You were to blame to sign the lease before a copy, signed by the landlord, was tendered to you.—K. C. T.

Right to remove a glass-house erected in garden.—Two months ago I erected in my garden a glass-house, 6 feet by 5 feet, by 8 feet, which has no fixed foundation, but is constructed of wood and glass, and stands against the garden wall. It is not attached to that wall nor to any part of the premises, and it can be moved to any part of the garden. When I remove from the house shall I have the legal right to remove the glass-house also? Do you advise me to match-board the back of the glass-house? At present the garden wall serves as a back.—H. H. P.

*** This glass-house is not a fixture, it is simply a chattel, and when you quit the house and garden you may certainly remove the glass-house. From the legal point of view, it is immaterial whether you put a back of match-boarding to the glass-house or not, but the addition of such a back would render the glass-house more suitable for the purposes of the garden.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Mushroom ketchup (*V. L. K.*).—The large flap Mushrooms are the best for making ketchup. Look over them to be sure they are clean and free from insects, but on no account wash or wipe them. Put them on a deep dish and sprinkle them with salt, not too freely. The next day, with the hands, break them up, squeezing them well to make them juicy. Let them remain in the dish two days and nights; then put them into a stewpan with a stick of bruised Ginger, a dozen Allspice, a dozen Peppercorns, the same of red Chillies and Cloves. Put on the lid of the pan, and let the Mushrooms boil for twenty minutes; then strain the liquor off into a basin, pressing every drop of juice from them. Put all the ketchup into a clean pan, bring it quickly to the boil, pour at once into hot bottles, and cork them while hot, sealing them with sealing-wax. This ketchup will keep any length of time, but each bottle must be corked down tight when using it, as it does not keep if left uncorked.—B.

BEES.

SEASONABLE WORK IN THE APIARY.

QUEENLESS COLONIES.

MANY colonies of Bees dwindle and die out during the winter and early spring through the loss of the queen, and special care should, therefore, be taken to ensure that every hive contains a fertile queen before being packed for the winter. In the ordinary course, upon a queen becoming infirm through age another is reared by the Bees. Should, however, the queen come by her death accidentally, and at a time when there are neither eggs nor brood in the hive, the colony must soon die out. When the Bees of any particular hive are found to lose energy, and are seen crawling about on the alighting-board and upon the outside of the hive in a listless manner, queenlessness may be suspected, and no time should be lost in either joining the Bees to another colony or introducing a fertile queen; still, it is well first to examine the interior of the hive. Having removed the roof and quilts (if it be a frame-hive) and blown smoke freely over the tops of the frames by means of the smoker, proceed to draw aside the division-board. Take the first frame by the ends and lift it out carefully to avoid crushing any Bees, and look for the queen on both sides of the comb. Return this to the hive before removing the second one, and continue the examination in this way till the whole hive has been gone through; the queen, if present, will probably be found upon one of the central combs. While searching for the queen, eggs and brood should be looked for also, and if these be not found it will be a conclusive proof that the hive is queenless. After the end of September it is better to unite queenless stocks to other hives than to introduce queens, as it is then getting too late for the rearing of much brood.

THE HONEY SEASON.

The results of the honey season now closing appear to have been very satisfactory in most parts of the country. In some districts, however, the yield of honey has been under the average, natural swarming having been very prevalent owing to the great heat, and numbers of hives will, doubtless, prove queenless. The time will soon arrive for feeding up rapidly for the winter, and a very good feeder for rapid supply may be made in the following manner: In a small square block of deal, about 1½ inches thick, bore a hole about 2 inches in diameter, fix a piece of perforated zinc over the hole by means of small tacks, and place the block of wood, with the perforated zinc downwards, over the feed-hole of the hive. Put the syrup in a wide-mouth pickle-bottle, cover the mouth with a piece of cheese-cloth or muslin doubled, and insert the mouth of the bottle into the block of wood, allowing it to rest upon the perforated zinc. The syrup for autumn feeding should be made in the proportion of 10 lb. of cane sugar to 5 pints of water, boiled for a few minutes, adding 1 oz. of salt and one tablespoonful of vinegar. Thin and watery feeding syrup should never be supplied in the autumn, as this, as well as unripe or fermented honey, is liable to cause dysentery, and render the hive unhealthy. Dysentery is brought on not only by unsuitable winter food, but through dampness in the hive. Nothing tends more to keep Bees in health during winter than a dry hive, placed in a dry, sheltered situation. It is rarely that a stock dies out from cold; it is the internal dampness of the hive that kills. Bees, as a rule, do better in cold winters than in mild ones, and during very severe weather they cluster in the centre

of the hive and become dormant. Should hives become foul, and the floor-board stained with dysenteric discharges, they should, on a fine, mild day, have the frames of comb and Bees transferred to a fresh, clean hive, the Bees supplied with a cake of candy on top of the frames, proper ventilation given, and the hive well protected from cold winds and rain-storms. The candy-cake placed under the quilts will form a space through which the Bees can pass from comb to comb, and obviate the necessity of their having to pass round the outside of the combs to obtain their food during the winter. If candy-cake is not used, it is well to place a small stick across the tops of the frames to form a winter passage.

Bee-flowers.

Now is a good time to make plantations of hardy flowers in the Bee-garden, that the Bees may have a good pasturage of honey and pollen-yielding plants near at hand, in the early spring when long flights cannot be taken with safety. The Wallflower, especially the early yellow variety, is a very valuable Bee-flower, as is Arabis albida, blooming as it generally does in March. Limnanthes Douglasi is another hardy Bee-flower, yielding honey and pollen early in the season. The Snowdrop, the Crocus, and the Primrose are also much visited by Bees in the spring. The candy for winter feeding is made by boiling about three-quarters of a pint of water, and gradually stirring into it 6 lb. of white sugar, keeping it stirred to prevent burning. To test when it is sufficiently done a little is dropped on a plate, and if it quickly sets hard it is done. It is then poured into moulds or into frames, which are laid upon paper on a flat surface. These frames of candy can at any time be inserted in the hive as required. S. S. G., *Uxbridge.*

To prevent Bees swarming.—I purchased, five or six years since, a hive of Bees from a farmer and placed it on a broad, firm stand. The hive was a common straw one, costing 10d. or 1s. I placed it on a long, wooden table or stand, leaving room for more, under the idea that my stock would soon increase. Well, I knew very little about Bees, and my gardener knew less, so between the two I lost two swarms the first summer, leaving me only one straw hive for the ensuing winter and spring. This left me really to commence afresh, having quite lost one season. I now covered this hive over with a very strong box just large enough to fit loosely over it and to completely hide the Bees from view. I left an entrance in the strong box just to correspond with the entrance in the straw hive, and I found the Bees at once used the entrance to get into the space between the box and the hive (the box being the larger). I also cut a circular hole in the top of the box 6 inches in diameter, and directly over the centre of the straw hive. I kept this hole tightly covered until spring. As the Bees showed signs of swarming in spring, I removed the tight cover from the circular hole and in its place put a bar frame hive, and as soon as it was full put on another empty one. My Bees now never swarm, and I have no trouble.—Joseph Weaver, *Enniskillen, Ireland.*

Diseased Bees *(Wychwood).*—We have never heard of Bees suffering from "lumps on their backs;" the only lumps we have ever seen upon Bees have been lumps of pollen heaped up upon their hind legs, where the pollen-bags are placed. It is possible that the person who gave you the information may have mistaken these loads of pollen for lumps on the back. We should advise a more careful examination of the Bees being made, when you could, perhaps, supply more minute particulars of the supposed complaint. If the Bees have continued active, and the "lamps" do not affect their working powers, there cannot be much the matter with them. You need not fear using the honey for the table if you wish to do so. The most formidable complaint from which colonies of Bees suffer is foul brood; but this can be kept at bay and often banished from the hive by the use of camphor. It is a wise precaution to place a piece of camphor about the size of a Walnut, wrapped in a piece of linen rag, upon the floor-board of hives where disease is suspected.

Aspect of hive *(Grenadine).*—A south-east aspect is very suitable, as in this position the early morning sun shines upon the hive and encourages the Bees to commence work betimes, and this is important, seeing that, as a rule, honey-gathering does not continue late into the day. If your hive is well prepared for wintering by having the double walls packed with cork-dust or dry Moss, and extra quilts put upon the tops of frames, the Bees will be quite warm enough. If the hive has not double walls, it ought to be constructed of stout material, however. It is seldom that Bees die from cold in this country; it is dampness that is the great winter enemy to Bees. If, therefore, you keep your hive dry you need not fear their suffering from cold. The roughest wind is usually from the south-west, so that side of your hive will need more shelter than the back, which you could, perhaps, provide in the roughest weather; but this is not important unless it be during a snowstorm. When snow remains upon the ground the entrance to the hive should be shaded, so as to prevent the direct rays of the sun entering, as this will sometimes induce the Bees to come forth, only to perish. At other times entrance should be kept free, and be opened to 6 inches for ventilation. Any dead Bees that may accumulate on the floor-board about the entrance should be removed from time to time, as the blocking up of the entrance would be likely to stop ventilation and smother the Bees.

The use of honey as food *(Grenadine).*—A little honey taken daily for breakfast proves beneficial to most constitutions; large quantities, taken alone, however, become injurious, from its heating nature. In a paper upon "Honey as Food," read some years since at a meeting of the British Bee-keepers' Association by Mr. Frank R. Cheshire, he says if honey be suddenly taken alone it passes so immediately into the circulation that the transforming power of the liver is insufficient, and the overburdened organ becomes gorged, the circulation is over-charged with sugar, and nausea is the result; but if the honey be associated, say, with bread, the former is, during chewing, successfully entangled with the starch and albuminoid substances, and is only set free in the stomach as the dissolving processes of digestion progress. Its slow liberation permits the liver to thoroughly overtake its task, and the blood receives from time to time only those supplies which the demands of the economy justify. Bread and honey is, therefore, a combination which the soundest physiology approves.

Bees in hollow tree *(C. D. O. Hutchins).*—If it was as late in the season as the middle of July when the swarm took possession of the Willow-tree there is probably not a sufficient amount of food stored in the combs to last the Bees through the winter; it would, therefore, be well to remove the colony as soon as possible, and place it in a hive so that you may be able to feed up a sufficient quantity of syrup to preserve the lives of the Bees well into the spring. As you do not mind damaging the tree, you would not find it a difficult matter to transfer the combs and Bees to a frame-hive after having enlarged the hole sufficiently by means of saw and chopper. You must, however, use abundance of smoke during the operation, and have a reliable smoker that will not be likely to cease burning at a critical moment, as some are apt to do. It would be well, also, to wear veil and gloves if inexperienced in the manipulation of Bees, and it will, of course, be necessary to have everything needed in the operation ready to hand that it may be performed as quickly as possible. You will have to provide a board or small table, upon which place a square of flannel or other soft material upon which to lay the combs as removed, some pieces of rather broad tape sufficiently long to tie round combs after they are placed in the frames, some pieces of thin lath to support combs too small to fit firmly in the frames, a strong long-bladed knife to cut the combs from the tree, and a light quilt to throw over combs and Bees as they are placed in the hive. Remove the combs one by one, and, by means of a Goose-wing or a handful of dry Grass, brush off the Bees into the frame-hive, leaving in a few bars to support quilt, which place on to keep the Bees from running over the tops of the frames. The combs must be fitted into the frames as firmly as possible, and placed in the hive without delay, especially those containing brood, lest it should become chilled. It is not important to get all the Bees into the hive, provided the queen is secured, as she will remain, and all on the wing, as well as those left in the tree, will join her in the hive; whereas, if she is not secured, the whole colony will leave the hive and return to the hollow tree. Having secured the combs, queen, and most of the Bees, cover up the frames with an extra quilt or two till the Bees have settled down. In a day or two the hive should be opened, the frames drawn together, and the space contracted as necessary, by means of the division boards, and, if stores are not abundant, syrup must be supplied freely by placing the feeder over a hole cut through the coverings of the frames. If, through the lateness of the feeding, the Bees refuse to take the syrup, then candy-cake should be substituted. An excellent soft candy for this purpose, which the Bees take very readily, can be made by adding granulated sugar to honey, till a mass is formed of the consistency of putty. The hive should be left for a few days as near as possible to the entrance to the old home of the Bees; it can then be moved, gradually, to the site it is to occupy permanently.—S. S. G.

BIRDS.

MANAGEMENT OF CAGE BIRDS.

The Nightingale (Philomela luscinia). Under proper care and attention this grand songster will survive for some years in captivity, rewarding its owner from time to time with music far excelling the notes of any other feathered pet; but unless a constant supply of mealworms and ants' eggs can be obtained the keeping of this bird in confinement should not be attempted. In its natural state it lives almost exclusively on caterpillars, beetles, flies, moths, and other insects, adding a few berries to its diet towards the end of the summer. It is a bird of passage, arriving in our island at the end of April and departing southwards in August, and confines itself chiefly to the south-eastern section of our island, frequenting deep valleys, close copses, parks, and shrubberies. In such situations it may be heard throughout the month of May and early in June not only at night, but at intervals throughout the day. This bird builds its nest in thick hedgerows and dense thickets, in a low position, near or even on the ground, the nest being very artfully concealed, and composed of dry leaves externally, lined with vegetable fibres and soft hair. The eggs are four or five in number, of a brownish-green tint, without spots or streaks. Young Nightingales are easily reared from the nest on ants' eggs, and yolk of hard-boiled egg and biscuit, grated, and mixed with a little fresh milk, while the diet of adult birds should consist of German paste, ants' eggs, crushed Hemp, mealworms, egg and bread-crumbs, and a little grated Carrot occasionally. Fresh water for drinking and bathing should be supplied every day, while the utmost attention must be paid to cleanliness. The plumage of the Nightingale is brownish-grey above, tinted with rust-red, breast greyish-white, its personal appearance being by no means striking, although it has a beautiful eye, dark and lustrous. In length it is about 5 inches. S. S. G.

Garden birds *(B. C. C.).*—There are very few of our common birds that prove other than beneficial for gardens, for the countless number of grubs and insects they consume and use in the rearing of their young fully compensates for what damage they may do, from time to time, in attacking the Green Peas, nipping off the Crocus-flowers, or thinning out the fruit-buds. Sparrows are doubtless very destructive at times in the kitchen garden, and require to be kept down by shooting and trapping. Chaffinches also do some damage in rooting up seedlings in the spring, while Blackbirds are very partial to ripe Strawberries, Gooseberries, and Currants. Still, it is possible to ward off their attacks by using netting and wire-guards. As, however, you have no fruit-trees or kitchen garden, you will probably find that none of the feathered tribe will prove foes to you in the enjoyment of your pleasure-grounds, while many will repay you with their grateful songs for the refuge your shrubbery affords them.

Kingston Chrysanthemum show will be held on Nov 9th and 10th next, in the Drill Hall, Kingston-on-Thames.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

THE HOUSING OF PLANTS IN POTS.

The housing of plants in pots, grown to produce fine blooms, is now a matter of primary importance. All the work of the season may soon be rendered useless if one or two sharp frosts should injure the now fast-swelling flower-buds. Those who have glass-houses in which to shelter their plants will act wisely to at once thoroughly cleanse glass and woodwork inside and out, as if there be drip, and that is in wet weather an almost inevitable visitation, then is it all the more provocative of mouldy damp, if the glass or woodwork be dirty. The house should, so far as possible, have a good drying ere the plants are housed. When got in under cover ample air should be given, especially on the top of the house, but not in such a way as to admit rain. Water, too, whilst not spared to the roots, should be given with great care, so as not to stop it unduly or create more of moisture on or about the house floor than is needful. It is well also not to crowd the plants unduly, and also to so arrange them according to heights that the blooms, when they open, are fairly near the glass, where they get ample light and air. Generally, Chrysanthemums look remarkably well everywhere. There is, of course, less growth than used to be seen, and there is, too, less of over-potting. Gross, woody, and very leafy plants seldom produce first-class flowers, whereas those that have been pretty well baked in the hot summer sunshine, and yet when the plants were hard-rooted have been moderately fed with liquid-manure, throw now very hard main stems, and later growths, though vigorous, not unduly so, and with stout but not needlessly large leafage. Such plants are almost certain to produce good flowers. Many plants have shown rather yellow leafage, yet seem otherwise healthy. We are assured by good growers that when the plants are housed they find this variegation disappear, and the green colouring to return; that may be due to the plants' great appreciation of such warmth as a greenhouse furnishes. In any case, it shows that amateur growers of these plants need not be alarmed if some of theirs display rather yellow leafage outdoors. When the blooms begin to expand and colour is seen, then liquid-manure should be given more sparingly and the greatest care be exercised in watering. A little fire-heat when damp weather prevails is very helpful, but, when on, top ventilation should be given to allow the heated vapour to escape. Those having no greenhouses to shelter plants in can furnish some protection by standing the plants on boards or slates on an ash floor, close together, on the south side of a house or wall, and erecting over them a rough yet strong framework, on which can be placed two or three frame-lights, to be well secured. The lights should slope to the front. At night mats or canvas may be hung round the sides to exclude wind and frost. Failing glass-lights, the next best protection will be furnished by a light covering of oiled calico, fixed over the framework, but glass is, of course, the best. In this case, too, protection can be furnished to the sides at night or in rough weather. The dwarfer plants are, of course the more easily are they thus protected. D.

CHRYSANTHEMUM LADY MARY FITZWYGRAM.

This is a very useful early-flowering variety. It has a striking resemblance to Mme. Desgrange, but the growth is more sturdy, and the flowers are pure white. It attains a height of from 2 feet to 3 feet, and flowers profusely. As a bush plant grown in pots throughout the season it does remarkably well, and we have plants at the present time measuring from 2 feet to 3 feet through, and one mass of white flowers. To obtain plants of this kind the cuttings should be taken in December, and inserted singly in small 60-sized pots and placed in a cold-frame, keeping them closely covered during the time of severe frost. In March the plants will be well-rooted when a shift into a 5-inch or 6-inch pot is necessary, keeping them in a close frame for a few days till they have commenced to make new roots. A 10-inch pot is most suitable to flower them in, not attempting to overcrowd the roots to impede growth. The plants should be placed in a sheltered position during the summer where strong winds cannot damage them, but where light and air can be freely afforded. A good method of support during the summer months is to plunge the pots in ashes to keep the roots cool, and thus save time and labour in watering frequently. In July the plants should be well rooted in their flowering-pots, when an occasional watering with soot-water is essential. About once a week is often enough for a time, or till the plants begin to show flower-buds, when a liberal supply may be given. Soot-water or liquid-cow-manure given freely during August will encourage free flowering. The plants require staking during this month, as the branches are very fragile, and without a little support during a strong wind they are soon damaged, and become very unsightly. It is hardly necessary to stake every branch out individually unless required for exhibition. An easy method of support is to place four stakes round the rim of the pot and extend a thin piece of twine from one stake to another, thus preventing the branches from falling apart. A few of the branches may be tied out to the twine so as to hide a portion of the stakes. The flowers will measure 3 inches to 4 inches in diameter. Lady Mary Fitzwygram is a most useful variety for decorations, and can be utilised for various purposes. As an early variety it has no equal when well grown. It thrives better in some localities than others, a warm climate suiting it admirably. W. J.

Berried Asparagus. — Whilst almost everyone likes to have flowers, foliage, or berries in their rooms all the year round, it is found rather difficult to have such pleasures in the winter. Yet berried growths of the common Asparagus, if gathered at once whilst the foliage is yet green, then cut into sprays, may be set up in vases in a cool room, not in water, looking exceedingly attractive. When with this material is blended another very common and easily obtained material, the seed branches with the thin paper-like cuticle of the seed-pods only retained, then are very charming domestic decorative objects secured. Here are two things which can be grown, if only for this purpose, in every garden, and which few purchased things can excel. Then there are the Winter Cherries (Physalis Alkekengi and Franchetti), both of which, quite hardy, may be grown in any garden also.—A. D.

THE "GERANIUM" OR ZONAL PELARGONIUM IN WINTER.

Although we can have many bright-coloured bulbs, and our Chrysanthemums, Bouvardias, and other winter flowers have been much improved as regards quality and brighter colours, there is no plant more easy to grow, less subject to disease and insects, or that will afford a longer show of beauty, than the single and double-flowered Zonal Pelargoniums. They will put up with more neglect and give us a greater variety of colour than can be found among any other cool or warm greenhouse subjects. All they need is a fairly dry atmosphere, and a temperature ranging from 45 degs. to 55 degs. Any ordinary compost will suit them, and if helped by weak liquid-manure once a week, quite small pots may be used. They will also do well in a living-room, and where the convenience of a greenhouse is enjoyed a dozen or two plants could be brought in at intervals to keep up a constant supply. Twelve of the best single forms may be found in Trilby, Zenobia, and Volcanic for crimsons and scarlets; Sunray, Aurea Perfecta, and Eleanor for orange shades; Mrs. D'Ombrain, Wilhelmina, and Valkyrie for salmons; and Blue Peter, King of the Purples, and Delicata for blush and purplish shades.

Doubles, perhaps, give us the most useful section, as they last longer both upon the plant and as cut blooms. No flower is more intense in colour than Raspail Improved, and no greenhouse is complete without a few of these to enliven it during winter. Other good doubles are Golden Grain, Gold Finder, Althea, Surprise, Rosa Bonheur, Double Jacoby, Boule Noir, Joyful, Boule de Neige, Snowdrop, and Mrs. Gladstone, the last three being whites. The Hybrid Nosegay section is also a good winter bloomer, and the following six are sure to please: General Dodds, Flamingo, Fiery Cross, Aurore Boreale, Mrs. Mayes, and Dr. Rothera. I give these selections as an additional note to the recent article upon "Flowers for Christmas" in the issue for September 4. P. U.

Exacum zeylanicum var. macranthum.—Among stove-flowering annuals this is now very striking in one of the warm-houses at Kew by reason of the intense violet-blue of its flowers. The plant is of somewhat erect growth, and producing its axillary and terminal racemes rather freely makes a fine show. The plant is well worth attention for the sake of the colour of the flowers, which is not plentiful in the warmer houses.

GARDEN WORK.*

Conservatory.

If not already done the show and fancy Pelargoniums should be put into their flowering pots. Two-thirds good loam and one-third old cow-manure, and some sand, will make a suitable compost, as stimulants can be given when required, which will not be till the pots are filled with roots. Ram the soil in firmly to obtain a sturdy, floriferous habit, and all through the winter keep the plants near the glass in a freely-ventilated, but not draughty house, with a night temperature of about 50 degs. It is advisable to vaporise or fumigate as soon as the plants are fairly settled in the house, and then if there are any pests about they will be got rid of. There should be plenty of flowers now with Chrysanthemums, Zonal "Geraniums," Mignonette, Bouvardias, and well-coloured Begonias at the warm end. Eupatorium odoratum is a very useful plant for winter where large and well grown. These things are best planted out. Arum Lilies may be had in bloom, if required; but for the present the Chrysanthemum is king, and until the height of the show is over other plants may be held back. Assuming, therefore, the Chrysanthemum holds the first place, the house must be so managed as to keep the blooms in condition as long as possible. In the first place, insects, including earwigs, must be kept down, and it may be necessary (we find it so) to go round with a lantern at night between 9 and 10 o'clock and take earwigs when they are feeding. It is a flower much eaten by insects, and it is astonishing what a lot of damage one or two will do in a short time. For green-fly, the vaporiser is more deadly than fumigating. When tastefully arranged a grand show can be made with Chrysanthemums, and if the house is properly ventilated, with just a little warmth in the pipes so as to keep the night temperature about 50 degs., the watering should be done in the morning, and the house, except on frosty nights, be altogether closed. To give large size to the blooms, a mixture of manure is generally better than any one kind—nitrate of soda, mixed with some patent fertiliser, combining something that will stimulate and add firmness of the growth at the same time. Now that all the tender plants are indoors more care will be required in watering and removing dead leaves, etc.

Stove.

It is useless trying to grow Crotons, the red-leaved Dracænas, or Ixoras in a cool-stove. The night temperature for such plants should not fall below 65 degs. and in mild localities may work up to 70 degs. It is a good plan where a collection of stove plants is grown to have a division across the house, and keep one end warm for the plants which require heat, and the other end cool—say, about 60 degs.—or to work down to 55 degs. on cool mornings. Many beautiful plants may be grown in the cool-house, and the temperature will be pleasant for those who like to attend in some measure to the wants of their plants to potter about in. In both divisions there will now be plenty of colour of both blossom and foliage. There should be a tank, if possible, in the house to supply water of the same temperature as that used for syringing and watering.

Cucumbers for Winter.

Strong plants set out now in a warm-house will come into bearing about the beginning of December, and continue bearing till next March, or later, according to treatment. In a temperature of 65 degs. to 70 degs. at night the growth will be rapid. Let the plants get well up the rafter before stopping, but pinch side-shoots one leaf beyond the fruit. Set the plants a yard apart. Half-a-bushel of soil will be enough to plant in, but add fresh soil frequently. Maintain a moist atmosphere by damping paths and walls several times a day. No ventilation is required if quick results are wanted. Of course, no house is altogether airtight. Telegraph is a good variety for winter, and Lockie's Perfection bears very freely, though the fruits are not quite so long as Telegraph. The Cucumber known as Rochford's is a hardy, vigorous, free-bearing kind when true. Give liquid-manure to plants in bearing, and keep the growth thin by continuous pinching.

Planting Peaches under Glass.

There is a good deal in having the trees on the right stock, especially early or shy-bearing varieties. The trees make too much growth on the Brompton-stock, and growers who are well acquainted with the mystery of the different stocks will not plant Peaches on this stock. The Mussel Plum is the best stock for the Peach. The growth is less robust, but more fruitful. A good sound loam is the best soil for Peaches, and no manure is required; but a little old plaster or wood-ashes, and perhaps a few bones, may be mixed with the loam. The border must be well drained, and the roots should not be cramped for room. The Peach, when planted inside, should have some provision made for the roots going out. They will go out anyway unless walled in. Plant early in November, and do not cut back very hard. There is no fear about healthy trees filling the trellis. If all goes well, Peaches planted 16 feet apart will fill a house 20 feet wide in three years.

Early Vinery.

If not already done, early-forced Vines should be pruned now and cleaned ready for starting when the time comes. But Vines are not forced so early now as they were forty years ago, though fresh-ripened Hamburghs are better than late Gros Colmans.

Window Gardening.

Roman Hyacinths and Fuchsias, if they were potted early, may now be brought on in a light, sunny window. Keep the soil moist. Cyclamens and Primulas are coming on, and should have similar treatment. The best foliage plants for winter decoration are Aspidistras and Palms. Among Palms the Kentias are superior to anything else.

Outdoor Garden.

This is a good season for making new beds or borders for herbaceous hardy plants. I think the grouping system is sure to be extended where effective flowers are desired. Those who want as much variety as possible in a small space can have it, but they lose the effect produced by dozens of plants of the same colour in one spot. The German Iris is a good deal grown in some districts, and I see no objection to variety, but a bed or border of many sorts and tints of colour is not so effective as broader masses of three or four distinct tints of, say, yellow, white, and lavender or purple. The same principle may be applied to other flowers which are planted at this season—Roses, for instance. Select the kinds and colours you like, and then plant half-dozens or dozens of each if there is room for as many. This multiplication may be done at home by striking cuttings or budding. This idea of grouping or massing flowers is a very old one; fifty years ago there were large masses of one kind of Rose in many gardens, only there was not the material to work with then as there is now. The same idea can be worked out in shrubs and trees. Masses of Broom, both the common and the Spanish and white Portugal, the evergreen Barberries and the hardy Fuchsias, and groups of Lavender and Rosemary are appropriate in suitable positions. Wireworms are very fond of Tulip-bulbs—several beds last season were completely spoilt by them—but they are not so destructive among Narcissus and Hyacinths.

Fruit Garden.

Give the trees in the early Peach-house and early vinery all the rest possible by keeping the houses open to the full extent till the time for starting comes. If the borders require any help, and they usually pay for this, now is the time to see to it. Find the dry spots, if there are any, and thoroughly moisten them with liquid-manure. Vineries which have been infested with mildew should be cleared of plants as soon as the leaves fall and be thoroughly fumigated with sulphur. The fumes from the sulphur will kill every green leaf, but will not injure the hard ripe wood of the Vines. The sulphur fumes will destroy all the mildew spores, and there will be a chance of starting free from it next spring. Mildew is often caused by drought at the roots, and now is the time to see to the condition of the borders. The early Peaches should be pruned and the roots washed with a solution of Gishurst compound, and the branches should then be trained, but be careful in tying not to tie tightly; there must be room for growth. Remove runners from Strawberries in pots; open the plants out, if necessary, to give more room for foliage. Strawberries may yet be planted in the open ground. Runners are late this season, and if very small may be planted in nursery rows and set out finally in spring. Those kinds which do not make runners freely may be propagated by division of the crowns. The Strawberry is a herbaceous plant, and may be increased by division; if any care to try them that way they will find them do very well.

Vegetable Garden.

Rake up and store the falling leaves. They will come in useful by-and-bye to force Asparagus, Seakale, and Rhubarb. Where there are plenty of strong roots of Asparagus forcing may begin any time. When roots are grown specially for forcing, as they usually are where forced Asparagus is a speciality, the tops may be cut down and the roots lifted and planted on hot-beds at once; on a genial hot-bed the crowns will soon start. Mushroom-beds made now will be in bearing at Christmas. There is not much difficulty in growing Mushrooms if suitable manure and good spawn is used. The best place for Mushrooms is a dark shed on the north side of a wall or building, and if the drainage is all right sink it in the ground 2 feet or 3 feet. Green crops are growing rapidly, and it would be wise to lay down the late Broccoli. Early Broccoli may be lifted with balls of earth, a few of the bottom leaves removed, and then planted rather deeply in some place where they can be covered when severe frost comes. The leaves should be tied over the hearts, and then any frost likely to come just yet will not do harm. Full-grown Lettuces will be injured by sharp frosts, but a very thin covering, which can be easily improvised, such as mats or canvas, afterwards a covering of dry leaves, and a little dry Fern on the top to keep the leaves together, will keep them in good condition for a long time.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 18th.—Finished earthing up all Celery, except the very late crop, which is grown only for flavouring. Disbudded late Chrysanthemums, such as Lincolns, Cannings, etc. They are in cool-house at present; shall give liquid-manure once or twice a week for a time. Potted off cuttings of white and yellow Marguerites, also Heliotropes for early flowering, in 5-inch pots. Looked over late Grapes to cut out bad berries and shorten back the wood a bit, especially where a leaf may touch the glass. Planted a house of winter Cucumbers.

October 19th.—Stored away Dahlia-roots and Tuberous Begonias in cool, dry place; the latter are packed in Cocoa-nut-fibre. Potted more bulbs, such as Hyacinths, Narcissus, etc., also a lot of Liliums longiflorum and Harrisi. Placed the last of Pelargoniums in flowering pots. Potted off a lot of autumn-struck Fuchsias; will be kept moving in a warm-house over winter, so as to flower early in 5-inch pots. Stirred the soil among Spinach and Cabbages.

October 20th.—Thinned out some groups of evergreen shrubs and moved a part elsewhere; some of the old things which were not worth the trouble of moving were grubbed up and Hollies planted on the site. Took off a lot of Gooseberry-cuttings of the best varieties for propagating purposes, and laid them in till time can be found for preparing and planting them. Gathered late Apples and Pears.

October 21st.—Re-arranged conservatory to make room for more Chrysanthemums, which are coming on fast now. Tuberous Begonias and Fuchsias have been moved to a cool-house to ripen. Dwarf Cannas in large pots are flowering freely in intermediate house; these are better, in our district, inside than out. Pruned Vines in early houses. Selected a few of the best shoots for eyes for propagating. Shall paint the house inside and whitewash walls as soon as possible.

October 22nd.—Washed out the last of the Tomato-seeds from selected fruit. There is a good deal in selection—not only in good fruits, but selected from the most fertile plants. Plunged Strawberries in pots in ashes up to the rims in an old temporary pit which is used for hardening off stuff in spring. Will be covered with old lights before bad weather sets in. Gathered the last of the Peaches from open wall. Looked over budded Briers and loosened the ties of those last budded.

October 23rd.—Transplanted a lot of Golden Rocca Onions. Lifted a lot of Cauliflowers, both Walcheren and Autumn Giant, and planted in deep pit, where they will be safe till required. A border of Parsley has been covered with a frame, but no lights will be put on yet, and a quantity of Mint and Tarragon has been boxed for forcing later on. Cleared away the old leaves from the earliest bed of Seakale to get the roots thoroughly ripe for lifting.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE KITCHEN GARDEN.

ENGLISH WONDER PEA.

This is an improvement on the older dwarf early variety called American Wonder, and is one of the very best for very early or very late crops—in fact, except for the midsummer crop there is no need to grow any other in private gardens. One could get a very good supply every day of the Pea season from this variety alone, but everyone likes variety, and for the hottest weeks of the year I like to have a few rows of the large Marrow Peas, such as Telephone or British Queen, but they take up so much space that one cannot afford the room for many or the garden would be all Peas. I find that for the area covered there is nothing like the dwarf of the English Wonder type. I am now gathering beautiful dishes from rows in which the haulm is only 6 inches high, for in the earliest stages of growth the soil was very dry. The plan I like best for the late crop is to dig out a trench as if for a single row of Celery, put some well-rotted manure and soil in, so that when finished it is only about 3 inches below the ordinary level; then scatter the seed thinly over the entire surface, cover with soil, and one good soaking of water will last a long time. Peas in abundance may be gathered up to October or even later if the weather keeps open. In the suburban garden Pea-stakes are such an expensive luxury that they cost as much as the Peas are worth, and every season the demand for the dwarfest Peas grows larger and the tallest ones grows less. Except in large gardens, where space is no object, there can be little doubt but that tall Marrow Peas will eventually be little grown. There is no lack of dwarf varieties now to satisfy the most fastidious taste, but after trying the majority for a very early and very late supply I have come to the conclusion that English Wonder is the sort to rely on.

J. Groom, *Gosport.*

Summer-sown Carrots.—Those who about the middle of July made a sowing of Carrot-seed, either the Nantes or Intermediate, and kept the soil between the drills well-hoed and clean, the plants being very moderately thinned, will now find they have an abundance of moderately sized and deliciously tender roots to pull and cook from November and through the winter. Fine to look at and great in bulk as are the huge roots the new Intermediate variety furnishes from April sowings, they are not one-half so nice to eat as are those from summer sowings. Really, except to furnish food for cattle, it is a mistake to grow these large Carrots. We should make more frequent sowings in lesser quantities, first in frames in January of Early Gem, then on warm borders of the Nantes in February and March, also even in April, to have ample succession. Other sowings of this delicious Carrot may be made in June and July to keep up a supply of young roots nearly all the year round.—D.

Saving Tomato-seed.—Choose a plant for seed which has set its first cluster of fruit very low on the stem or touching the ground. Leave only a few of the best fruits on this cluster. Let the plant grow freely without stopping the leading shoot, but remove all the other clusters of blossoms as they appear. Seed saved from this will be more likely to produce short-jointed and low-setting plants than if the seed had been saved from the fruit placed on clusters higher up on the stems.—A French Grower.

Cannell's Defiance Cabbage.—At this time of the year I have never seen anywhere such a really beautiful white and firm-hearted

small Cabbage as this is. Messrs. Cannell and Son had a large quantity of it on their table at the recent Royal Aquarium show, and it was absolutely perfect. When or how obtained I do not know, but I did learn that it was the product of several years' hard selection. How greatly superior to the large, coarse Cabbage is such a kind as this. The heads were just about what we see from a good stock of Ellam's Early in the spring; but then this is not a good autumn Cabbage, whereas Cannell's Defiance is a first-rate one.—D.

VIRGINIAN CREEPERS OVER PORCH.

In Gardening of Sept. 25 last there was an interesting illustrated article on "Vines and Virginian Creepers," and it therefore seems an opportune time to send you the enclosed photograph, which a friend recently took for me that I might send it to you. I think it shows well what may be done to make an ugly doorway and corner most pleasing and beautiful, and I need not describe how lovely the crimson, and pink, and yellow colouring has been, and still is, in this mass of creeper. The plant is Ampelopsis muralis, and attaches itself in these lovely festoons to the woodwork above the door, where I put a nail or two a year ago when it reached that part.

G. Osborne.

The Down House, Cricklade, Hindon, Wilts.

*** A very instructive photograph, showing the beauty of A. muralis, which is not often seen in gardens. We need say nothing further respecting the Virginian Creepers, as, with the Vines, they are described in Gardening of Sept. 25, with illustrations of the leading kinds.

Virginian Creeper over doorway at Down House, Cricklade, Hindon, Wilts. From a photograph by Miss Halliday.

VIOLETS.

This is an old theme, and one that has been dwelt upon by many able writers in these columns, yet so popular is the Violet, and so generally loved by all, that notes respecting its culture never seem out of place. Passing along a shady hedgerow quite recently, I picked a bunch of sweet Violets which seemed all the more sweet because I never expected to find them. It is not, however, of the Violet in its wild state that I wish to speak, but just to remind your readers that the time is at hand when cultivated plants must be transferred to their winter quarters in the frame. It is rather surprising that double Violets are not more largely grown by amateur gardeners who have the convenience in the shape of a frame for their winter protection. To become the possessor of a frame is the ambition of many who do not aspire to a greenhouse, and having obtained one, they utilise it for various purposes throughout the spring and summer, after which it frequently stands empty and idle during the winter. This seems a pity, as the receptacle might be utilised to advantage for the accommodation of Violets, which would provide a supply of flowers throughout the winter, and burst out into blossom on the advent of spring. Briefly I will sketch the outline of culture likely to suit the requirements of amateurs who have not commenced growing Violets for winter use.

Towards the end of April, after flowering is over, obtain a few roots—say a dozen—of each of two varieties, blue and white. Of the former, none is better than Marie Louise, a rich dark blue, and of the latter, Comte de Brazza, a pure white, deliciously sweet, and full blooming. Prepare a piece of ground by deeply digging and thoroughly breaking up the soil, working in some well-decayed manure a few inches below the surface. Having done this, take the old roots and divide them into as many portions as possible, taking care, however, that each one is furnished with a few roots. A large plant will generally break up into half-a-dozen small ones, so it is easy to see how readily the stock may be increased. Stretch a line across the bed, and plant the divisions in rows about 12 inches asunder, and the plants about 9 inches apart in the rows. Plant with a trowel, and press the soil firmly round the stems, giving a thorough watering through a rose-can to settle the soil. They may look sickly for a time, but growth will soon commence, and the summer cultivation may be briefly summed up as follows: Keep the surface-soil continually stirred between the rows with a Dutch hoe. Give an occasional watering in dry weather with weak liquid-manure if possible, and, above all, keep the runners picked off, as these, without being of any benefit whatsoever, rob the plant of its strength. If these directions are followed, with other conditions favourable, there will be no difficulty in having large, well-formed plants ready for transferring to the frame at this time of the year.

Early frosts will not materially affect the plants, so that any time before the end of October will be suitable for removing them to their winter quarters. The first matter is to prepare the frame. Some growers provide a hot-bed of manure, which certainly has the effect of forcing the plants into bloom; but if too hot the season is soon exhausted for flowering, and the plants are of little use afterwards. Artificial heat is not absolutely necessary to the welfare of the plants during the winter. If the frame is a brick structure and deep, leaves or rubbish may be deposited in the bottom, and the soil, any light compost containing some leaf-mould, placed on the top, bringing the surface up to within a foot from the glass. Having prepared the frame, the next operation is taking up the plants, which should be done with the greatest care, so that the balls of soil round the roots are not broken. A fork is the best implement to use, and having lifted the plants, taking care that all runners are picked off, remove them to their permanent quarters without disturbing the soil round them. Allow the plants sufficient room in the frame that they do not touch each other and become unduly crowded, and finish the work by giving the whole a good soaking of water.

It will not be necessary to place on the lights till severe weather sets in, and then air should be given on all favourable occasions. During hard frost protect the frame with mats or other covering, and a wall of litter placed round the structure will form a means of protection. Look over the plants occasionally and pick off all decayed leaves, as these propagate a fungoid growth which plays havoc with the foliage. No water will be required till the spring, when the increased sunshine dries the surface, and a good soaking of tepid water will assist the plants considerably. If these simple operations are carried out no amateur having the accommodation of a frame may be without a supply of these ever-popular and delicious flowers.

H. H.

ORCHIDS.

Cypripedium Seegerianum.—This is a useful hybrid Cypripedium, now fairly plentiful, and I have noted it flowering in several collections. It is the result of crossing C. Spicerianum and C. Harrisianum. The lip is deeply coloured, not unlike that of C. barbatum, to which species it is of course related through its pollen parent. The dorsal sepal is white with a suffusion of rose, and has the dark line in the centre, as seen in C. Spicerianum. The habit is vigorous, the foliage resembling that of the latter species, but usually longer. It thrives in an intermediate temperature under the treatment usually accorded to the genus. —B.

Dendrochilum filiforme.—Though very small individually, the elegant racemes of flowers produced by this Orchid are pretty and very delicately scented. In colour they are pale yellow and occur upon the last-formed pseudo-bulb. Not much compost is required to grow this plant, which succeeds best in small suspended pans or baskets. That used should be free from dust and dirt, and contain abundance of finely-broken crocks. The drainage must be specially attended to, and may come to within 1 inch of the rim of the smaller-sized pans. The plants thrive best in the East India-house, and during the growing season the roots must never be allowed to remain dry for any length of time.

Lælia amanda.—This pretty Brazilian species is not so often seen as it deserves, for the blossoms are very delicate and refined in colour and occur at a time when they are exceptionally useful. They are each about 5 inches across, the sepals and petals rosy-blush, with a suffusion of pink, the lip deeper in ground colour, with radiating lines of purple. In habit it is rather peculiar, the pseudo-bulbs being each about 9 inches high and bearing a pair of pale green leaves. The scapes produce only a few flowers on each, but these last very well in good condition. The plants must not be over-potted and the drainage in every case must be ample, plenty of water being required while growing freely. This commences, as a rule, late in spring, and from then until the flower appears a position not far from the roof glass in the Cattleya-house suits it best. After the flowers are over the plants must, if possible, be kept dormant for a time, and are best in a house a few degrees lower than the Cattleya-house proper, though if this is not at command they will do very well in the latter. The compost may consist of good rough peat and Sphagnum, with plenty of crocks, the plants being elevated a little above the rim of the pot or basket.

Oncidium tigrinum.—We have received flowers of this sweetly-scented Orchid from Mr. F. Holton, The Villa, Stoke-on-Trent They represent a very good form. Our correspondent writes: "The plant is in a 7-inch pot. It has eight bulbs, five of them with fourteen leaves in all. There is one spike of fifteen flowers."

1924.—**Tulip failure.**—I saw and examined several instances of Tulip failure last winter, exactly like "Blanc's," and I have no doubt the cause was wireworm, for when the Tulips did not appear at the proper time the bulbs were turned up, and wireworms were present, or their work could be traced in every instance. Wireworms are very fond of Tulips. —E. H.

OUTDOOR PLANTS.

TALL PLANTS FOR THE WILD GARDEN.

There are few plants that are more striking for the wild garden than the Giant Cow-Parsnip (Heracleum), an illustration of which appears on this page. Though totally unsuited to the herbaceous border it is a valuable addition to the garden, when it can be relegated to a position where it may display its bold outline unmolested, and live in semi-wildness, surrounded by other vigorous forms of vegetation. Of these there are many that will flourish under identical conditions. The noble Acanthus mollis, with its flower-spires shooting up to a height of 8 feet; the tall, grey-leaved Mulleins; the Japan Knotweed (Polygonum cuspidatum), though this is indeed, a rapacious neighbour and a veritable land-grabber; the tall Asphodels, which will grow and flower on the stoniest bank; Inula Helenium, with its golden blossoms, often 4 feet high; and the somewhat similar Telekia speciosa. Many of the tall perennial Starworts, or Michaelmas Daisies, will flourish in the wild garden, as will the stronger of the Helianthus family, such as H. giganteus, H. lætiflorus, and H. rigidus Miss Mellish. The old-fashioned Golden Rod (Solidago ambigua) will grow strongly in such environment; and the Plume Poppy (Bocconia cordata) never shows to such advantage as when thrusting up its wide, grey-green leafage, and the lofty stature of its creamy inflorescence from a surfacing of naturally-growing plants. The great Evening Primrose (Œnothera Lamarckiana) is also a strong grower, and well able to hold its own in the wild garden, its light yellow flowers showing with delightful effect against a dark background as the twilight gathers. Other tall subjects that may be well utilised among the foregoing are the Pampas Grasses (Gynerium) and the Arundos, both A. conspicua and A. Donax, while here and there a hardy Bamboo has a distinct effect.

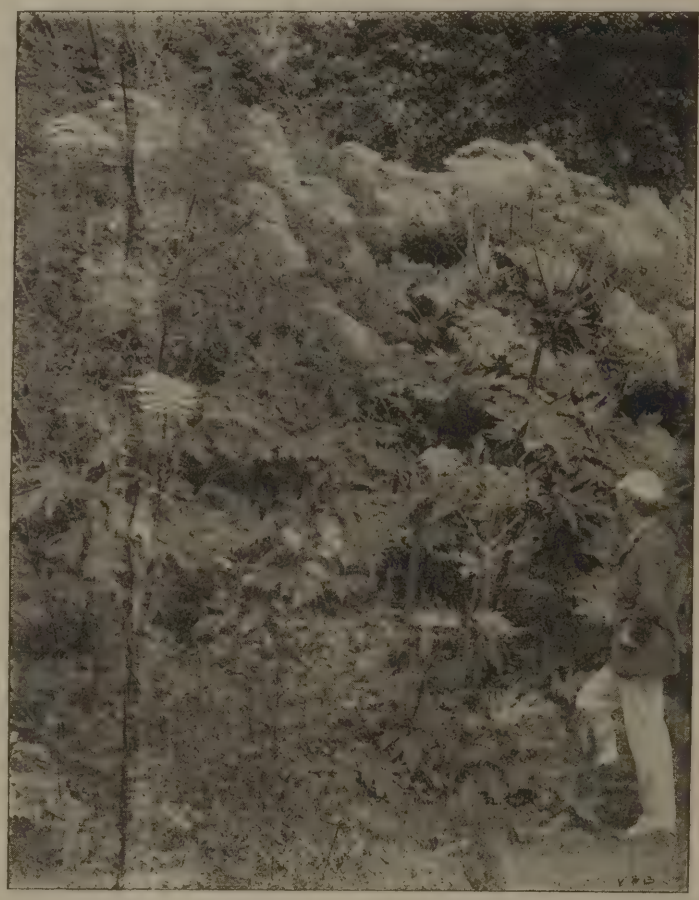
S. W. F.

CACTUS DAHLIAS.

No type of the Dahlia has shown such wonderful advancement as the true Cactus form of these excellent early autumn flowers. Each season shows some most desirable gains to this section, and the present one is no exception to the now established rule of progress. The recent exhibitions have been prolific in the representation of the best forms of the Cactus type of the flower, and not only have the different classes been well contested, but the individual exhibits have been remarkably representative. In several instances the exhibits showing high cultural skill have possessed flowers of large size and beautiful colour; but the former has been at the expense of form—really the most essential quality in this type of the Dahlia. On this account several growers appeared somewhat disappointed that their flowers had not been recognised in the way they thought proper; but the explanation of the whole matter was found upon comparison to be the indifferent form of their flowers through too high culture. The blossoms which found most favour were those which were not over large, and possessing florets neatly fluted or quilled, and prettily pointed at the tips. If this rule be persistently observed, there is little danger of the exquisite form peculiar to this type of Dahlia being lost sight of, while, on the other hand, if the large and less interesting flowers be recognised by awarding them prizes, it certainly points to the extinction of beautiful form, such as most ardent admirers wish to see retained.

Any ordinary observer must have noticed how keen was the interest in these flowers by the visitors to the shows, proving most conclusively which type of the Dahlia appealed to them from a decorative point of view—the aspect from which the ordinary observer would look upon the exhibit. The brilliancy of the colours and their pleasing variation appealed very strongly to most minds, and the less formal way of setting up the flowers in sprays of six made a very effective display, and also made a welcome contrast to the old method of staging individual blossoms on bare green boards. The most conspicuous sorts were: Fusilier, fine deep salmon, of beautiful form, height 4 feet; Mrs. Wilson Noble, lovely pinkish-salmon, of splendid form and freely produced, height about 3½ feet; Mayor Haskins, a most effective glowing crimson colour, long and twisted petals, height about 3½ feet; Harmony, a medium-sized flower, colour reddish-bronze, yellow towards the centre, beautifully curled and pointed florets, height 3 feet; Blanche Keith, fine rich yellow, of good form, long and twisted petals, height about 3 feet; Mrs. A. Beck, a medium-sized flower, colour rich reddish-bronze, free flowering, height 3 feet; Earl of Pembroke, large flower, colour bright plum, deepening in the centre, height about 3 feet; J. E. Frewer, a flower of splendid form, colour rich velvety-vermilion, height 3 feet; Mrs. Francis Fell, a beautiful white flower of lovely form, with a faint suffusion of yellow at base of the petals, height about 3 feet; Lady Penzance, a free-flowering variety with flowers of good form, colour pure yellow, height 3 feet; Delicata, as the name implies, a delicate, soft peach colour, a very beautiful flower, height about 3 feet; Casilda, a beautiful sulphur-yellow, edged bronze, a blossom of exquisite form; Night, rich maroon, passing to a brighter shade of the same colour toward the edges; Daffodil, a flower of ideal form, colour soft primrose; Alfred Vasey, brilliant orange-salmon with beautifully fluted petals, a most effective flower; Island Queen, a very lovely flower, colour a pleasing shade of mauve-pink, very neat and pretty; Eileen Pallisier, a charming flower, colour a lovely sulphur; Countess of Gosford, a unique flower, colour cinnamon suffused with gold, height about 3 feet; Miss Annie Jones, crimson, shaded scarlet, petals prettily twisted, height about 4 feet; Gloriosa, a flower with long pointed petals and regularly twisted, colour rich velvety-crimson, height about 4 feet. The above varieties should provide a nice variation of colour in these beautiful flowers, and either for exhibition or for ordinary garden decoration and for cut-flowers the selection should meet the needs of most growers. Several of the present season's novelties are included, so that the list may be considered quite up-to-date.

D. B. C.



Giant Cow-parsnip (Heracleum giganteum) in the garden at Tryern, Sussex. From a photograph by Miss Dryden, Canons Ashby, Byfield.

Plants for a wall (*A. B.*). — Ayrshire Roses, Jasminum nudiflorum, Cratægus Lælandi, Chimonanthus fragrans, and Corchorus japonicus would grow well in your soil. The undermentioned hardy evergreen plants would also succeed: The blue-flowered Passiflora (P. cœrulea), and the magnificent white-flowered variety named P. cœrulea Constance Elliot. Both are free growing, and produce large quantities of flowers when well established. Lardizabala biternata is another quick-growing plant with ornamental deep green leaves. Garrya elliptica is one of the most beautiful of hardy plants, and although not a climber in the proper sense of the word, it takes very kindly to, and grows well against, a wall. When carrying its long catkins it is not only distinct but very beautiful. Though rather tender in some parts of England it should withstand the rigours of an ordinary winter in your locality. Berberidopsis corallina well deserves a place. It is of rapid growth, very ornamental, and quite hardy. Its pendent flowers are of a lovely coral colour. Akebia quinata is a very quaint and quick growing shrub, and would suit your purpose well. The Trumpet Honeysuckles are also first-rate subjects, especially the varieties named Caprifolium sempervirens, C. s. Browni, and C. s. Shepherdi. Amongst the ordinary forms of Honeysuckles, Lonicera Halleana, L. flexuosa, and L. brachypoda aureo-reticulata are the best. Bridgesia spicata and several varieties of Smilax are good ornamenal and quitck-growing shrubs. Cotoneaster thymifolia and Magnolia grandiflora are capital subjects for training against a wall. Amongst the deciduous section the few varieties here named would thrive well: Wistaria sinensis is one of the most beautiful of all the hardy climbers; its huge panicles of flowers are borne very freely, even on young plants. Periploca græca is also a fast-growing subject. Virginian Creeper (Ampelopsis Veitchi) is one of the best of self-clinging climbers. The Dutchman's Pipe (Aristolochia Sipho) is a very fast grower. Its large leaves are of a most pleasing shade of green. Bignonia capreolata is another good wall plant. It bears an abundance of reddish-yellow flowers.

White Japan Windflower (Anemone japonica alba).—Among the many hardy flowers of autumn the white Japanese Anemone is one of the oldest and best known. Its white blossoms are extremely graceful for decoration, though they do not last very long when in a cut state, yet used in conjunction with Michaelmas Daisies and early-blooming Chrysanthemums they are very pleasing. This Anemone flourishes in any position, and the other day I saw a magnificent clump growing and blooming profusely in an old cottage garden now wild and over-

grown, with no traces of the homestead remaining except a small pile of crumbling bricks.—H. H.

THE JAPANESE IRIS (I. LÆVIGATA).

To see this Iris at its best it should be planted close to the water; still, where this cannot be carried out, it will succeed and flower well provided the soil is always kept moist by artificial waterings when required. There are really some magnificent varieties of this Iris now in cultivation, but though the contrary opinion is expressed by many, I must confess that to my mind the self-coloured blossoms, such as the rich purples, deep blues, mauves, and pure whites, are more ornamental than those with striped, flaked, or splashed blooms, though some really striking flowers are to be found amongst them. These novel marked blooms, as a rule, predominate among those imported direct from Japan, considerable numbers of which reach here during the winter months. They are sent enclosed in masses of the stiff loamy clay in which they have grown, and reach here during the dormant season in good condition. If planted in a favourable place they will, as a rule, flower in the greatest profusion the first season after planting. Seed ripens readily, and from this

An Iris garden in Japan.

young plants can be raised in quantity, the progeny, as a rule, being very variable. Unless in swampy spots, a large form of black thrip is very troublesome, and frequently disfigures the leaves of this Iris to a great extent. They are very difficult indeed to dislodge, as they shelter at the base of the leaves, which are closely adpressed together, so that it is impossible to get at them without damaging the young foliage, and this last is often irretrievably injured before expansion. The drier the atmosphere in which they are growing the more liable they are, of course, to be attacked in this way. Imported plants often contain these thrips, ready to start on their work of destruction with the return of spring. An illustration is given of this Iris in a Japanese garden, in which it is frequently used. Of recent years large importations have been received from Japan, but its culture in England is still restricted. This is to be regretted, as few moisture-loving plants are more handsome.

T.

Sedum spectabile.—Among other gems of the autumn nothing is more pleasing than the rich, rosy heads of Sedum spectabile, which should be accorded a place in all gardens where autumn flowers are appreciated. The plant is among the easiest to grow, and coming in at a time when the summer display of bloom is over it is of double value. The flowers keep well in a cut state, and are extremely useful for decoration. When grown in pots it is well worth a place in the greenhouse, as it is easy to cultivate, and its pleasing heads of flowers are a contrast to other autumn and winter-flowering plants. The favourable weather which we have recently experienced has promoted the beauty of all autumn flowers, including Sedum spectabile, the blooms of which have, in consequence, come larger and of brighter colour than is the case in some seasons.—H. H.

INDOOR PLANTS.

PALMS FOR GREENHOUSES.

I HAVE noted that many lovers of Palms who have only ordinary greenhouse accommodation in their gardens are thereby deterred from attempting their culture under the erroneous idea that they require, generally speaking, a high temperature to produce successful results. Now this is, of course, the case with many Palms; but there are, fortunately, others of the greatest beauty and usefulness that will thrive well in an ordinary greenhouse, and in small pots into the bargain. The hardiest kinds, as a rule, may be taken as the most useful. Amongst these the Kentias hold a first place; the elegant drooping habit of their foliage, which they retain much longer in good condition than many other species, and the length of time they can be kept healthy in a small state, are points greatly in their favour. Small plants, such as are procurable in 6-inch or 7-inch pots, will not get too large for ordinary purposes for a considerable number of years, provided too much pot-room is not given them after they are obtained. Palms are not particular as to the time of potting, provided it is not done when they are in a dormant state, or when the season is so far advanced that little root progress can be looked for. Young stock, the roots of which are supposed to be too much confined, should be at once turned out of the pots to ascertain their state. If the soil is much matted with roots they ought to be moved into pots 2 inches larger. Palms like good holding loam to grow in. They will also succeed in peat, but loam I have found to be preferable, if it is good in texture and of rich quality. Some sharp silver-sand may be added to the soil, and care should be taken to drain the pots sufficiently, as they require a good deal of water during the growing season. Kentia australis, K. Fosteriana, and K. Belmoreana are all fine kinds. The last-named is the most suitable for growing where the room is limited. Ptychosperma Alexandræ, almost identical in appearance with Seaforthia elegans, is likewise a desirable species, and in some respects is superior to the Seaforthia. Rhapis flabelliformis is one of the smallest Palms in cultivation; it will do well in an 8-inch or 10-inch pot until it is six or eight years old. Chamærops humilis and C. Fortunei are both very hardy kinds, and being slow growers, especially the first-named, many years elapse before they get too large under cool treatment for a moderate-sized house. Corypha australis is another handsome Fan-leaved species that, like the preceding, will bear any amount of hard usage; it is also a slow grower when kept cool and restricted as to root space. Phœnix reclinata is a beautiful species, with elegantly sub-divided arching leaves, that are retained on the plant in good condition for years. Cocos Weddeliana, for a long time supposed to require much heat, will succeed where a winter temperature of from 45 degs. to 48 degs. is kept up. Areca Baueri will also succeed under similar conditions to the Cocos, but it is a larger grower than most of the kinds mentioned, and requires more room sooner. In the case of any of the above plants that are already in pots as large as are deemed desirable, manure-water given at intervals during the growing season will keep the foliage in a deep green, healthy condition, when without its use the leaves would turn yellow and sickly-looking. These Palms will be the better for a thin shade over the glass for a few hours daily in hot summer weather.

B. H.

SUITABLE PLANTS FOR FORCING.

A FEW of the best plants for forcing are to be found in Dielytra spectabilis, Lily of the Valley, Spiræa or Hoteia japonica, Azalea mollis, Deutzia gracilis, Kalmia latifolia, the double-flowered Prunus, and Persian Lilacs. It is very easy to force these, but if begun too early, and especially if hurried at first, we do not get such good results. All of them force better if started in the new year, as then plant life is naturally once more on the move. It is also well to place all of them in a cool, moist, and shady position at first; beneath the greenhouse bench is a good place, bringing them forward when growth has commenced. As many fail with Lily of the Valley, it may be well to give a few hints upon that subject. Procure thoroughly good crowns, pot about fifteen of these in a 5-inch pot, pressing a light loamy compost firmly around the roots. Now give a thorough watering, and plunge in a cool pit as for Hyacinths and other bulbs. As the crowns plump up, remove a few pots to the propagating-case, affording a bottom-heat of 70 degs. to 80 degs., and giving a thorough soaking of tepid water. They will want plenty of this during the whole time of forcing. Cover over the crowns with Moss to a depth of 2 inches, and when the new growth peeps through this it may be removed, and each pot stood in a small saucer of water, close to the glass of a warm greenhouse.

P. U.

Rhodochiton volubile.—This plant is one of the best suited among greenhouse climbers for providing a sort of transparent screen, the trailing pendent branches assuming this habit when the plant is trained to the principal rafters in the greenhouse. The plant is also very free flowering, though the somewhat bell-shaped blossoms are not of a very attractive shade,

GARDEN FUCHSIAS.

The Fuchsias now so common and often so graceful and beautiful in our open-air gardens and conservatories date from about the year 1837, when F. fulgens, F. corymbiflora, F. cordifolia, and others were first introduced from South America, where, with but a few exceptions from New Zealand, all the fifty or sixty species known to botanists are wild, or exist in the native state. Botanically, the Fuchsia belongs to the natural order Onagraceæ, and are really shrubby relations of our herbaceous Willow Herbs, or Epilobiums, and of the beautiful North American Œnotheras, or so-called Evening Primroses.

A friend who has collected Orchids in the South American forests and mountains tells me that both Fuchsias and Begonias are frequently epiphytal there, and are lovely as seen clustering around tree-trunks, or as dangling from damp rocks and boulders near to the mist and feathery spray of waterfalls in full sunshine; a fact that may suggest other phases of culture in our gardens and conservatories here at home.

Fifty or sixty years ago the long-flowered species were crossed or hybridised with the globose-flowered kinds, and artificial crossing has ever since been carried on with results that are in some ways very remarkable from an evolutionary point of view. To-day we have single Fuchsias and double-flowered kinds, some, such as Sensation, Duchess of York, and Ballet Girl, being miracles in change of size, form, and colour. About thirty years or so ago the dainty old Mme. Cornillison attracted nearly as much attention as did the first Fuchsia sent out by Lee, of Hammersmith, or as did the first silver variegated Zonal, called "Flower of the Day." In both instances carriages thronged the old entrance to the Vineyard Nursery, their occupants intent on carrying home their new purchases with them.

It is nearly one hundred and fifty years ago since a French missionary, Father Plumier (= Plumieria, or Frangi-pani), found the first South American Fuchsia.

In the grandiloquent botanical language of the time this plant was called Fuchsia triphylla flore coccinea, and it is curious in this connection to note that F. triphylla was one of the last of all the known species to be introduced to cultivation in Europe. Plumier (1646—1704) dedicated his new genus to the memory of his predecessor, the celebrated Leonard Fuchs, and its description is in his book, published about 1705.

Leonard Fuchs (1501—1566) was, after Brunsfels, one of the pioneers of early botanical science, and his "Histoire Générale" and the "New Kreuterbuch" are his best memorials, his wood engravings being of a very high order of excellence, and far ahead of any others of his time.

The first Fuchsia.

It is curious to find that the original or first Fuchsia introduced to England was brought over, as it were, accidentally by a sailor, who gave it to his mother, who grew it in her little window at, or near, Wapping Old Stairs.

The story, as originally related by the late H. Noel Humphreys, has often been repeated, but is good enough and simple enough to find a place here. A casual visitor, fond of plants, called at the then celebrated Vineyard Nursery one day, and was courteously shown round by Mr. Lee, the proprietor. Every plant-house was inspected, almost every plant examined, and still the stranger lingered, seemingly unsatisfied. At last he said—"Well, Mr. Lee, I have been looking for a lovely plant with buds like coral eardrops and exquisite flowers that I saw the other day, and you do not appear to possess it here." Curiosity thus aroused, Mr. Lee asked and obtained full details of the locality where the new wonder had been seen, and early next morning started in his gig for Wapping, and slowly drove up and down until at last he saw the plant in a window—a sight, as he afterwards said, that made his heart nearly jump into his mouth, so novel, fresh, and graceful did the little bud and flower-laden little plant appear. Entering the house, he had considerable trouble in inducing the woman who owned the plant to part with it even for a consideration, but eventually, on his offering her seven or eight golden guineas (all he had with him at the time), and promising to return her a plant as good or better than her own, she allowed him to pack it up and stow it away in his vehicle; and report says that he drove home a happy and exultant man. The little plant was soon increased to dozens, and these to hundreds, and on the day of its being distributed or "let out," as it was then called, some of the richest and fairest women of England's nobility almost fought for precedence at the nursery, each eager to carry off such a lovely novelty as a prize.

Nowadays, after over half-a-century of garden culture and selection, Fuchsias of many kinds are abundant enough in nearly all gardens, but we can never possess too many of the best species and hardy varieties, nor can we be too careful in the best and most artistic arrangement of them.

Fuchsias in the South.

In the South and West of England, Ireland, Scotland, and the Isle of Man, as also in the Channel Islands, most of the best Fuchsias are quite hardy and luxuriantly beautiful in the open air. In Devon and Cornwall it is not unusual for cottagers to stake their Peas and Runner Beans with old stems of Fuchsias, and Fuchsia-hedges are nearly as common there and in South-west Ireland as are those of Escallonia in the Scilly Isles. Fuchsia globosa and its relative, F. Riccartoni, and F. gracilis often attain to the dimensions of small trees in light damp soils and in sheltered positions. There is, or was, one fine old umbrella-topped Fuchsia at St. Fintan's, Howth, and a gigantic specimen exists near Braddan, in the Isle of Man, under which a family could easily shelter from sunshine or shower. In Hampshire and the beautiful Isle of Wight the hardy Fuchsias are often most beautiful.

In South and South-western Ireland the Fuchsias form one of the most rapid-growing and most beautiful of hedges or sheltering screens.

All that is necessary is to put in cuttings into a deep trench in June, July, or August, and the genial nature of the climate soon does the rest. With but slight protection at the root or collar I have seen the hardier kinds pass through even the most severe winters unscathed. A little Bracken covered with coal-ashes is enough to keep the frost out of the ground at their roots. Of course, in cold and wet localities the plants are cut down every winter and shoot up again afresh in the spring. They form spreading masses of foliage, and bloom 3 feet to 6 feet in height or more.

Hardy Fuchsias.

F. macrostemma globosa, F. m. Riccartoni, F. m. gracilis (in variety), F. m. pumila (= Tom Thumb); F. dependens; F. Dominiana, foot of south or west walls; F. procumbens, warm, sheltered rocks only, or clefts or chinks in west wall; F. corallina (F. exoniensis), small tree in sheltered spots West England and Ireland or West Scotland, young growths purple-red or bronze; F. microphylla, F. thymifolia, both very pretty at foot of warm west or south-west walls, if sheltered and roots protected during frost; F. Mme. Cornillison, one of the most free and hardy of white petalled kinds, lives for years if protected with dry soil, ashes, or peat during frost.

Many of the best new seedlings or florist's varieties are hardy in south and west if slightly protected during hard or bad weather; but it is so easy to lift and store the plants with balls of earth before frost that they may be bedded out during summer even in cold northern places. All the Fuchsias are fond of moisture overhead, and large plants or beds of Fuchsias are much helped and improved if sprayed frequently with hose or syringe, especially during hot, dry weather.

It would be very helpful if those who have proved other species of Fuchsia to be quite hardy would kindly state name of species, aspect, climatic conditions, and locality.

Even in the coldest of bleak places on soils unsuitable one may grow these most graceful of all flowers in cool greenhouses or corridors, or even in the windows of a cottage or dwelling-house. Cold and severe as the climate may be northwards, the Fuchsias are like Dahlias, Cannas, and other thick-rooted deciduous or herbaceous half-hardy plants. They may be lifted *en masse* late in autumn after all their leaves have fallen and stored in a shed, cellar, or even buried deeply under evergreen trees, secure from severe frost until April or May, when they can be replaced in beds or borders as before. Fresh planting in this manner every spring really adds to their fresh luxuriance and beauty. In Holland I once saw all the windows of a large and airy cow-shed most beautifully adorned with fine pot specimens of the hardier varieties of Fuchsias, and the same is true of thousands of cottage windows throughout the length and breadth of England to-day. Grow them as one may, it is next to impossible to destroy the native grace and elegant beauty of these flowers, still they are peculiarly charming as seen depending from the rafters overhead, or as seen in hanging-baskets or épergnes above the line of vision. I saw an old half shady conservatory the other day in which the whole roof was one glorious network or mosaic of crimson Fuchsias and white Chilian Bellflowers, or Lapageria. In another place a glass-roofed corridor, over a 100 feet long, was simply one long green tunnel of Fuchsia flowers, and the effect as the warm sunlight came through some neighbouring trees could never be adequately described. Although, as a rule, floral fashions are to be deprecated, yet we should like to see the great Fuchsia family taken up and made the most of, either by our public or private gardeners, or by both. Just at the moment I am by no means sure where even a tolerably complete and representative collection of species may be seen, and in looking over my own collection I feel a little chagrined that it is not more complete. The species as introduced wild from the uplands of Mexico, Chili, Peru, Eucador, Brazil, and other parts of South America are so variable in size, form, habit, and flowers, that one may safely say that, as in the case of Begonia, Pelargonium, Chrysanthemum, Azalea, Camellia, Rhododendron, etc., there are kinds to suit all tastes and requirements. F. apetala, F. procumbens, and one or two others are botanically of peculiar interest, and it seems a pity that such light and graceful kinds, such as F. microphylla, F. thymifolia, F. "Tom Thumb," etc., are not more often seen. One of the most distinct and effective of all old species is F. fulgens, which we have seen particularly fresh and flowering at Kingscote-station, on the London and Brighton line of railway, as also in sunny cottage windows, where it has long held a favoured place.

F. corymbiflora is charming with its clustered flowers in pendant masses as well grown. F. corymbiflora alba is also highly spoken of, but, alas! it is to me like the white-flowered Vallota—all the more attractive because I possess it not.

One of the earliest of garden hybrids appears to have been Mr. Dominy's seedling, F. Dominiana, raised at Exeter, about the year 1852, between F. serratifolia and F. spectabilis. It is figured in Van Houtte's "Flore des Serres," plate 1004, and is not unfrequently met with in good old gardens. Fuchsia cordifolia is one of the most distinct in form and colour, its flowers being cylindrical and of a vivid red-scarlet and green.

F. macrostemma and F. gracilis are both very variable hardy kinds, as also is F. Riccartoni, a seedling or hybrid of the first-named species, raised at Riccarton, near Edinburgh, about the year 1830. It is one of the most luxuriant and free flowering of all the hardy kinds, and withstands severe winters in many parts of Scotland, being especially happy along the mild west coast, where I have seen its flowering wands nearly covered with the delicate green tracery and vivid scarlet flowers of Tropæolum speciosum. F. triphylla is perhaps one of the most tender of all, being a native of the West Indies, at a comparatively low altitude.

F. spectabilis, F. serratifolia, F. venusta, F. splendens, F. simpliacaulis, and one or two others are but too rarely seen. The dwarf or pendent New Zealand species, F. procumbens, is hardy as a prostrate rock shrub in mild places, and is particularly charming as grown in a hanging-basket, so that its greenish-chocolate flowers and dainty little clusters of blue anthers can be seen. Either in flower or in fruit this Fuchsia is pretty to look upon all the year round. It is most fortunate that more than a dozen attempts made by as many botanists to found new genera on species of this genus have failed, and, beautiful as are the best of the florists' variations as grown in greenhouses, some of us regret that while so much care, skill, and atten-

Fuchsia pumila.

F. splendens.

F. globosa.

Small-leaved Fuchsia (F. microphylla).

F. fulgens.

Trailing Fuchsia (F. procumbens).

F. gracilis.

F. serratifolia.

tion has been devoted to these for over half-a-century, so little comparatively has been done to develop and cultivate the best and most distinct hardy kinds.

Planting Fuchsias.

We may have Fuchsias on walls or planted as hedges or dividing lines or for shelter, or the dwarf and prostrate-growing kinds may be planted in bold masses or beds on the Grass, with spring bulbs intervening for spring bloom just as the young Fuchsia shoots appear. I have just seen a mass of a Fuchsia we here call F. dependens or F. prostrata that drooped like a cascade of green and crimson-scarlet from a sheltered boulder to a Lily pool, 10 feet or 12 feet below its roots; and such a flowery curtain for bare stones was a sight worth going far to see. Just now at Glengariff, and all around the shores of Cork and Kerry, the Fuchsias are glowing with bud and bloom; and in the vicarage garden at Glengariff a weeping variety is now lovely, hanging out of a growth of other shrubs, such as Tea Rose Rêve d'Or and Traveller's Joy.

But enough, for one might go on interminably, so varied and delightful are Fuchsias, as seen under almost infinite different aspects and conditions. Those who wish for a good list of species and garden forms can consult Nicholson's "Dictionary of Gardening," or the best trade lists or catalogues. The "Index Kewensis" contains over 100 specific names, and the chances are that the recesses of the vast Cordilleras and the Andes contain many more kinds than are now known; and, really, one cannot have too many native variations of a genus so easily propagated and grown in so many ways, as is possible alike to peer and peasant in the case of the Fuchsia.

F. W. Burbidge.

FRUIT.

GOOD KEEPING APPLES.

Few Apples of recent introduction have proved so valuable as Prince Albert, and though it has been some forty years before the public, it is only during the last quarter-of-a-century that it has come to the front and become a general favourite. This variety promises to be one of the best Apples of the century. As seen in the illustration, it is a handsome fruit, and what is so important to the amateur is it never fails to crop. I do not know what stock the raisers (Messrs. Lane, of Berkhampstead) of this splendid variety worked their scions or buds on, but my trees are mostly worked on the Paradise, and they produce very fine fruits in abundance. Probably they are more precocious on this stock, as my neighbours with trees on the Crab-stock have better keeping fruit, being later to mature. The fruit is large, conical or roundish, very smooth skin, free of irregularities, and when ripe a pale green, flushed with bright red on the sunny side, and the stalk is deeply set. The fruits are not so subject to dropping as some kinds, the stalk having a firmer hold. Its season is from January to April; but I have kept fruits well into May in a cool store, and in no case, on whatever stock it is grown, should the fruits be gathered before they part freely from the tree. Being a late Apple, if gathered early they shrivel badly. I attribute its good keeping qualities to its tough skin. This latter makes it valuable for market, as it travels well, and those who can store till after Christmas will find a good demand for the fruits.

Prince Albert Apple.

As regards its value to the amateur, it is well to point out that any variety which fruits freely in a young state must be more valuable. The Apple in question is one of the most prolific varieties we have. I admit Warner's King, a softer early Apple, is larger, but of less value in every way. I know a large grower for market, who, some fifteen years ago, planted Prince Albert in quantity, and during that time he has only had three bad years. Even in the worst seasons this variety gave a sprinkling of fruit when others had none. In good years he has found it most profitable.

I advise early planting, say as early in November as possible; indeed, last year I removed a number of trees in October, but then the ground was moist. At this date it is the reverse, and retards planting, as it is not wise to let the new wood shrivel when planting. Much could be said as to the best position and how to plant. Fortunately this variety is not at all fastidious as to soils. Of course, in a good loam, such as is found in many parts of Kent and the West of England, the fruits of this variety develop to a very large size and grand colour. On the other hand, on wet, clay soils, though of less size, the quality and crop are not much affected, and with this variety there is an absence of rough or cracked fruit, the trees root nearer the surface, and make a lot of fruiting spurs yearly. The wood of fair-sized trees is somewhat pendulous, and owing to the great weight of fruit supports are often needed.

For small gardens I prefer the bush or trees with a short leg or stem, say, 18 inches clear of the soil, and grown thus there is very fine fruit and better colour. I go into this mode of culture at length as it is one most suitable for the amateur. The trees grown thus can be planted much closer together, a great gain for the amateur who cannot afford much space. The most profitable lot of trees I have seen were those I referred to earlier in my note. These were planted at 12 feet apart each way, and grown thus as bushes had assumed an upright growth, the fruits being closer to the main stems than with spreading trees.

On the other hand, my readers must not think that bush-trees are the most profitable. Doubtless those who only need fine fruits will find bush-trees the best, and they are more readily managed. Those who exhibit can feed such trees. The Apple delights in copious supplies of liquid-manure after the fruit is formed, and how few feed their trees. They well repay, however, for the labour entailed. Probably the most fruitful trees are the standard forms; these are often planted in small gardens. I do not advise them as they are frequently allowed to run wild, and though they cover much ground vegetables are planted under them, but it is not a happy mode of culture. The under crop is poor, and with crowded trees the fruits are small. The bush or dwarf tree has much in its favour. There are fewer small fruits, and the trees can be kept in shape and produce a pleasing effect in a well-kept garden. For quantities I say the standard tree, for quality the bush or pyramid on the Paradise-stock. Give plenty of food, and keep the wood thin. I have some cordon trees of this variety which I value greatly, as they are so beautiful when in bearing and profitable also. No matter how grown, however—bush, standard, cordon, or espalier—it never fails to give a good return. For many years I have watched this variety with great interest, and its well-doing in so many forms in diverse—indeed, often poor—soils induces me to pass such a favourable note on its behalf.

I have not alluded to other varieties noted for keeping, but for crop and size I would add the following to the list of good cooking kinds: Newton Wonder, a new fruit of great excellence, a rival to Prince Albert; Alfriston, Northern Greening, Wellington, Norfolk Beaufin, Annie Elizabeth, Sandringham, Bess Pool, Prince Arthur, High Canons, Dutch Mignonne, a small fruit but a long keeper, and Bramley's Seedling. Some of these are not so prolific as one could wish. Alfriston, Wellington, and Northern Greening rarely miss cropping, and keep well into the spring, besides being of excellent quality.

W.

Cornish Heath (Erica vagans).—This is one of the latest flowering of the hardy Heaths, and is still in bloom after the colour has all faded from the numerous varieties of the common Ling (Calluna vulgaris). It is one of the most desirable of our native or European Heaths, being quite hardy, growing freely in any soil that is devoid of lime, and flowering with unfailing regularity from August until the end of autumn. Its dark green leaves are larger than those of most Ericas, and the flowers, which are produced in the closely-set leaf axils, form in the mass large, erect, tapering racemes, which give a most graceful aspect to the plant. In the ordinary form the flowers are of a pale reddish-purple colour, but there are besides a pretty variety with white flowers called alba, and another with more closely-packed racemes called grandiflora. In Britain this Heath occurs wild only on the moors of Cornwall. It grows to a height of about 1 foot, and is seen at its best planted in good-sized groups on sloping banks.

Cordon wall-trees (*Wire*).—It is one of the received theories in connection with the culture of fruit-trees against walls that the nearer the wall the greater is the stored as well as reflected heat derived, and from which the trees benefit. That is the reason why nailing to the wall direct is after all so much more favoured than is wiring walls, which keeps trees from getting the full benefit of this heat. If, however, you must wire your wall, you should have fixed to the wall at either end a piece of wood an inch thick and at least 4 inches wide from top to bottom. This should be fitted most securely to the wall, so that it will endure a good strain. Also fix strips of wood 1 inch thick and 2 inches wide at intervals of 3 yards along the wall, also from top to bottom. Fix in one of the end strips stout screw holdfasts at 9 inches apart all up it. To these secure the ends of lengths by a fairly stout galvanised wire, only sufficient to bear a strong strain without breaking. To the other end have fixed, also at 9 inches apart, other but stronger screw holdfasts, through which the other end of the wire should be tightly drawn, and then be fairly firmly screwed up. Then where each wire crosses an intermediate upright drive in a small holdfast, not tightly at first. When that is done screw the end holdfasts as tightly as they will admit of, then drive in the small holdfasts hard, and the wall will be

admirably wired. It will be seen, however, that we have advised the wires be only 1 inch from the wall rather than 3 inches, which is too far. Eighteen inches apart for the trees will do very, well, but do not expect them to fruit the first year after planting. In any case it would be unwise to let them do so. Get this wiring and planting done at once. Before planting open out and thoroughly trench the ground at the base of the wall 3 feet wide and 2 inches deep. Keep the lower soil down, add just a little of old decayed manure, but after planting mulch the surface with some.

Planting orchard-trees (*B. C.*).—Your land, being so near to the sea, is probably somewhat wind-swept. If that is so, some shelter from rough winds in the form of a double row of Spruce or Scotch Fir, planted on the windward side, would be of great service; then you should plant either bush-trees or dwarf standards of Apples and bushes or pyramid Pears, also rather dwarf Plums. Then of Apples, good, compact growers are Manx Codlin, Stirling Castle, Frogmore Prolific, Cox's Pomona, and Lane's Prince Albert, an excellent succession of kitchen varieties; and Worcester Pearmain, King of the Pippins, Cox's Orange Pippin, and Cockle's Pippin are fairly compact-growing desserts. A couple of trees or so of a variety might be planted. Of Pear-trees, plant Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré d'Anjou, Alexander Lambre, and the fine baking Pear Catillac. Put Farleigh Prolific Damson-trees on the windward side, and of other Plums plant Rivers' Early Prolific, Czar, Victoria, Gisborne, and Monarch, cooking; and Green Gage and Prince Englebert for eating. The fact that the soil is stony is rather advantageous, provided you have the needful depth of soil, which should be from 18 inches to 20 inches deep, being trenched to that extent. When the trees are planted have them securely staked in case of wind-storms prevailing. They should, however, not be tied too tight, as the soil will settle down somewhat for a few weeks after planting. Distances apart for trees may be at discretion, but not less than 10 feet at least, and rather wider—say, from 12 feet to 15 feet—apart would be better, filling in beneath for the next few years with Currant and Gooseberry-bushes, Raspberries, and Strawberries.

Outdoor Peach-trees.—Now that the season is over—for the crops will have been gathered from the majority of the trees by this time—attention should be turned to the trees once more, giving them a final look over in order to relieve them of all superfluous wood. There is not much to do in this direction when the trees are intelligently cared for, as very little more wood than is considered necessary is retained when laying in. On the other hand, where every available inch of wall space has been filled by laying in wood without the slightest consideration as to its being ultimately required or not, the same should be dealt with at once. In such cases the young wood should be judiciously thinned out, cutting away all weak and badly-placed growths, and retaining none but the stouter-looking and better-ripened wood. Lateral growths should be cut away and the old bearing wood also. Gross-looking shoots should be rejected, and if any of the trees have many of these, and they have borne but sparsely, they should be marked for root-lifting with a view to correct the evil. In such cases as this the partial lifting of the roots may be undertaken at once; in fact, the sooner it is done the better. The mulching on the surface of the borders had better be removed now, and this will allow the rays of the sun to penetrate and warm the surface of the border, and so assist in the ripening of the wood and the checking of late growth. If the autumn proves wet and the mulch is kept over the roots very late growth is encouraged, and this, to say the least, is prejudicial to the well-being of the trees, and also endangers the chances of a crop the following season. Where red-spider has been rampant during the past summer, the foliage should be well washed as soon as the fruits are gathered, and this will enable more drastic measures to be used in the effort to subdue the pest. On the whole, I think nothing equals cold water, with a little soft-soap and sulphur added, at this time of the year, and, the fruit being gathered, there is nothing to be feared in the way of disfigurement from the use of the sulphur.—A.

GARDEN LILIES.

The Madonna Lily (Lilium candidum) was the best known in Miller's time, and it is still one of the most beautiful ornaments of the flower garden. It is often seen in a miserable condition owing to bad cultivation and lack of moisture at the roots. The plant likes deep rich sandy loam, and should be mulched and watered in hot weather, otherwise the stem leaves decay before the flowering period is over. The clumps of bulbs should be lifted and replanted every third year. They will grow and attempt to flower for ten years or more if left in the same place, but very poorly. The Tiger Lily (Lilium tigrinum) is not quite so well known, and is not one of the old English garden plants. It seems to have been introduced from China to Kew Gardens by a Mr. Kerr in 1804. Kæmpfer says that the bulbs are eaten by the Japanese. Since the introduction of the original form many fine varieties have been imported from China and Japan. The variety splendens is a superb garden plant, and has produced twenty-five flowers on one spike. I have had stems nearly 6 feet in height. They can be propagated readily by the bulbils produced freely on the stems. All of them are adapted for culture in flower-pots and in the flower borders, but these, like most of the Lilies, will not thrive out-of-doors unless the soil is deep and well-drained, when they form the handsomest of border plants. Amateurs are frequently complaining of their want of success with Lilies, but, as a rule, it is their own fault for not taking sufficient pains to prepare the soil by draining and deep cultivation. The consequence is that the scales which form the outer covering rot at the base and drop off, and the decay spreads rapidly inwards until the entire bulb gives way.

Of Lilium lancifolium there are several distinct varieties grown in gardens, such as L. lancifolium album, rubrum, roseum, etc., but they are as often wrongly named as not, except the white variety, which is easily distinguished. Two forms are figured in Paxton's "Magazine of Botany" for the year 1838, where it is stated that Dr. Von Siebold introduced it from Japan in 1833. One with very richly-coloured flowers is named L. speciosum, the other with white and pale rose spotted flowers as roseum. I find this species succeeds well if grown in the Rhododendron borders made up of two parts peat to one of yellow loam, but in the ordinary garden borders of medium clayey loam they dwindle away. As pot plants they succeed admirably, but from seeing some specimens exhibited at country shows with long bare flower-stems and poor washy flowers at the top of them, people are led to believe that it is not a good greenhouse plant; whereas it is well adapted for greenhouse and conservatory decoration in the autumn, but the plants must be grown so that the leaves are kept in a healthy green condition until the flowers are produced. I plunge the pots containing the newly-potted bulbs in Cocoa-fibre-refuse out-of-doors. When the plants have started to grow they are taken into garden frames, and air is admitted freely. In May the plants may be placed out-of-doors in a sheltered position, and when the roots push out from the base of the flower-stems some rich surface-dressing must be supplied to them. The plants must also be regularly and carefully supplied with water. If they become over-dry at any time, this causes the leaves to assume a yellow cast and the lower ones to drop off, and if this is repeated several times the result is disastrous—we get the tall, naked stems and poor flowers.

Lilium auratum at the School House, Broad Hinton, Wilts. From a photograph by Mr. J. A. Lloyd.

L. auratum is the most popular of Lilies, and before its introduction the Lily family had become comparatively neglected. It is excellent for pots, and requires much the same treatment as L. speciosum, except that it requires more care to prevent the bulbs being injured by wet. Instead of plunging the flower-pots out-of-doors after potting up the bulbs, they should be placed under glass in frames, and they must not be turned out-of-doors after flowering, in case heavy rains may cause the scales of the bulbs to rot at their base. The potting material I use for all Lilies is composed of loam and light fibrous peat in equal proportions, with a fourth part decayed manure and coarse white sand if

necessary. It is best to leave a space of about 1 inch or 1½ inches deep on the surface for the summer dressing. There are several well-marked varieties, the most distinct being rubro-vittatum. This species does well out-of-doors, but the bulbs are liable to rot off in heavy soils in wet autumns. They succeed well in Rhododendron-beds, but need open spaces to allow of their free expansion. The distinct and noble-looking Lily, L. giganteum, succeeds best out-of-doors, but it must be planted in sheltered positions and in a prepared soil of fibrous peat and loam, well enriched with decayed cow-manure. Under favourable conditions the plant will throw up flower-stems 8 feet to 10 feet in height, and furnished with a score of flowers or more upon each. I have also grown it as a pot plant, but it seldom throws up such fine tall stems. L. longiflorum in variety is better adapted for pot culture than the borders, and the variety L. Harrisi is now very extensively cultivated.

The garden Lilies which grow most freely with me in the open borders are L. Henryi, L. Humboldti, L. pardalinum, and L. californicum. They are very beautiful in the herbaceous borders and increase freely. A very handsome species which has also become established in the ordinary soil of the garden is L. Hansoni. All the above have orange-coloured flowers, more or less spotted. They are easily cultivated, and flower grandly in rich deep soil, but they require to be watered freely in dry weather.

J.

TREES AND SHRUBS.

Poplar cankered.—Can any of your readers help me as regards a cure for canker in this tree? It has been planted seven years, subsoil red sandstone. I have been told that by making an incision in the bark of the tree it will effect a cure. Is this correct?—Perplexed.

*** It is rather unusual to find canker in the Poplar. It is no use making an incision in the bark with the hope of effecting a cure. That is useless. Dissolve a little caustic soda and crude potash in hot water, and apply to the cankered part while the mixture is hot.

Selection of trees and shrubs (*M. A. S.*).—We have read your letter, and agree with you that in many cases fuller cultural details might with advantage be given. The subjects of pruning and propagation (by no means properly understood by amateurs) will be dealt with in Gardening in due time. Your selection of trees and shrubs is a good one, comprising plants which bloom nearly every month in the year. As requested, we give the names of a few extra good ones not included in your collection: Philadelphus Lemoinei, Escallonia Philippiana, Magnolia stellata, Ligustrum sinense, Exochorda grandiflora, Daphne Mezereum, Olearia Haasti, Yuccas, Amelanchiers, and Berberis Darwini.

Maidenhair-trees (Salisburia adiantifolia).—I planted one of these last autumn, but it has made no growth—merely come into leaf and does not appear very healthy. It is on a rather cold clay soil in the north of London. Can I do anything to the soil to improve the growth?—R. H. Gill.

*** The Maidenhair-tree is not a very fast grower in a young state, especially the first year after removal. It would have been a decided advantage if well-decayed leaf-mould and a little peat had been added to your clay soil at the time of planting. Unless the tree is lifted and planted in lighter soil, we should recommend you to remove the clay soil close to the roots and substitute the mixture mentioned above. Stiff soil suits this plant well when properly established. Is your soil well drained?

White Broom.—Can you tell me how to grow White Broom in a garden? Can it be raised from cuttings? Does it require peat soil?—Practical.

*** White Broom can be raised from cuttings and seeds. Cuttings should be taken off in July and dibbled into a bed of light soil and covered with handlights. Water overhead occasionally and shade from the sun. Seeds may be sown either in rows or broadcast, and covered with fine soil, and watered during dry weather. If the seed can be sown in shallow pans or boxes, and placed in a gentle heat, germination will be much quicker. Harden off and plant out when large enough. White Broom grows well in almost any kind of soil, with the exception of very wet and cold clay.

Deutzia not flowering (*Practical*).—Deutzia gracilis is the name of the small specimen referred to. It is one of the most beautiful of white-blossomed spring-flowering shrubs. After flowering the plant ought to have been encouraged to make fresh growths, and later on taken outside and stood or plunged in cold ashes and exposed to all the sun-heat possible in order to ripen and prepare its wood for flowering next season. However, we should advise you, even now, to remove the plant to a cold-frame, and in early spring it could be taken into a warm greenhouse to flower. It will then be in a better condition to produce its flowers than if kept in the house in which it is intended to flower. The soil that suits it best is composed of loam and leaf-mould. Anything like stagnation at the roots must be guarded against. Good drainage is absolutely necessary.

Fire Thorn (Cratægus Pyracantha).—For a wall-covering nothing is more suitable than the Cratægus, which during the summer is green and pleasing to the eye, and as soon as the autumn sets in becomes a mass of scarlet beauty. I know of a mansion which is entirely covered with the evergreen Thorn, and at the present time is a splendid colour picture. The plant, moreover, is perfectly hardy, grows rapidly, and many an expanse of wall in positions where other creepers will not flourish might be beautified with its bright green foliage and rich red berries. Where it is desirable to preserve the berries, they must be protected with netting, as when winter sets in the birds are not long before they find them out.—H. H.

GARDEN PESTS.

PROTECTION AGAINST THE WINTER-MOTH.

In those places where the winter-moth is a foe that the gardener and orchard owner has to reckon with—and fortunate, indeed, is the locality where this insect is comparatively unknown—no time should be lost (if it has not already been done) in protecting Apple and other fruit-trees from this pest, and from its near relative the Lime-looper-moth, which at times is almost, if not quite, as destructive as the former insect. Fortunately, the habits of these insects are such that this is not such a difficult task as might at first seem probable. The two sexes of most moths differ, to some extent, in size and general appearance, but in a certain number (the two species just alluded to among the number) the males are so unlike the females that no one who was not an entomologist would ever guess that they were the same insect. The males are like ordinary moths, with two pairs of wings, which, compared to the rest of the insect, are large and conspicuous; the bodies of the males, moreover, are long and slender; the females, on the contrary, are, in the case of the Lime-looper-moth, entirely without wings, and those organs of the winter-moth are of the most rudimentary character. The bodies of the gentler sex are also considerably more corpulent than those of the males. The chrysalides of these insects are formed in the ground near the stems of the trees, so that when the females emerge the only way in which they can reach the buds in order to lay their eggs on them is by crawling up the trees. This can be prevented by forming a sticky band round the stems; it is not advisable to put the sticky material on the bark of the tree, which would, no doubt, be the simplest plan, as by doing so the tree is liable to be injured by the material soaking into the bark. It is, therefore, much better to smear the compound on to something that can be fastened round the stems. The most approved plan is to fasten a band of grease-proof paper, not less than 8 inches wide (Willesden waterproof brown paper 2 ply is very suitable), then tie a strip of canvas or strong calico over this in such a manner that the moths cannot crawl up the stem without crossing it, and smear it with some adhesive mixture. Various kinds have been tried, but the best seems to be cart-grease, laid on thickly (only the best quality should be used). Some persons recommend the addition of a little soft-soap, and there are also several compositions in the market for the same purpose. Whatever is used it is essential that it should remain adhesive as long as possible, and that it should be renewed as soon as it is likely to allow any of the moths to cross it, or has become so clogged with the bodies of victims that it no longer serves its purpose. These bands should be put into place, about 18 inches from the ground, early in October, and be kept in working order until the beginning of January. A very useful kind of trap is used in America—a hoop of tin 3 inches or 4 inches wide, to the top of which is fastened a band of calico, which is tied tightly round the stem. The inside of the hoop is coated with the sticky material, and should be a few inches in diameter larger than the stem it surrounds. Care must be taken that it hangs quite clear of the tree. In the case of espaliers the uprights to which they are attached must also be protected, but the compound used can be put direct on to the uprights. When trees are grown against a wall a sticky band should be painted along the wall. G. S. S.

Apple-bark-beetle (*Constant Subscriber*).—The grub you sent had escaped from the box before it reached the office, so I cannot say what it was; but if it was of a buff colour, with a black head and with several black spots on each joint of the body, it was the caterpillar of the wood-leopard-moth, a by no means uncommon pest in Apple-trees. These insects can sometimes be killed by stabbing them with a sharp wire, as you tried to do, or the opening to the burrow may be enlarged, and paraffin-oil or strong Tobacco-water injected; or the burrow, as far as possible, may be filled with tow soaked in tar or paraffin-oil. If the insect cannot be killed by these means, the shoot or branch that the caterpillar is in should be cut off.—G. S. S.

Insects on Ivy (*G. Chaplin*).—The caterpillars attacking your Ivy, of which you sent a specimen, is the caterpillar of the Swallow-tailed-moth (Ourapteryx sambucaria). As regards preventing this pest from attacking the Ivy, I can only suggest that you should syringe or spray the Ivy well with some insecticide. Paris-green or London-purple, 1 oz. to 12 gallons of water, kept very well mixed, as the powder sinks rapidly in water, would probably be as good as anything; or 1 pint of paraffin-oil, well mixed with ¾ lb. of soft-soap, and added to 12 gallons of water. This operation should be carried out as soon as the caterpillars are noticed.—G. S. S.

Vine pests (*Dennis*). — Your Vine is attacked by mealy-bug, one of the most troublesome pests to get rid of that there is. As soon as the leaves begin to wither so that they are no longer of any use to the Vine, pick them off and burn them, then with a blunt knife scrape off the loose bark from the stems and canes. Do not carry this process too far, as the more tender layers of the bark may be injured by the insecticide which has been used. The only object in removing any of the bark is to prevent any eggs or young ones from being hidden so that the insecticide cannot reach them. The stems and rods should then be painted with one of the following mixtures, well worked into any crevices or cracks—viz., three parts of clay to one part of tar, well mixed with enough water to form a thick paint; or 2 lb. of flowers of sulphur, 2 lb. of soft-soap, and a wineglass of turpentine, made into a paste with a little warm water. Boil 1 lb. of Tobacco in a closed saucepan with 6 quarts of water, strain and mix the liquor with the paste, and add sufficient water to make 5 gallons. All the woodwork should be scrubbed with soft-soap, paraffin, and water. You will not probably get rid of the pest in one season.

Destroying grubs (*J. Green*).—The caterpillars you sent are those of the dart-moth (Agrostis segetum), a very common and most destructive pest, and one that it is very difficult to destroy. During the day they hide under clods or stones, or in cracks in the ground. They may be easily turned out of their hiding-places with a small spud or a pointed stick. Thoroughly soaking the ground with soapy-water is said to bring them to the surface at once, when they may easily be picked up. In America they attract the caterpillars from the plants by mixing together 12 lb. of bran and ½ lb. of Paris-

green. Then add enough water that has been slightly sweetened with sugar to make it thoroughly wet without being sloppy. Put a tablespoonful of this mixture near each plant. It must always be remembered that this mixture is a strong poison.—G. S. S.

Flies (*R. B. Leigh*).—I must apologise for the delay in answering your letter, but I was unable to name the flies myself and I had to send them to a friend, who had to ask the opinion of a third person. The flies appear to belong to the genus Chlorops, and to be probably C. læta. There is no English name for this insect. The grubs of the flies belonging to this genus live in the stems of Grasses and Corn, so what business they have in your rooms, or why they should be there, is difficult to say. Do you by any chance dry Ornamental Grasses in the rooms? Or is there any connection between them and a hay-loft, or any place where there is straw? The flies may be killed by fumigating the rooms with sulphur, as if you were wanting to disinfect it.—G. S. S.

Diseased Celery-leaves (*T. Ellis*).—The leaves of the Celery-plants are infested by a fungus (Cercospora apii), probably, as late in the season as this, I am afraid that there is no remedy. Cut off the leaves that are badly infested and burn them, and do not let any of the refuse from the plants lie about. Quite early in the season, if the disease shows itself, the plants should be sprayed with Bordeaux-mixture; but as that is a poisonous substance, it is not safe to use it after the blanching of the crop has begun.—G. S. S.

Palm-pest (*Dennis*).—From the description you give of the insects attacking your Palm, it is pretty evident that the offenders are one of the scale-insects. Sponge the leaves with warm soft-soap and water, and see that all the scales are rubbed off. Repeat the operation from time to time, as may be required.

"Geranium"-roots eaten (*O. P.*).—I hardly know what to say about your "Geranium"-roots. If they have been eaten by any insect it must have been some time ago, as there is no trace of any insect, and all the exposed parts are in a state of decay. I rather expect that all the injury is derived from the same cause, but I cannot suggest any reason for this.—G. S. S.

Wireworm (*Violet*).—The creature you sent is not a wireworm, but one of the snake-millipedes (Julus londinensis), the "London snake-millipede." They are quite as destructive as wireworms, and may be trapped by the same means, or by laying pieces of slate, tile, board, or turf about, as these creatures are fond of creeping under such things and hiding there during the day.

ROSES.

PREPARATIONS FOR PLANTING ROSES.

The time is rapidly approaching when the transplanting of Roses will be in full swing. No opportunity should be lost in preparing the ground for their reception. I have great faith in early planting. The new roots commence to start and quickly lay hold of the soil, and the check given to the plant enables it to better withstand the rigours of winters.

All exhibitors know full well that the best results are obtained from new land, or such as has borne for a year or two a light agricultural crop. But there are few amateurs who have such ground at their command. It has often occurred to me that individuals with a yearning for exhibiting could adopt the co-operative system, and hire a plot of good land from a neighbouring farmer, supposing that their own ground is unsuited to the production of good Roses. An ideal piece of land would be one that had been under Grass for many years. This should be at once trenched, but do not rob the land of the turf. This should be pared off about 3 inches thick and put into the bottom trench, Grass downwards. I prefer trenching two spits deep. Manure from the cow or pig yard should be used. Although some disregard the use of manure when first planting, I must say I prefer to put it in the soil ready for the plant's requirements, not placed right at the bottom, or even half way down, but sandwiched in, as it were, with the loam. If land is thus treated it will remain in good condition for five or six years, when it could either be trenched again or a fresh plot selected. An ardent exhibitor would not trouble much about how his plants were arranged, provided he obtained good blooms, so that he could give his neighbour a friendly beating.

The most convenient arrangement, and one that allows of the free use of the hoe, is to plant rows 3 feet apart, with the plants 1½ feet to 2 feet apart in the rows. If standards are planted, then 3 feet apart each way would not be too much. Some

Standard Briers

should be planted as soon as they can be procured. See that their roots are covered over with soil and that the Briers are not treated as if they were walking-sticks. I like to get the Briers in before the middle of November. Half standards and dwarf standards yield quite as fine flowers as the more ungainly 3½ feet to 4 feet standard. Splendid Tea Roses are obtained from maiden standards, and it is always advisable to have some each year. Manettis, Brier cuttings, and seedling Briers should not be planted until February and March.

But supposing the plot of land that we are about to turn into a Rose garden is situated in the garden, then the same remarks would apply *re* trenching, unless it has been very recently done. If the land is very stiff some lime or coal-ashes should be worked in.

Drainage

in some form is also most essential on cold, stiff soils. It is marvellous the beneficial effects that accrue to Roses when good drainage is given to the land. After trenching the land should be laid out with Grass-walks between the beds. I prefer these to gravel-paths. The walks should be broad enough to admit of a water-barrow for summer watering, and the beds should not be more than 6 feet in diameter. In planting, my advice is do not crowd the plants; 20 inches to 24 inches apart each way is not too much for most of the vigorous varieties. Of course, stiff growers like Baroness Rothschild and Etienne Levet may be planted closer, but I would not do so if land were plentiful. It is far better to have one well-developed plant than many puny ones.

Training of Roses.

Roses look well grown on pillars or pyramidal form. In my opinion nothing is so beautiful as a fine pillar Rose. I cannot say I admire arches, as they are anything but natural.

Hedges of Roses

should abound, and none are more suitable for this purpose than the Rugosas and Hybrid Sweet Briers. For a good hedge to shelter the garden from the north and east, select the Ayrshire and Evergreen Roses. These, if planted in good trenched land will quickly form an impenetrable living wall 8 feet to 9 feet high, and will be a splendid object when in full bloom. Again, our endeavour should be to have a

Long season of flowers.

This can be readily accomplished if the Teas and Hybrid Teas, together with the Bourbons and Chinas, are freely used, as well as some Mosses, Damasks, Gallicas, Hybrid Chinese Polyanthas, and Austrian Briers. Of course, we must not omit the Hybrid Perpetuals, but we are far less dependent upon them at the present day. For exhibitors they are indispensable, but for garden decoration they are gradually being superseded by the Tea-scented race.

Weeping Roses

may be employed with fine effect. To see a fine plant or tree of Félicité-Pérpetue upon a 6-foot stem, with its pendulous shoots reaching to the ground, and covered with its white blossoms, is a sight not soon forgotten.

Planting the Roses.

See that their roots are not cramped. It will repay anyone if they take the trouble to give each plant a peck or so of good potting compost, composed of loam, leaf-soil, and powdered charcoal or wood-ashes. This soil should be well shaken in among the roots before treading. Sometimes the land is sticky at planting time. I would rather leave it alone until in a more suitable condition, but delays are often dangerous, therefore the best plan is to give the compost as described. When transplanted the bushes or standards will be found to have quite a mop-like mass of fibrous roots. Standards thus treated and transplanted every third or fourth year will develop into grand specimens.

Rosa.

CLIMBERS UNDER GLASS.

We do not know of any more pleasing climber for a cool greenhouse or conservatory than a well-grown Rose. It is the same where a little heat can be given; and if we are careful as regards the position accorded the plant there will be little harm done to subjects beneath. It is the neglect to keep clear from insects at first that causes so many disappointments with our Roses under glass, whether they be in pots, tubs, or borders. Once allow the leaves to become dirty, there can be no more healthful beauty or pleasure in any climber, and this is especially applicable to Roses. We are now tidying up the greenhouse for winter. Many of the subjects from outside are being housed, and we already have the house half full of the various favourites meant to enliven the winter. Now, before setting the plants round it will be well to attend to all climbers, and we will give a little thought to Roses. It may be that scale has attacked them. If so, carefully cut off all growth that can be dispensed with, also leaves, and burn them at once. Next dress over the wood with a solution of soft-soap, 1 oz., and a tablespoonful of paraffin-oil to ½ pint of water. Keep this well-stirred while applying it. The above is a very strong mixture, and must only be used upon ripened growth. Apply with a small brush. The paraffin will cause the mixture to run over the wood freely, and it takes a very short time to dress over a large tree. It is absolutely necessary to use a strong solution to kill such a hardy insect as the scale, but you must not apply such remedies to any soft-wooded subjects thus affected.

The pruning of the climbing Roses is not understood by all amateur readers, although from notes which frequently arrive, we are pleased to say a far less number cut away the valuable wood than was the case only a few years back. No matter what the variety of Rose; if it grows very strongly, producing long rods of flowerless growth, these will carry bloom from every matured eye early in spring; that is, provided other treatment is correct. But if you cut away such wood it is obvious you are sacrificing the blooms as well. Thin out short, lateral growths, and also the wood that has flowered, but upon no account cut away more than can be helped of this season's long rods. Of course, you must regulate the number left according to your space. Overcrowding, even with this class of wood, will cause puny flowers. Let each rod be at least 18 inches apart, and 6 inches to 9 inches from the glass when upon roof. Twelve to 15 inches would be even better, as the new growth in spring is sure to draw towards the light, and a cold and often frozen glass must be injurious to such tender vegetation. See that the border is well mulched with a very rich compost. If the plant is in a tub or large pot, rake off as much as possible of the old soil to add fresh. Many do not give sufficient attention to the difference between the temperature of the soil in an outside and inside border. Where a Rose of vigorous growth has been planted inside its roots are certain to ramble beyond the foundation during the summer months. Now to hurry the top of such a plant when many of its roots are in a very cold, and, perhaps, frozen, soil is most unreasonable. Cover over the outside border by some means; a mulch of light stable-manure is a good plan. If to this you add the help of a few pieces of board, so as to throw off excessive wet, the ground will be in a much better condition, and roots can work steadily. Do not go into a large variety, but stick to such tried ones as William Allen Richardson, Maréchal Niel, Climbing Niphetos, Reine Marie Henriette, and Bouquet d'Or.

Striped Roses.—Among the selections recently given I quite omitted to name a few of those bearing striped flowers. Although I am personally not an admirer of these, the selections would not be complete without some mention of them. They belong to various classes, and six of the best are to be found in Pride of Reigate, a sport from Comtesse d'Oxford, and the only striped Rose that is of sufficient size and substance to rank with exhibition flowers; this is really a good Rose. Merrie England, a very prettily-striped sport from Heinrich Schultheis, is exceedingly sweet-scented, a free grower and bloomer, but not quite constant; indeed, these freaks vary a good deal. Rosa Mundi, often called Village Maid and York and Lancaster, is white with slaty-red stripes, the true York and Lancaster being pale rose or white, often striped, but sometimes coming self-coloured. American

Banner is a good striped variety, and Œillet Parfait, with its red ground striped and splashed with purple and lilac, completes our six. Beauté Inconstant, l'Idéale, Fortune's Yellow, and a few more are also striped and splashed to a certain extent, but not so distinctly as the first six named.—P. U.

BEES.

AUTUMN MANAGEMENT OF HIVES.

Where the honey-extractor has been freely used in depriving the hive of its stores, feeding should be performed with a liberal hand, for it is false economy to leave Bees short of provision for the winter; indeed, those with more than a sufficiency of stores are not only safer for wintering, but usually prove stronger than others in the following spring. A strong colony of Bees should be wintered on from eight to ten combs, two-thirds of which ought to contain sealed food, but no hive at the end of the season should contain less than 20 lb. of stores, this weight being necessary to carry the Bees well into the following spring; but as combs of pollen weigh almost as much as those filled with honey, and as pollen is much more abundantly stored in some hives than in others, the weight of a hive is not always a safe criterion. It is well to remember that combs of stock hives, being sealed over and apparently full of honey, sometimes contain little else than pollen, with a slight covering of honey, and the Bees may, therefore, starve before spring if these pollen-combs are depended upon. When honey is extracted, with the intention of feeding to make up weight of stores, the frames of combs that have been extracted should be returned to the hive, and placed in the same position that they filled before the honey was removed; and any empty combs that are to be packed away for use next season should first be placed in the hive, for the Bees to clear up any honey left by the extractor. All feeding of stocks should be completed by the end of September, if possible, for if delayed later the weather may become too cold, when the Bees will neglect to take the syrup. Bright, warm weather is of great value to the Bee-keeper, as it enables him to carry on stimulative feeding to encourage increase of population in the hive, and thus ensure a large number of young Bees to go through the winter and be ready for the hard work of the hive on the return of another honey season. Late hatched Bees do not, however, prove so strong and vigorous as those hatched earlier; the stimulative feeding must not, therefore, be carried on too long, but time allowed for feeding up rapidly for winter consumption. The feeding should be performed with great care at this season lest wasp and robber Bees be attracted; robbing and fighting is now quickly brought about if any syrup or honey is left exposed even for a very short time, and when once started is most difficult to put a stop to. Where wasps are becoming troublesome, their nests should be searched for and destroyed by pouring into the hole leading to them a little paraffin, gas-tar, or turpentine, and stopping up with clay. A great number of these pests may also be taken in wide-mouth bottles or jars partly filled with beer, or a mixture of sugar, water, and vinegar. An attack upon a hive may be checked if strips of cloth saturated with carbolic-acid be tacked round the entrance. As a strong colony of Bees will do much more work in a given time than two or three weak ones, it is advisable to unite weak stocks or join them to their stronger neighbours; a large cluster of Bees are able to maintain the necessary degree of warmth during the winter better than when divided into two, and the consumption of food is less. Stocks in bar-frame hives can be united by first gradually bringing their hives together by moving them 2 feet to 3 feet every day. When close side by side they should have their roofs and quilts removed and a few puffs of smoke blown between the combs to quiet the Bees. The combs, with the adhering Bees, should then be removed from one hive and placed in the other; if there are more combs than one hive can contain, those containing brood should be placed near the centre, and the hive filled up with frames of sealed honey, reserving any spare honey-combs for use next season in starting new colonies and so forth. After giving another good smoking the coverings may be put on the tops of the frames and the roof replaced. The Bees, being of the same scent, will unite peacefully. As needy colonies take a good time to fill combs for themselves, when fed they may be materially assisted if strong stocks be made use of in filling combs for them. If frames of empty comb are placed in the centre of strong colonies, and feeding liberally performed, the combs will soon be filled and sealed, when they can be removed and given to stocks needing help. In preparing stocks of Bees for wintering, the main points to be observed are a prolific queen, abundance of sealed stores, a large number of young Bees, and sufficient ventilation in the hive without draught.

S. S. G.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are requir d in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2013—**A fine Lilium auratum** (*J. Wilson*).—Certainly an excellent specimen, showing careful culture.

2014—**Scabious with yellow flowers** (*W.C.B.*).—By this no doubt you mean Cephalaria tatarica.

2015—**Dahlias with bad centres** (*X. Y. Z.*).—We should not propagate from the plants.

2016—**Herbaceous plants for exhibition** (*G. Bowie*).—We cannot answer your question until we know the season when you desire the plants in bloom.

2017—**Mistletoe** (*E. R.*).—We know of no book on the subject, but the number of Gardening, Dec. 19, 1896, p. 598, will help you considerably.

2018—**"Geraniums" in cold-frame** (*H. C. W.*).—These cannot survive in a cold-frame. Frost will quickly settle them. Protection from frost is essential.

2019—**Grease mixture for fruit-trees** (*Mona*).—Kindly see our notes upon the subject under "Garden Pests."

2020—**Curious Dahlia** (*R. P. Bancroft*).—Certainly curious, but we have seen such a malformation before. Dahlias, especially the single varieties, are liable to sport in this way.

2021—**Fowl-manure for Strawberries** (*J. Berry*).—It would be safer to let the fowl-droppings be mixed with farmyard-manure than to attempt using it separately upon any crop.

2022—**Mouldy Grapes** (*W. S.*).—It is evident that the house is damp. Why not give gentle heat? The berries seem all right, except for the slight mould, which artificial warmth should check.

2023—**Potentillas not flowering** (*Potentilla*).—Potentillas need a fairly rich soil of a sandy nature to do them well; but as yours grow so freely they should have flowered. Cut off the suckers. They will probably flower next summer, when well established.

2024—**Curious Marigold** (*J. Duncan*).—Simply a freak of nature—a fasciated form, as shown by the thickened stems. We should think such a fasciation is not unusual in a large bed of Marigolds. The Pansy is a good one, being pretty in colour.

2025—**Stem propagation** (*Bexhill Institute*).—Upon page 698, in our issue for February 6, you will find an illustrated article upon this form of propagation. In the note referred to the subject is the India-rubber-plant. You might succeed with your Eucalyptus; but it would be quite as easy to procure young plants from seed as to reduce the height of this subject by such means.

2026—**Mildew on Rose-trees** (*An Old Gardener*).—The soil would have absolutely no effect upon mildew, which is caused and encouraged by draughts, sudden atmospheric changes, and extremes in watering. As we have already noted upon more than one occasion, these are beyond our control outdoors. Read our notes upon page 354 in the issue for Aug. 21.

2027—**Wintering Seedling Carnations** (*J. Berry*).—Your Carnations belong to the border section. By all means leave them alone until spring, giving some slight protection against hard weather and excessive wet; but if the Tree or winter-flowering section they must be lifted and stood in your cool-frame, potting them on again in March. This section is not suited for border cultivation, and you do not say which yours are.

2028—**Apples** (*W. T. F.*).—Your Apple is Cellini Pippin. Six good varieties for your ground, if you need kitchen varieties, are: Lord Grosvenor, Frogmore Prolific Potts' Seedling, Lord Derby, New Hawthornden, and Wellington. Or if you want some eating Apples, then plant Worcester Pearmain, King of the Pippins, Adam's Pearmain, and Rosemary Russet.

2029—**Charcoal** (*J. J. F.*).—When charcoal has been so long used in filters as indicated, it is doubtful whether its carbolic properties are not largely exhausted or washed out. In any case it would be well to break it up fairly small, then fork it into the soil, with or without crops, at the rate of a bushel to the rod of ground. If used in potting place some of the coarse pieces for drainage, and the dust, in small proportion, mix with the potting-soil.

2030—**Plants for hire for shop** (*Isinglass*).—Perhaps such Palms as Areca lutescens, Chamærops excelsa, Cocos Weddelliana, Kentia Belmoreana, Latania borbonica and Seaforthia elegans; also the green and variegated Aspidistras, and Aralias. Half-a-dozen Ferns can be found in Pteris tremula, Asplenium bulbiferum, Cyrtomium falcatum, Lomaria gibba, Phlebodium aureum, and the many forms of Pteris serrulata and the Araucaria excelsa would be among the most suitable subjects.

2031—**Clematis graveolens** (*Legis*).—Your plant is correctly named The flowers are small, yellowish-green, and not very freely produced. Clematis graveolens cannot be called a new plant, as it has been cultivated in this country for upwards of fifty years. The exact date of its introduction was, we believe, 1844, when seeds were sent home from the Western Himalayas by a Captain Munro. Like a good many more of the older species, it has been superseded by the large flowered hybrids raised during the last fifteen or twenty years.

2032—**Violets** (*Kildare*).—It is not at all unusual to have Violets in bloom in October. Both doubles and singles have been blooming freely for some time this side of the Channel; that grand new Violet Princess of Wales is blooming quite profusely. Your Sunflower, about 8 feet in height, is not at all a rare giant. The plants grow to a great height now, but they are hardly beautiful. Dwarfer plants are so much better when they branch well, and bloom much more freely, although the flowers may be much smaller. You shall have a reply re Seakale culture in next issue.

2033—**Potting Hyacinths and Tulips** (*W. Y. S.*).—You have treated your bulbs very well, but if they had been placed in a cool-frame outside and covered with Cocoa-nut-fibre and sand instead of ashes, it would have been a little better. You must give sufficient moisture to keep the soil so that roots can form. What you style as mildew we are inclined to think is decay of immatured bulbs. The watering would not cause mildew. We are answering both of your queries in this, and would like to see a bulb or two, when we can decide what is best to be done.

2034—**Pear-tree** (*Inquirer*).—Your Pear is Beurré Hardy. Very likely the tree you have is worked on the Pear-stock, and the roots have gone down into unsuitable soil, for Pears are most uncertain fruits when such is the case, even nice-looking fruit being hard and valueless. If worked on the Quince-stock, by which the roots are kept near the surface and in good soil, the trees make handsome pyramids, and carry good crops of excellent fruits. It may be that in your district the variety needs a wall. Pears are very erratic in that respect, some doing well in the open in one place and badly on a wall in others.

2035—**Climbers for fence** (*Mascotte*).—You could not possibly have any better subject than Roses. Choose such varieties as Marie Van Houtte, Mme. Lambard, Anna Olivier, Mme. Falcot, Mme. Hoste, Caroline Kuster, Perle des Jardins, Francisca Krüger, Innocenté Pirola, Niphetos, Edith Gifford, Maman Cochet, Medea, Rubens, and Catherine Mermet. These will give you good variety of colour, and are all exceptionally free-blooming. Plant 4 feet apart and keep them nailed back to the fence. There could not be a better position than yours for such Roses, and they would not interfere with the border so much as most other climbers.

2036—**Cannas** (*Constant Reader*).—Your Cannas will not flower this year. Withhold water gradually, and dry them off. When the tops have died down, water must be withheld altogether. The roots should then be removed to a dry shelf, or any quarter out of the reach of frost and water. In the early part of March the old soil should be shaken away and the roots placed in a gentle heat to encourage growth. Cocoa-nut-fibre is a capital material to start them in. When a little growth has been made pot them in good loam, with a little silver-sand added to keep the whole porous. The syringe should be used freely. As the plants increase in size shift into larger pots and harden off ready for transferring to the beds they are to occupy for summer blooming. Watch Gardening for further hints.

2037—**A Fowls' run** (*E. O.*).—Ground that has been a Fowls' run for several years, and now enclosed is to be broken up and planted with Potatoes, etc., would, for all ordinary cropping purposes, be amply rich in manure. Have the ground trenched 2 feet deep, well breaking the lower 12 inches and leaving it there, then throwing up the surface, also roughly, for the winter. In March or April, if the safest in your locality to plant Potatoes late, strew over the soil fresh slacked lime thickly and fork it well in, planting as you go, or later, with a dibber. Such soil should not only carry a good crop of Potatoes and Artichokes, but when the Potatoes are off might carry Winter Greens or white Turnips. Some other manure dressing should be given the following year.

2038—**Watercress** (*E. P.*).—In your garden stream, through which runs a little sewage matter, you may plant Watercress, and the plants would no doubt grow luxuriantly; but we should not advise eating them. Their chief benefit would be in better utilising the sewage matter than allowing it to waste, as fowls would enjoy the Cress. But why not cut off and divert the sewage matter, thus keeping it from fouling your stream, and preventing it becoming a nuisance? Also collecting it, so that you can utilise it among your crops? Then you would have a stream of clean water in which to grow wholesome Cress. Cress-beds, whether in those artificially made or in

streams, should be cleaned right out once a year, and then be replanted with fresh tops. In that way the plants are kept healthy, and are healthful food.

2039—**Foster Seedling Grape** (*Stalbans*).—It is very evident by the way your Foster's Seedling Vine produces aërial or adventitious roots that the proper roots are far from being happy. It is an almost assured evidence of the fact that the proper roots are in unsuitable soil. That being so, your best course would be to open the border, which you say is outside. Remove the top soil carefully, then lift with the greatest care every possible root. Tie them up in a bag. Then excavate the lower soil to a farther depth of 12 inches. Replace with some brick or lime rubbish 3 inches; on that some rough, turfy loam. Then add fresh soil and replant, adding fresh soil over the roots. Mix with the new soil some wood-ashes and a small quantity of crushed bones. Your Vine will then soon improve. Evidently, you very much overcrop.

2040—**Enclosing garden** (*Prague*).—Corrugated iron sheets, about 5 feet to 6 feet in height, fixed to posts, and a couple of rails between each post, will make you a capital shelter-fence. Let the posts and rails be on the inner or garden side. Then you can either fix strips of wood or strain stout wires at 9 inches apart, from top to bottom and from post to post. You would then have a capital trellis to which to train Tomatoes, Pears, Plums, Apples, or even Peaches, if you wished. Your wires would be not much more than 4 inches from the iron sheeting. If you wished for flowers, then Climbing Roses might be trained up the wires, or Everlasting Peas, or Sweet Peas, Canary Creeper, Cobæa scandens, Wistaria sinensis, or anything which runs tall, or needed a warm position to induce the best growth and results.

2041—**Walnut-trees** (*Plague*).—The relative values of Walnut-trees, large and tall, depends first upon their average cropping qualities, as to which you may learn something by local inquiry; and, second, on the market that can be found for the nuts when there are crops. The usual rule is to sell the crops to some dealer on the trees, who thrashes the nuts down and carts them away. Really it would be utterly impossible for anyone unacquainted with the trees to furnish any useful reply. An expert can, on seeing a tree in full crop, soon decide how many bushels there may be, and the average value is thus ascertained. Then so much depends on the frequency with which the trees may crop. Ordinarily, three good crops in five years is very good. It will thus be seen that it is practically impossible for us to furnish you with any reliable information.

2042—**Tomatoes** (*Reader*).—You ask for the names of the two best Tomatoes. Really there are no best where all are good. Practically three-fourths of the so-called varieties grown are identical, because all come from the same stock, and in every case have been selected from the best plants and fruits. The two varieties you mention are purely local terms for others much more widely known in commerce. Much depends on the type you want. If you want a good Apple-shaped red fruit, then you will find Sutton's A1, Challenger, Regina, and All Good all very much alike to give you as good as exists. If you want flatter and broader round reds, then you will find first-rate fruiters in Conference or Duke of York, though many others under other names are good also. As to flavour, the very best we have tasted is Golden Nugget, fruit rather small, oval, and yellow, and produced in great abundance.

2043—**Winter Parsley** (*Practical*).—To have an ample supply of Parsley during the winter a sowing should be made during May or early in June on a border facing south, and the bed to be of such dimensions that it can be enclosed with a rough framework, on which large frame-lights are laid so soon as the weather becomes severe; or if the plants in the seed-bed be well thinned during the summer, they may be lifted in November or even now, be put singly into good-sized pots or blocked into boxes, gently watered, and shaded for a few days, then put into a frame or greenhouse for the winter, unless the winter be mild, and then Parsley is all right outdoors. No growth will be made in a frame or greenhouse during hard weather unless some heat be given. Of course, seed sown in boxes or pans in August and taken under glass in November would give green Parsley for flavouring, but not for garnishing.

2044—**Vegetables for exhibition** (*Show*).—A selection of good vegetables from a larger number mentioned may be rather misleading, should it teach the use of an inferior sample of one kind, in preference to a good example of another. A good six, assuming that the vegetables were equally good, for November, would be Cauliflowers, Carrots, Onions, Celery, Brussels Sprouts, and Turnips. These we regard as being most in season, and of most average winter value to all the others, though they include Tomatoes, Leeks, Mushrooms, Beets and Savoy Cabbages. Some judges, unfortunately, without considering how much things may be out of season, will place considerable importance on Tomatoes then, but how rarely do we find them really good then. Still, if you have fine, handsome, well-coloured fruits, that are perfectly sound, they give colour and catch the eyes of judges.

2045—**Old fruit-trees** (*M. M. A.*)—In seeking to renovate old Apple, Pear, and Plum-trees very probably the first course to take is to get into the heads with a saw and thin out all gross or decaying branches so as to let in light and air, which are probably needed. Then scrape and scrub the stems to remove as much of the Moss with which they are infested as you well can. But to thoroughly cleanse small roots, as well as branches, it is well next to get into the trees when partially damp with a ladder, and give all the heads and stems a good dense dusting with fresh slacked lime. That will soon kill the Moss and cause it to fall. You may, all the same, give the stems and main branches a dressing of lime and soot, in which is mixed a little clay to give it body. Then well cleanse the soil about the roots, and give about each tree a liberal dressing of manure. Do all this the moment leaves have fallen.

2046—**Club in Cabbages** (*W. J.*).—Clubbing in Cabbages is chiefly caused first by a little fly depositing its egg in the stem of the young plants, usually whilst in the new bed, the egg presently germinating and producing a small maggot that eats out the pith of the stem, and thus causes the development of a swelling that checks growth. This attack is always helped by hot, dry weather, as the plants cannot sustain the evaporation from the leafage caused by hot sunshine. The second cause is a fungus in the soil, which produces a slimy decomposition of the roots. A free application of fresh lime is good, and especially a dressing at the rate of 2 bushels of gas-lime to 8 rods of ground, applied now, allowed to lie six weeks, then well strewn and dug in some time before cropping. In the case of seedling plants free dustings of soot in the bed whilst they are damp helps to keep the fly away. The trouble is always less in good growing weather.

2047—**Destroying worm in pots** (*M. S. V. P.*).—We are surprised to learn that you cannot obtain soot, as the sweepings from the kitchen flue or lower chimneys collected once a week, and put into a coarse canvas bag, and then soaked in a pan or bucket of water, would give you what you desire. A watering of your pot plants with this solution once a week would no doubt soon settle the worms. A good knob of fresh lime placed in a pail with water enough added to thoroughly slack it, then the pail filled with water and well stirred two or three times, letting the undissolved lime fall to the bottom, leaving the water clear, before using, would also be efficacious. Charcoal is hardly likely to destroy worms. Where worms have been working in pots, even when destroyed, they leave the soil very open and porous. It is as well by pressing in here and there a pointed stick or skewer, adding some fine soil, to endeavour to render the soil more solid.

2048—**Figs** (*G. P. S.*).—Your Fig is evidently the Brunswick, judging from the outline presented. The crop now on the tree inside will not mature, even with great heat, as it is too late. Your pruning is all right, as the Fig fruits on the previous year's shoots; but there must be, all the same, considerable thinning that these be not overcrowded. If you could give your tree some artificial warmth early in the season you should get ripe fruits much earlier. Very likely your trees have too much root-run, and this creates coarse growth. We find no Figs fruit so freely as those which are grown in large pots or tubs. Possibly you would find benefit if you could open a trench round the Fig and cut off some of the roots. Whenever these find themselves restricted and can be fed by having a mulch of manure given on the surface, then they usually fruit well. In well-heated houses Figs crop for several months, more or less.

2049—**Vines in greenhouse** (*G. P. S.*)—As your Black Hamburgh Vines do very well in your small house, it seems as if it would be better for you to fill the place now occupied with the unsatisfactory Lady Downes with a fresh rod or two of the former. Lady Downes is not always a satisfactory Grape, and under some conditions sets badly, probably needing just at the flowering time more warmth than the Hamburgh needs, as that is a free setter. You do not say how long your two-year rod is; but to allow it to carry twenty bunches is out of all proportion when one half would be a fair quantity. We should advise you to plant Black Alicante, a fairly good Grape, in place of Lady Downes, adding fresh soil to the border first if you wish to have a good late Grape. Where setting bloom is irregular, occasional taping the rods, or, better still, tying a couple or so of rabbits' tails, quite dry, to a stick, and touching the flowers a few days in succession with the fur, helps to set the bloom by distributing pollen.

2050—**Late standard Apples** (*Essex*).—Undoubtedly Bramley's Seedling and New Northern Greening are fine late varieties, but neither are as standards very early fruiters, the trees usually needing to get well established before they fruit freely. We should, where it does well, prefer the Wellington to either, but Annie Elizabeth, whilst a good late Apple, is not always a reliable cropper; indeed, as a rule, it is a moderate one. Lord Derby, Alfriston, and Lane's Prince Albert are three of our finest fairly late varieties, and Mère de Ménage is another. Bramley's Seedling likes a rather stiff, retentive soil. If you can get Prince Albert as standards, and it is a nice bearer and not a rank grower, our selection of three for your particular purpose would be that variety, Wellington, and Bramley's. With one hundred trees, however, we should have six varieties, and include Lord Derby, Mère de Ménage, and New Northern Greening.

2051—**Wood-ashes** (*Argus*).—Your conclusion that in a heap of wood-ashes the heavier portion would naturally fall to the bottom is, of course, correct, but it must not be forgotten that whilst combustion near the ground is slower, that on the outer margin of the fire, especially because the air is being consumed also, is much greater, hence the outer particles are the lightest. However, before applying, the entire heap should be well mixed. Such others constitute a valuable potash manure, and are most helpful to all description of garden crops needing potash, such as vegetables and fruits. With Potatoes, for instance, a dressing strewn in with the sets in planting, or with root or Pea, Bean, or other seeds, well strewn over the ground and covered in at sowing season, or strewn thickly over the roots of fruit-trees now and forked in, etc.; but having so great a quantity, do not use it all at once. Let some be stored and used moderately with other crops as suggested.

2052—**Fruit-trees** (*Nemo*).—In asking for selection of Apples and Pears to plant on a stiff soil with gravel base it may be assumed that fairly strong growers are desired. In all such cases the Apple-stock must be of the Crab. If the trees were to be of the bush form, then the broad-leaf Paradise-stock might be used with advantage to check strong growth. A good selection of fifteen Apples would be:—Of dessert varieties: Irish Peach, Worcester Pearmain, King of the Pippins, Cox's Orange Pippin, and Sturmer Pippin. And of cooking Apples: Lord Grosvenor, Potts' Seedling, Cox's Pomona, Frogmore Prolific, Blenheim Pippin, Mère de Ménage, Lord Derby, Newton Wonder, Bramley's Seedling, and New Northern Greening, thus giving a long succession. Good standard Pears are: Autumn Bergamot, Williams' Bon Chrétien, Souvenir du Congrès, Louise Bonne of Jersey, Beurré Diel, Beurré Clairgeau, Noveau Poiteau, Alexandre Lambre, and the baking Pear Catillac. Six Plums are: Belgian Purple and Greengage for eating, Rivers' Prolific, Czar, Victoria, and Monarch, cooking. Six Cherries for standards are: May Duke, Kent Bigarreau, Elton, Black Eagle, and Archduke, eating, and Morello for cooking.

2053—**Vines** (*A. Reed*).—That the roots of your Vines are far too deep is evident, and in soaking them with coarse liquid from piggeries you have made their condition worse. It is evident that only entirely lifting the roots by removing all the top soil, gathering every root up, and tying them up out of the way whilst you forked up the bottom, broke it well, and added to it a quantity of old mortar-refuse, well mixed, will success come. Also add more fresh soil, so as to bring the roots, when relaid, much nearer the surface—indeed, they should be but 6 inches buried. Add to your top-soil some wood-ashes and very finely-crushed bones, at the rate of a barrow-load of ash and a bushel of bone to the cartload of soil. You may commence to lift the roots the moment you have cut the fruit, without waiting for the leaves to fall; the sooner done the better. You should keep the house damp. If mildew appears again, sprinkle flowers of sulphur over the leaves, or, better still, if you have pipes in the house, make up a good fire, then get some milk, mix sulphur with it thoroughly, though sulphur-paste is best, and give the pipes a good washing, then shut the house up close. Do this two or three times now, then again next year if mildew appears.

2054—**Gladiolus in winter.**—I have bought some hardy Gladioli from a well-known florist, which he said could stop all winter in the ground. Do you recommend such a proceeding? Do you think any Gladioli can be improved by being in the ground all winter?—H. R. M.

*** *Some Gladioli are hardier than others, and probably yours are of that character. If the man who sold them to you said that they could be trusted in the open we should try them, but, as a rule, Gladioli are not very hardy.*

2055—**Flowering Oleanders.**—Can you inform me how large Oleanders are induced to flower so abundantly in quite small pots and tubs, as one sees everywhere abroad? Aged Oranges also bear flowers and fruit in comparatively small wooden boxes. I observe that these boxes have removable sides.—Traveller.

*** *The chief reason is to be found in the greater amount of sun-heat that plants get abroad. Oleanders flower abundantly in this country when they receive proper treatment. Oranges, though not cultivated very largely here, do flower and fruit freely where root-room is restricted. Maiden loam is the finest soil for planting Orange-trees in. The size of the pots or tubs they are to be grown in must be regulated according to the variety, size, vigour, and general condition of the trees. Roots should be disturbed as little as possible.*

2056—**Mina lobata.**—I planted this in May from a seed, and it is now 12 feet to 14 feet high, and has begun to flower. I have never had it before, and shall be glad to know whether it will die down to the ground or whether the stems will live and throw out again in the spring? It is very handsome, both in foliage and flowers, the latter bright crimson.—M. O. R. H.

*** *This is a hardy annual, closely allied to Ipomœa. The growth made this season will therefore die. Sow seeds again in spring.*

2057—**Castor-oil-plant in winter.**—Kindly tell me what to do to save some Ricinus Gibsoni in pots for winter decoration? I grew them outdoors in the beds, and they are very fine and bushy. Please also tell me how to use London Pride as an edging to beds in a flower-garden? What would it do best for the summer bedding out? I wish to leave it permanently.—Acanthus.

*** *Ricinus Gibsoni is a half hardy annual. We are afraid you will not be able to keep it in a presentable condition through the winter. If you decide to try it, lift the plants with good balls of earth, taking care not to damage the roots. When potted, sprinkle overhead with a fine rose water-pot. To have plants for winter decoration, seeds ought to have been sown in summer and the plants kept in cold-frames. London Pride would make a nice edging to beds planted in summer with plants whose height varies from, say, a foot. It would look well against such things as Antirrhinums, Fuchsias (dwarf vars.), Heliotrope, Cassia corymbosa, Petunias, "Geraniums," Calceolarias, etc.*

2058—**Water for plants.**—Is it injurious to give plants water that has been at nearly boiling point after the water has got cold again?—W. H. E.

*** *This would not injure the plants in any way.*

2059—**Lilies under trees.**—"D. M. A" would be much obliged if the Editor of Gardening would kindly give a list of the ordinary cheaper kinds of Lilies that would do well in a very shaded border under trees among shrubs. Would Tiger or Turk's-cap Lilies do well, and what others?

*** *Yes, the Tiger and Turk's-cap Lilies would succeed in a shady border. So, also, would under-mentioned cheap sorts: Thunbergianum vars., the colours of which vary from soft yellow to orange, red, and crimson. The Canadian Lily (L. canadense flavum) is also well worth planting; its yellow flowers are heavily spotted with black. L. Batemanni is a lovely variety, with rich apricot-yellow flowers. The common white-flowered form of L. candidum is well known and very useful. L. croceum is an early and very free bloomer. L. umbellatum is another easily grown variety.*

2060—**Carnations for beds.**—In your reply to Question 1818, of your issue October 2nd, you mention the names of certain Carnations—La Neige, Winter Cheer, etc.—for winter growth in greenhouse. Are these hardy enough to plant out with the ordinary bedding Carnations in the spring?—Don.

*** *No; the class of Carnations mentioned belong to the Tree or winter-blooming section; those in the open are called border varieties. One flowers during late autumn and winter, while the other blooms during July and August and the early part of September.*

2061—**Coke-stove in conservatory.**—Would a slow combustion coke-stove, with a funnel to carry off the fumes, be injurious to the plants if placed inside a conservatory?—Nauticus.

*** *Such a stove would not be an ideal one by any means. You would still have the dry and parching heat so injurious to plants, and which simply bakes the atmosphere. There are several really little serviceable stoves for hot water advertised in our columns, and which are quite as cheap as a slow combustion coke-stove.*

NAMES OF PLANTS AND FRUITS.

**** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Miss Walton.*—Probably a Thalictrum, but impossible to tell from the single leaf sent.——*A Constant Reader.*—The specimen received is a frond of Aspidium falcinellum. Although a native of Madeira it is quite hardy in some parts of England and of Wales, and may also be in your district, especially if in a sheltered position.——*N. A. T.*—The Fern is evidently the Bird's-nest Fern; the hardy plant is Erigeron speciosus, and the other plant Ophiopogon Jaburan variegatum.——*D. Drummond.*—1, Athyrium Filix-fœmina (Lady Fern); 2, A. F.-f. glomerata; 3, Lastrea Filix-mas polydactyla; 4, Athyrium F.-f. laceratum furcans; 6 and 7, Please send fertile fronds; 8, Polystichum aculeatum lobatum; The pinkish flower is the double Soapwort (Saponaria officinalis fl.-pl.).——*Romford Girl.*—1, Thalictrum minus; 2, Probably a Corydalis, but one must have flowers to make certain of the name; 3, Ophiopogon Jaburan variegatum; 4, A Mesembryanthemum, but kindly send flower; 5, Sempervivum sp. (will do on a rock garden); 6, Sempervivum arboreum variegatum.——*G. A.*—It is not so easy to name Asters. 1, Certainly not the plant you mention, but probably Silphium perfoliatum; the flower had, however, faded considerably; 2, Moon Daisy (Pyrethrum uliginosum) 3, A. Amellus; 4, A. Novæ-Angliæ roseus (Rosy New England Starwort); 5, A. horizontalis; the other is probably a seedling.——*W. C. K.*—1, Spiræa Douglasi; 2, Pentstemon diffusus; 3, Moon Daisy (Pyrethrum uliginosum): 4, Hardy Chrysanthemum Little Bob.——*K. M.*—Salvia Horminum.——*Hills.*—Rose Safrano.——*E. E.*—1, Physianthus albens; 2, Panicum variegatum; 3, Anthericum variegatum; 4, Centranthus ruber (Red Valerian); 5, Hieracium aurantiacum; 6, Ophiopogon Jaburan variegatum.——*A. H.*—2, Polystichum angulare (Soft Prickly Shield Fern); 6, Woodwardia radicans.——*Hillmount.*—1, Melanie Willermoz; 2, Belle Lyonnaise. Instead of growing these two under glass, try Rubens and Medea; they are much the same colour and far more suited for that purpose.——*E. Jervoise.*—There are so many Pansies that to name one from a single flower is impossible.——*S. K. W.*—Japan Knotweed (Polygonum cuspidatum).——*J. Champion.*—Alonsoa incisifolia.——*S. M.*—Veronica Andersoni.——*E. L.*—1, Aster Novæ-Angliæ roseus (Rosy New England Starwort); 2, Sedum spectabile; 3, Campanula Portenschlagiana; 4, Veronica prostrata; 5, Helianthus decapetalus.

Names of fruits.—*R. Hobby.*—Pears: 1, Vicar of Winkfield; 2, Seckle; 3, Not recognised; 4, Passe Colmar; 5, Beurré Bosc; 6, Swan's-egg.——*A. H.*—1, Ecklinville Seedling; 2, Hoary Morning; 3, Alfriston; 4, Some poor local kind; 5, Royal Russet; 6, Dutch Codlin; 7, A poor-flowered local or cider Apple; 8, evidently a local variety. Plants are named under proper heading.——*A. M. Sharp.*—Rymer.——*W. Clarke.*—You have sent too many kinds. Four is the limit. We name the following, the others are local, some cider kinds: 1, Margil; 2, Ecklinville Seedling; 3, Tom Putt; 4, Blenheim Orange; 5, Yorkshire Beauty; 6, Hollandbury; 7, Crimson Queening; 10, Lord Suffield.——*C. J Dodd.*—The fruit is evidently a rather poor specimen of Marie Louise.——*F. C. G.*—Cox's Orange Pippin Apple.——*L. G.*—Beurré Bachelier.——*E. M. Savage.*—A, Vicar of Winkfield; C, Marie Louise (poor specimen); D, Autumn Bergamot; E, Brown Beurré; F, Probably Passe Colmar, but very poor fruit; G, Seckle.——*S R. H. G.*—1 and 2, King of the Pippins; 3 and 7, Northern Greening; 4, Golden Pippin; 5, too much out of character; 6, Small fruit of Ashmead's Kernel; 8, Ribston Pippin. Your specimens were very poor.

LAW.

The law of boundary fencing.—The fence between my garden and my neighbour's grass field belongs to me, and his cattle have reached over the fence and destroyed trees and plants as far as they can reach. Is he liable for the damages they have done?—W. A.

*** If you are bound to maintain a fence against the stock in your neighbour's field, he is not responsible in damages, and your only remedy is to increase the height of your fence. But it does not follow that because a man has erected a fence he is bound to maintain it against stock on the adjoining lands. The common law rule is that every person must keep his own stock from straying, and that if he neglects so to do and the stock do stray, he is answerable for any damage done. But to this rule there are numerous exceptions, for a man may be bound by express contract or covenant, or by prescription, or by the award of enclosure commissioners, to maintain a fence against his neighbour's stock; and if, being so bound, he neglects his obligation, and the stock stray and do damage to his property, he can recover no damages, while if the stock are injured he is responsible in damages to their owner. It is quite possible that by some stipulation made when the land now comprised in your garden was parted from the land occupied by your neighbour, your predecessors became bound to maintain a fence against the stock in the field, and if such be the case it is your business to maintain the fence, and the occupier of the field is not liable. Further, if no such arrangement was made, but the builder of the house more than twenty years ago made the garden fence, and it has since been repaired by the occupiers or owners of the garden, there has arisen what is termed a prescriptive obligation on your part to maintain the fence, and that obligation is, and will continue to be, binding upon you.

Removal of Rose-trees.—Owing to the death of my father, my people are leaving their country house, where they have lived for the last forty years. They have a large quantity of Rose-trees, occupying two very large beds, which have been there, with renewals, ever since I can remember. Can I remove any of these I may require to my own garden, and may I sell by auction or dispose of at a valuation those I do not require?—Don.

*** The Rose-trees are in law the property of the landlord, and you cannot remove any without his permission, neither can you sell them nor claim any valuation for them.

Notice to determine tenancy.—Ten years ago I took a house and garden on a verbal agreement at the rent of £6 10s, with the option of paying the rent half-yearly, monthly, or quarterly. I paid monthly until December, 1895, when the rent was lowered to £6 a year, and a rent-book was given me which contained the following entry: "D. E. in agreement with W. B. Rent of cottage £6 per year, to pay 10s. per month." The place is now sold. What notice must I give to quit? And to what notice am I entitled?—D. E.

*** The place being let to you at a yearly rent (although paid monthly), and there being no stipulation as to notice to quit, you are a yearly tenant and are entitled to half a year's notice, the notice to expire within a year of tenancy, that is at the same time of the year as the tenancy began. The entry in the rent-book, if made by the landlord or his agent, is conclusive evidence of the nature of the tenancy—that is, of the tenancy being yearly.—K. C. T.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Pickling Cucumbers and Cauliflowers.—Will you kindly tell me through your paper how to pickle separately Cucumbers and Cauliflowers?—Pickle.

*** Look over the Cauliflowers, but do not wash them. Break them into nice pieces of bunches of flowerets, not larger than a five-shilling piece. Have ready the boiling vinegar, and your Cauliflowers must be as fresh and crisp as possible. To each quart of vinegar allow six Red Chillies, a teaspoonful of Celery-seed, a dozen Peppercorns, a stick of bruised Ginger, and a teaspoonful of salt. Let the spices boil in the vinegar for a quarter-of-an-hour. Have your Cauliflowers ready in the jars, which must be as dry as possible. Pour the quite boiling vinegar over the Cauliflower, leaving some of the spices in each jar. Cover when cool with wet bladder. See, before covering, that the Cauliflower is well covered with the vinegar; if not, fill up with cold boiled vinegar. Keep in a dark, dry place.—B.

Tomato jam (*L. R.*).—Stem 1 lb. Tomatoes and put them into a boiling syrup (made with 1 lb. of white sugar to 1 pint of water, the thin rind of a Lemon, a stick of bruised Ginger, two sticks of Cinnamon, and a few Cloves, tied in a piece of muslin). Stir while boiling until a little dropped on a plate jellies. Pour into hot gallipots or glass bottles, cover while hot, and store in a cool, dry place.—B.

Pickling unripe Tomatoes (*L. R.*).—Tomatoes that will not ripen are best made into either jam or chutney. To make chutney, take out the stems of 3 lb. Tomatoes, and put them into 1 quart of boiling vinegar, with a stick of bruised Ginger, and a dozen each of Cloves, Allspice, and Chillies. All the spices and the dozen Peppercorns to be tied in a piece of muslin and taken out before bottling the chutney. Use also 1 lb. of sultanas, 1 lb. of brown sugar, and the same weight of pared and cored sour Apples. Let all these boil quite three-quarters of an hour until as thick as jam. Put into hot glass pickle bottles when cold, cover with wet bladder, and it is ready for use at once.—B.

Making sweets with Walnuts.—"Mrs. L." would be obliged by a recipe for making sweets with Walnuts? She has a quantity of Walnuts, and does not care for pickled Walnuts, so would like to know if there is any way of making them into sweets for dessert?

*** After cracking the Walnuts and keeping the nuts quite whole in the halves, pour boiling water over them. Carefully take off the skins. Melt a pound of barley-sugar or sugar-candy in a clean copper pan, with the juice and grated rind of a Lemon. This melting must be done over a cool stove, as it burns very easily and becomes a dark colour if in the least burnt. As soon as this comes to the boil with little bubbles on top take each piece of Walnut on a silver fork and dip it into the boiling syrup. Hold it in for at least two minutes, or, better still, if you have a basting-spoon with holes in, this can be filled with the Walnuts and immersed in the syrup for five minutes. Drain on a sieve. Immerse them a second time in the syrup; drain them, letting them remain for some hours, until quite dry and glossy, then pack them in oil-paper in tin boxes. They must be kept quite air-tight to keep them crisp. Walnuts can also be made into a sweet like Almond-rock, so that all the broken pieces can be used up in this way. Boil a pound of sugar in a pint of water, with the juice of a Lemon, until you can draw it out in threads. Then put in the broken-up Walnuts, let it boil up, give it a stir gently, and pour on to well-buttered tins until set.—B.

BIRDS.

Treatment of Night-Hawk (*A Lover of Pets*).—You cannot do better than to continue to feed the bird on the food you mention, adding a mouse or small bird now and then as a special treat. Probably the reason of its not picking for itself is that you are feeding it too liberally. Let it fast for a time, and it will soon learn to feed itself. You will find it take food better in the dusk of the evening and in early morning than during the bright hours of the day. Keep it in a large cage out-of-doors, excepting during the most severe weather in winter. Give it plenty of fresh drinking-water, and keep the bottom of the cage well sanded. The cleaning out of the cage must be often performed, or it will soon become offensive, the bird being a gross feeder.

Death of Cockatiel (*Mrs. Nancy Lidington*).—The fine male Cockatiel sent for examination had been suffering from inflammation of the lungs, but the immediate cause of death was, apparently, rupture of the heart, which, of course, would also account for the sudden manner of its death. This is a rare case; your bird had, probably, been alarmed. Inflammation of the lungs is, however, one of the most frequent complaints to which cage-birds are subject, especially in spring and autumn, although those living in an out-door aviary are not so subject to this complaint as those kept in the house, where chill is often caught through draught from a window—the worst place possible in which to keep a cage-bird—though often brought about through a chill after bathing. The only remedy in inflammation of the lungs is continuous moist warmth (from 80 to 90 degs. Fah.) night and day, but to do any good it must be had recourse to before the complaint has taken a strong hold on the system; as the symptoms subside, the temperature would be gradually lowered. Cockatiels are quite hardy, and will breed freely in an outdoor aviary, rearing three or four broods during the season—from May to October. From the contents of the crop of your bird you appear to feed too exclusively on Millet. You would find boiled Maize and white Oats very suitable food, adding Canary-seed and Millet in small quantities. A little bread may also be given now and then.

The People's Palace Chrysanthemum show.—I shall be glad if any readers of your paper will kindly send exhibits of Chrysanthemums to our next show on November 11th, 12th, and 13th. Our society, numbering about five hundred members, consists mostly of working men, who would be delighted to see blooms from those living in more congenial districts than the East-end.—C. E. Osborn, Hon. Sec., *Mile End-road, London.*

GARDENING ILLUSTRATED.

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ROSES.

SINGLE ROSES.

None who have grown these, or seen the splendid stands at the exhibitions of the National Rose Society, can fail to admire them, although they are, unfortunately, so evanescent. This defect is compensated for by the immense trusses of buds and rapidity with which fresh flowers follow those which fall. I do not propose naming many varieties, but to content myself with a brief description of some of the very best. The Hybrid Sweet Briers give us several, but as these have already been noted, I will merely say that Meg Merrilees, Rose Brawardine, Annie of Gierstein, Lord and Lady Penzance, and Catherine Seyton, are about the best of the single forms from this section. Rosa moschata nivea is the old Musk Rose, and has been grown in England for about 300 years. It is a strong climber, very hardy, makes a capital fence, and flowers in immense clusters, often thirty or more upon one truss, and perhaps six to ten of these open at the same time. The flowers are large, generally pure white, but sometimes suffused with soft rose, and the young foliage has a distinct perfume of musk.

Paul's Single White is somewhat after the same style as regards size and habit, but is none the less distinct. But Paul's Single Crimson is not a rampant grower. If we want a strong grower of this colour we must look to Paul's Carmine Pillar, a most showy Rose, and one that is sure to please. Rosa Brunonis is another variety of the Musk Rose, pure white, with very showy golden anthers. The foliage of this is very handsome. The Bramble Rose (Rosa polyantha) will climb a dead tree-stump, fill in a thin hedge, or hide a large building in a very short time. The individual flowers are small, but borne in immense pyramidal trusses, while the scent is very sweet. A variety called grandiflora has much larger flowers without losing any of the vigour, scent, and free-flowering qualities of the type.

The Rugosa or Japanese Roses are now well known, but a newer variety named Calocarpa is also very good. This produces an immense amount of bloom, and trusses of small hips ranging from twenty to forty in a bunch. Its foliage is also beautifully coloured with golden-yellow, orange and crimson towards autumn, and retained much longer than the other varieties. The beautiful rich pinks and large deep crimsons of Rosa indica must not be mixed. They are thoroughly perpetual, a point in which too many of our singles are deficient. Rosa macrantha, R. alpina, the Yellow and Copper Austrian Briers, the Macartney Rose, Hebe's Lip, Lucida, Rosa Pissardi, and Rosa pomifera are all good singles, and deserve far more extensive culture than they generally receive. P. U.

Mme. Lambard Tea Rose.—I wish to plant a round bed, 6 feet diameter, with Mme. Lambard Tea Roses to bloom pegged down. How many must I get? And should I do anything to the long shoots now when planting or next spring? I want them to completely cover the bed. Should I get climbing or dwarf trees for this?—D.

*** There is no climbing form of Mme. Lambard, but it makes a capital bedder when the strongest shoots are pegged down. Prune rather closely this coming spring, and peg down the following year. You will need six plants—one in the centre, and the remaining five planted 3 feet apart, 1 foot from the edge of your bed. Purchase dwarfs from the Brier-stock.

ROSES—SELECTIONS FOR VARIOUS PURPOSES.

A short time back, and in answer to several querists, we promised to give a brief list of Roses we have found most suitable for different purposes. As we shall very soon be moving Roses, the time seems a good one for redeeming our promise. We do not say that the dozen or so of varieties we name are all of those suited for different positions and purposes, but that they are among the very best for such. Our object is merely to name a few of the very best varieties, quite independently of any class or section to which they may belong, and to give a good variety of colour.

Twelve Roses for pots.—General Jacqueminot, La France, Marjorie, Mrs. W. J. Grant, Spenser, Anna Ollivier, Catherine Mermet, Niphetos, Françisca Krüger, G. Nabonnand, Jean Ducher, and Perle des Jardins.

Twelve climbers for the open.—Maréchal Niel, Yellow Banksian, Climbing Niphetos, W. A. Richardson, Mlle. Germaine Trochon, and Waltham Climber No. 3 for warm positions. Emily Dupuy, Mme. Berard, Félicité-Perpetué, Mme. Carrière, and Reine Marie Henriette for cold and exposed places.

Twelve climbers for under glass, but the first six are by far the best.—Maréchal Niel, Climbing Niphetos, W. Allen Richardson, Lamarque, Henriette de Beauveau, Crimson Rambler, Reine Marie Henriette, Mme. Eugène Verdier, l'Ideale, Climbing La France, Solfaterre, and Josephine Violett.

Six for arches and arbours.—Aimée Vibert, Polyantha grandiflora, Longworth Rambler, Reine Olga de Wurtemburg, Gracilis, and Amandis.

Twelve for button-holes.—Mme. Falcot, Anna Ollivier, Homère, Crested Moss, Mrs. W. J. Grant, Princess de Sagan, W. Allen Richardson, Rubens, Niphetos, G. Nabonnand, Perle des Jardins, and Marie Van Houtte.

Six good Mosses.—Crested Moss, Blanche Moreau, Celina, Lanei, White Bath, and Mme. Edouard Ory.

Twelve suitable for standards.—Crimson Rambler, Rêve d'Or, Blairi No. 2, Claire Jacquier, Viscountess Folkestone, General Jacqueminot, Prince Camille de Rohan, Duke of Edinburgh, Kaiserin Augusta Victoria, Cheshunt Hybrid, W. Allen Richardson, and Marie Van Houtte.

Twelve for massing.—Camœns, Marjorie, Lady Mary Fitzwilliam, Souvenir de la Malmaison, Papa Gontier, Luciole, Edith Gifford, Merveille de Lyon, Gustave Piganeau, Perle des Jardins, Baroness Rothschild, and Marquis of Salisbury.

Six for pegging down.—Gloire Lyonnaise, Ulrich Brunner, Gabrielle Luizet, Prince C. de Rohan, Duke of Edinburgh, and Pink Rover.

Twelve good singles.—H. Sweet Brier, Meg Merrilees, Rose Bradwardine, Lady Penzance, and Flora McIvor, Polyantha grandiflora, Austrian Copper, Fortune's Yellow, Hebe's Lip, Carmine Pillar, Rosa alba, Rosa macrantha, and Rosa moschata alba.

Twelve good bush or dwarf Roses.—General Jacqueminot, Mrs. J. Laing, Mrs. W. J. Grant, Fisher Holmes, Mrs. R. G. Sharman Crawford, Viscountess Folkestone, Caroline Testout, G. Nabonnand, Marie Van Houtte, Augustine Guinoisseau, Mme. Lambard, and Heinrich Schultheis. This list might be multiplied many times, but the above will give a good variety, and all are very free bloomers.

Twelve of the hardiest Roses grown.—Rosa rugosa, R. rugosa alba, Rosa calocarpa, Rêve d'Or, Emily Dupuy, Viscountess Folkestone, Mme. Isaac Periere, Souvenir de la Malmaison, Françisca Krüger, Scotch Briers, and Duke of Connaught.

Twelve sweet-scented Roses.—Socrates, Viscountess Folkestone, Charles Lefebvre, General Jacqueminot, Heinrich Schultheis, La France, Catherine Mermet, Mme. de Watteville, Souvenir d'un Ami, Common Moss, and Miss Hassard.

Twelve good new Roses.—Mrs. W. J. Grant, Muriel Grahame, Helen Keller, Lawrence Allen, Tom Wood, Sylph, Mrs. Pierpoint Morgan, Climbing K. A. Victoria, Empress Alexandra of Russia, Antoine Rivoire, Crimson Rambler, and Golden Gate.

Six each of distinct colours.—*Deep yellow:* Perle des Jardins, Maréchal Niel, Comtesse de Frigneuse, Etoile de Lyon, and the well-known La Boule d'Or. *Pale yellow:* Mme. Hoste, Medea, Amazone, Marie Van Houtte, Caroline Kuster, and Mons. Furtado. *Orange and apricot:* W. A. Richardson, Mme. Falcot, Mme. Charles, Sunset, and Mme. Chauvry. *Deep crimson:* Prince C. de Rohan, Abel Carrière, Charles Lefebvre, Duke of Connaught, Reynolds Hole, and Sultan of Zanzibar. *Reds:* General Jacqueminot, Duke of Edinburgh, A. K. Williams, Captain Hayward, G. Piganeau, Cheshunt Scarlet, and Dupuy Jamain. *Pinks:* Mrs. J. Laing, Mrs. R. G. S. Crawford, Pink Rover, Gabrielle Luizet, Suzanne Marie Rodocanachi, and Catherine Mermet. *Whites:* Niphetos, Souvenir de S. A. Prince, Mme. Lacharme, Boule de Neige, Merveille de Lyon, and Edith Gifford. *Salmony-copper:* G. Nabonnand, Françisca Krüger, Comtesse de Nadaillac, Anna Ollivier, Dr. Grill, and L'Ideal.

Many will no doubt wonder why our old friend Gloire de Dijon is not included in the above lists. There are several repetitions of names already, and we can only say that this old favourite might figure in almost every selection.

Hybrid Brier Roses (*Llangollen*).—There are very few lovers of Roses who have

not seen these charming Hybrids of Roses and the Sweet Brier. We notice that you name the first set only, and would advise you to include Jeannie Deans, Edith Bellenden, and Catherine Leyton from the newer list, when you will have twelve good varieties. These Briers are among the very hardiest plants we have, and may be trained to a trellis, wall, fence, or left to grow at will. They may be pruned or not, but all wood cut away will be at the expense of blossom, and yet, unlike other strong growers, they still flower well upon the wood left, and may be had from 4 feet to 15 feet high, and as far through. We know of few more accommodating plants.

Propagating Niphetos Rose (*A. Maze*).—You will find the whole shoot far too large to root. Cut up the side growths when fairly ripe, and have a small "heel" to these where possible. But any growth severed just below an eye is a suitable cutting, and this variety roots very freely. The Rose seems doing well with you in so small a house, and, provided you water carefully, no harm should accrue from the hot-water pipe when again in use.

Rose Reve d'Or.—We have a Rose called Rêve d'Or, which was planted, I believe, two years ago, and has grown tremendously, throwing out very long shoots and covering an archway, but does not flower very much, although the few flowers we have had have been very good. Had I best cut it back? It has been very profuse in its growth both years, and now is an enormous tree, at my home in Gloucestershire. Your advice about this in your next issue would much oblige? Would you mind also saying if you can recommend a red Rose for a north wall likely to do any good?—L. Bidlake.

*** By no means prune, then you will certainly have a good show early next summer. Reine Marie Henriette is a good hardy red climber.

Selection of Roses (*Papa Cochet*).—Our correspondent suggests a short list of Roses, placed according to their habit of growth. We are fully aware of the extreme variations in this respect, but if readers would obtain the official list of the National Rose Society, or any good Rose grower's catalogue, they will find them described as very vigorous, free, and moderate or robust. We scarcely see how a long list can be give in these pages, seeing a post-card to any out of a score or more Rose growers would bring a full list of some four hundred to five hundred varieties, and not only give the habit of growth, but a full description of the flowers and prices. Our selections for various purposes come under a somewhat different head; very few lists give these in the way we have endeavoured to do. There are some dozen or more Rose growers advertising in these pages, and we would refer "Papa Cochet" and his friends to these.

*** *For remainder of replies to Roses see page 498.*

GARDEN WORK.*

Conservatory.

The Chrysanthemums will be making a good show now, but the large blooms will require careful management, especially as regards ventilation and temperature. Where there is only one house the difficulties are intensified, because the late kinds, until the buds begin to open, will be better without fire-heat. Chrysanthemums have now become so important that there ought at least to be two houses for them, so that the late sorts may be kept separate. Liquid-manure may be given freely until the blooms are nearly open, and the large blooms are much longer opening than the small ones. A large exhibition bloom will require a month from the time the colour is seen till fully expanded. This refers to Japanese blooms only, as incurves open in less time, and some of the Japanese are quicker in untwisting their petals; but the average of the biggest blooms from start to finish will not be less than a month, and it often happens that some of the late flowers have to be moved to a warm-house to finish. I would rather have it so, as the flowers are fresher when just open than if they have to be kept any time. More bulbs should be potted, and if there are any Freesias still out of the soil pot them at once, as late potted bulbs never do so well. Roman Hyacinths are charming now, and they are so useful that successional batches should be provided. This can easily be done by keeping the main stock in a cool-pit, and moving a part into a warm-house at suitable intervals. Well-grown Solanums are useful grouped with Maidenhair or some light-foliaged Ferns. They are pretty mixed with Carex japonica variegata, a light Japanese Grass. A good deal may be done with the Eulalia, especially the variegated variety of Eulalia japonica, which under good culture will make a strikingly handsome plant, 3 feet or more high. Heaths must be kept at the cool end of the house if there is a cool end. I always think hard-wooded plants should have a house to themselves, where proper treatment can be given. They are usually sorry-looking things when grown with soft-wooded plants. Mosses of various kinds make pretty groundworks and edgings.

Forcing House.

There is plenty of work for this house to do now; but it need not be worked to its greatest capacity so far as temperature is concerned just yet. Flowers will be wanted at Christmas, and the forcing-house will have to supply a large proportion of them. Lily of the Valley, Tea Roses, bulbs of various kinds, Azaleas Deutsche Perle and Fielder's White, when well established, will force easily into bloom at Christmas. Deutzia gracilis, when established in pots, will begin to move when heat is applied. Of course, it is useless to force these things if they have no previous preparation. Plants lifted from the ground will flower in March and April, brought on gently in steady heat, but will not force into bloom in January. Deutzia Lemoinei, a new variety, will make a good forcing plant; when it gets common and strong well-ripened plants can be had. Those who have only one forcing-house often bring on French Beans, Cucumbers, Strawberries, and a pot-Vine or two in the same house. This requires management; but a fair amount of success has been often obtained. I have seen all the plants named and Tomatoes grown fairly well in the same house. Watchfulness is required so as to check insects or any other evil that may crop up, and the temperature should not be more than 60 degs. at night till the days begin to lengthen.

Cucumber House.

Regulate temperature according to the required supply of fruit. Cucumbers will bear a good deal of heat; but it runs the plants out quickly. If only a limited number of fruits are required per week, 65 degs. at night will be high enough, atmospheric moisture to be supplied in proportion to the fire-heat used. There will be a considerable saving of fuel if the house can be covered in some way at night. Fresh houses may be planted with a good winter-bearing kind any time now. One of the improved forms of Telegraph is as good as any. Lockie's Perfection and Rochford's variety are a good deal grown. The two main cultural details which must not be neglected are regular stopping one leaf beyond the fruit and frequent light top-dressings of sweet turfy soil, fortified with some artificial, after the plants begin to bear.

Mushroom House.

Beds in bearing should be kept healthily moist. Use a little salt in the water; a tablespoonful or so in a gallon of water will have a stimulating effect upon the crop. Those who have no open sheds to prepare and dry the manure as it comes from the stable may, by mixing from a fourth to a sixth part of loam with the manure, according to its freshness, shorten the period of waiting several days. Mushroom-growing is not looked upon as an absolute certainty, though if the spawn is good and the manure from the right source there ought to be no failures. But there will, I suppose, be failures to chronicle so long as people are careless about the manure and the spawn. Temperature during winter, 55 degs.

Alpine Plants and Hardy Ferns in Pots

should be plunged up to the rim in cold-frame to keep the sap for the winter, and very little water will be required.

Window Gardening.

A good deal may be done with bulbs. All the hardy bulbs may be grown in pots to flower in a light room, but should be potted at once, and plunged over the tops in ashes or fibre outside to make roots.

Outdoor Garden.

Get on with the bulb planting. No garden is well planted without bulbs in variety, especially Snowdrops and Daffodils. Crocuses are sometimes disappointing in the town and suburban gardens, as the sparrows pull the flowers to pieces, especially the yellow varieties; and then the Crocus requires to be in the sunshine to fully expand its flowers, but the Snowdrop and Daffodil remain open in all weathers. Though bulbs are cheap, a good deal of money can be spent on a bulb garden. The best depth for bulbs is from 3 inches to 4 inches for Daffodils, Tulips, English Iris, and Hyacinths. Small bulbs, such as Crocus, Snowdrops, Aconites, Squills, and Anemones need not be covered more than 1½ inches. Plant Aconites in broad masses—they will grow under trees—Daffodils in good-sized clumps, and Snowdrops should have some breadth to make some show. Tulips should be planted in masses of one colour, the larger the mass the better. The Golden Amaryllis (Sternbergia) is one of the brightest things in the garden. To make a feature of it, buy a hundred bulbs or so (it is not expensive) early next spring, and plant them in a mass on the rockery, covering from 2 inches to 3 inches deep, and 2 inches apart. Herbaceous plants will go on well now. One must be guided somewhat by the character of the soil as to the best time to plant. In our own particular soil the early-flowering things are best planted in autumn, not later than the middle of November; but all late-flowering plants are better left till spring. For most things October is a better month for planting than November.

Fruit Garden.

Of late years more attention has been given to what are termed dwarfing-stocks for fruit-trees. We want, of course, to know our soil before selecting the stocks. The Pear, for instance, does well on the Quince in some places, and on others it fails altogether; but in gardens where a mistake of this kind has been made a good deal may be done to put things right. The Quince loves moisture, and if planted on a dry soil and no help given the fruit must be poor in size and quality, and will probably, in an ungenial season, crack and be useless. The remedy, of course, is a mulch of good manure and an occasional soaking—not a mere dribble—of water. Apples on the Paradise-stock need liberal support on the surface, and the spade must not be used over the roots at all. There is a good deal of harm done to fruit-trees by digging among their roots in winter. A spade should never be used, but the ground may be pointed over with a fork to let in the air to sweeten the soil. The best covering for the north side of a building or garden wall is the Morello Cherry and the Victoria Plum. I have also had good crops of May Duke Cherry from a north wall. They are not so early as on better aspects, but the fruits are usually finer and will keep a long time. Blackberries in gardens have been a success this season. More attention should be given to them, as they will grow anywhere.

Vegetable Garden.

Prepare ground for planting Asparagus by trenching and manuring. Asparagus-seeds are not usually sown now, but if the ground is ready something will be gained by October sowing, as the seeds take a long time to germinate. Cover 2 inches deep; but I should not sow in heavy land at this season. Complete the earthing of Celery and Cardoons. The latter are not so much grown as they were forty or more years ago. They are only found in very large establishments where a French cook is kept. The forcing season for Asparagus is at hand, and hot-beds may be made up and the roots laid thickly on the bed, covering with light sifted soil from 3 inches to 8 inches, according to the amount of blanched Asparagus required. The best result is obtained when the covering is deep enough to blanch about half of the grass, or, say, about 5 inches or 6 inches in depth. There is always a demand for Seakale as soon as it can be obtained, and crowns exposed to the fine sunshine in summer are the best for early forcing. If grown in the shade the crowns will not start so soon. The old system of forcing under beds of leaves and manure outside is not much practised now, as it is found less trouble and more economical to lift the roots and take them to the forcing-house. The Mushroom-house is the best place for forcing Seakale and Rhubarb, and a start should be made as soon as the crowns are ripened and rooted a bit. E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 25th.—Potted up Roses from open ground for flowering late in spring. They will be plunged in ashes outside till frost sets in, and, of course, will not be forced much. Took up a couple of dozen plants of Chervil and planted in frame. More Mint also was lifted and planted in boxes to be ready for forcing when required. Made up another Mushroom-bed in house. Tied up Lettuces and Endives when dry, and covered with dry leaves. We have them good from these leaf-beds for a long time. The leaves are dry and not thick enough to ferment.

October 26th.—Pricked out Cauliflower in cold-frame. Took up late Carnation layers and planted in cold-frame. This answers quite as well as potting them. Put in more Calceolaria cuttings. Potted off "Geranium" cuttings that were struck and are getting crowded. Pruned Vines in early-house. Fertilised Tomato-blooms in house coming into bloom. Potted and boxed more bulbs for forcing. Moved Roman Hyacinths to warm-house. Potted late Primulas into 5-inch pots.

October 27th.—Raked up and carted in leaves for hot-bed making. Made up bed for forcing Asparagus. We always force four-year-old plants which have not been cut from. Trenched a piece of ground for sowing Asparagus in spring. Finished heeling in Broccoli. Smother burned rubbish in rubbish-yard. The product makes excellent material for top-dressing, etc. Dug up a lot of Horseradish for winter use. Finished gathering late Apples, except Court Pendu Plat.

October 28th.—Looked over Alicante and Gros Colman Grapes to cut off damaged berries. They have coloured well, and up to the present have been left on night and day, with fire enough to dispel damp. Cut and bottled the last of the Hamburghs. They will keep as well in the Grape-room, and we intend to lift the roots at once. Rearranged fernery; plants were too crowded. A few old plants were thrown out to make room, as we cannot extend the house.

October 29th.—Potted a lot of Spiræas for forcing, including japonica, astilboides, and compacta; afterwards plunged the pots in ashes in a cold-pit. Took off and prepared cuttings of Gooseberries and Currants, and laid them in for the present, but will be planted as soon as time can be found for the work. Planted out more Wallflowers and Forget-me-nots in masses. The Golden Wallflower and Blue Forget-me-not always associate well.

October 30th.—Washed pots and rearranged stove-plants. A clean-up always make the plants look brighter. Passiflora princeps and Ipomæa Horsfalliæ are flowering freely. Poinsettias and Eucharis Lilies are receiving liquid-manure twice a week. Moved a lot of Cyclamens to conservatory to form a group surrounded with Lycopodium. Shifted herbaceous Calceolarias into 5-inch pots. Will be kept in cool-house for the present. Cleared off a large bed of annuals grown for cutting—these included Sweet Sultans, annual Chrysanthemums, etc.—and prepared ground for herbaceous plants.

Pernettyas.—A few clumps of these make a pleasing display scattered here and there in pleasure-grounds at a time when nearly all flowers are over, although, in common with nearly all berried plants, I expect in the majority of places their value is somewhat neutralised from the fact that the birds quickly make an end of the berries. The plants seem to berry much more freely on some soils than others, and the state of the weather at the time of the expansion of the flowers is doubtless also an important factor towards a successful set. These Pernettyas make admirable pot plants for the winter months, and they possess an important quality lacking in Solanums—viz, that they stand remarkably well in the dwelling-house. They can, therefore, be utilised in this way, and then planted out in the positions they are to permanently occupy. Independently of the tiny white flowers and the display made by the berries, the foliage is neat, bright, and attractive.—T.

OUTDOOR PLANTS.

CANDYTUFTS.

There are now many excellent named varieties of the annual Candytufts, of which the two species are Iberis umbellata and I. coronaria. When rich and deep soil is given them, autumn-sown plants grow luxuriantly, and make handsome masses of flower about midsummer. Some of the taller varieties grow to a height of close upon 18 inches, while the dwarf strains, known variously as nana and pumila, seldom reach a stature of over 6 inches. There is a wide choice of colours in the annual Candytufts, which range in tints from dark purple and crimson, through lilac and carmine, to flesh colour and white. There are few hardy annuals so justly popular as these beautiful flowers. Of perennial Candytufts there are many handsome species, the most ornamental of all being the Gibraltar Candytuft (Iberis gibraltarica). The flowers are large and of a faint lilac-white, and the plants, when growing in crevices of the sheer precipices of its rocky home, are often 2 feet and more in diameter, and covered in blossom. Iberis corifolia is a dwarf Sicilian plant bearing

The "Empress" Candytuft. From a photograph by Mr. R. A. Bradley, Aldesley Edge.

small white flowers in the late spring. I. correæfolia, a hybrid between I. saxatilis and I. sempervirens, is a useful plant for the rock garden, bearing flat heads of white flowers until June. It is easily known by its large leaves. I. Garrexiana, from the Pyrenees, is another good rock plant. It is very dwarf, and bears its small, white flower-heads in April and May. I. jucunda, often known as Æthionema, bears small, light pink flower clusters, and is very dwarf, rarely exceeding 3 inches in height. I. Pruiti is a beautiful introduction from Scilly, bearing fine heads of ivory-white blooms, which last till well on in the summer. I. saxatilis is of procumbent form, and blooms freely, its surface being studded with small white corymbs in the spring. I. semperflorens, from Sicily, is an autumn bloomer, and bears large heads of scented, white flowers. I. sempervirens, the common perennial Candytuft, is well known everywhere, with its breadths of snowy blossoms. It is a native of Greece, but is perfectly hardy in England. I. Tenoreana, a native of Italy, bears purple flowers, and on this account is valuable, though it is of doubtful hardiness.

S. W. F.

Flowers in Cumberland.—Ten degrees of frost last night (October 13), and withered flowers of all kinds the result. I cover the beds of Asters with mats every evening, and also the tubs of Agapanthus, now a mass of flower-heads, also the nearly hardy Crinum Powelli, which bore its third show of handsome flowers about a fortnight ago. I gathered a few good Roses, the last of the season, lately, and some Sweet Peas, having cut off all the immature seed-pods as they appeared—a practice I strongly recommend to keep the runners fertile. I have done so for years.—W. H. L.

NOTES ON HARDY FLOWERS.

Any work required amongst them in the way of division, alterations, replanting, etc., may be pushed forward as soon as time permits. There is nothing like getting as much of the work as can be performed finished in autumn. A good mulch may follow, and everything is on the right way for another season's display. Portions of beds or borders that are to be filled with things not yet quite ready for removal may be turned up and a peg inserted for future guidance. In the event of anything concerning whose hardiness there is a doubt, the mulch may either be of increased depth at the present time or strengthened later on if the weather is likely to prove exceptionally severe. Among the different inmates of the border that were planted with the view to permanent effect—that is, with the idea that they might remain undisturbed for years—will be found several that will be all the better for occasional renewal; in fact, unless this is done they will not be at all satisfactory after the second, or at any rate the third, season. When any sign of deterioration is apparent they should be cleared away and a start made with a new stock procured as may be deemed most suitable, either from divisions, layers, or cuttings. In the planting of new beds or portions of borders it is well to give the preference to those things that are most enduring. Some species are very beautiful in themselves, but their power of endurance is not great. Aquilegias and Pæonies, for instance, stand but a poor chance in this matter against Pyrethrums, Phloxes, Sunflowers, and many others. In selecting a certain number of plants, of which the three last named may be taken as types, it is well to choose, as far as possible, the best varieties, and it is well to give personal attention to the proper planting of the same. This advice may sound somewhat superfluous, but it is really necessary, because an idea sometimes prevails with the workman that, as the plants with which he is dealing are hardy, any sort of treatment will do for them.

A fair knowledge of the habits of different species and varieties is also necessary if the borders are large and the mixture is on an extensive scale. In the planting of all hardy bulbs and corms attention ought to be given that they rest on a firm basis and do not have a hollow of some 2 inches or 3 inches beneath them. Any that flower early in the season and whose foliage is quickly over must be planted deeply to allow for some dwarf-growing plant to occupy the space through the summer months. The ordinary mixed herbaceous border is, however, hardly the place for bulbs of any description; they are best naturalised in Grass, or, if in beds, with just one or two things that are in keeping with them. With the exception of a few familiar things, this particular class of plants has only come prominently to the front within the last few years, and even now might be much more extensively grown. Take the spring Snowflake (Leucojum vernum) for instance. One may go into many gardens and not see a plant of it, and yet it is in its season one of the most beautiful things we have for the flower-basket. Arranged lightly with its own foliage in dark vases it is very effective. Leucojum autumnale is a dwarf and, as its name indicates, late-flowering kind, with flowers of a very delicate shade. Triteleia uniflora is another plant of dwarf habit, spring flowering, that throws up when established a fine lot of flowers, useful alike for beds or cutting. Among hardy plants Montbretias justly take a high place; they suffered no check in the early part of the present season and grew away strongly, but, contrary to expectation, were much later than usual in coming into flower. They made ample amends for this, however, in the matter of duration. I do not think I ever had such a long-sustained season of Montbretia bloom.

E.

NOTES FROM AN ARMAGH GARDEN.

Sunflowers and Michaelmas Daisies have been prominent features here for some time past, and in these two very diverse families it is wonderful the amount of variety that may be obtained. Among Sunflowers and allied plants we have quite a host of brilliant yellow flowers of varying shade, both single, semi-double, and double, and of perennial Asters there is now such a vast array of species and varieties as would be a surprise to many.

Helianthus multiflorus major is a very symmetrical Sunflower. A neatly-arranged group of flower-buds and foliage is extremely effective. The American semi-double variety of H. rigidus Miss Mellish has made enormous growth, encroaching on neighbouring plants and flowering profusely.

In growing Michaelmas Daisies to the best advantage, I think it is very important to allot to each plant an appropriate site, for although almost all are useful for cutting many of them may also be made ornamental in border or rock garden if judiciously placed.

Aster hybridus nanus, a very elegant little plant, seemed rather forlorn-looking among more robust kinds in the border, so I placed a large flat stone at the south side of it in order to give a little shade and protection; it seems now quite at home, and is covered with bloom. A fine variety of A. Amellus growing close by forms a pleasing contrast, and a grand plant of Aster Coobe Fishacre, between 3 feet and 4 feet high and as much across, completes a good trio. Aster cordifolius Diana is a very charming small-flowered variety. I grow it in a rather shady corner. Aster Thompsoni is still in bloom; it has continued during a very long time to produce its large, refined, star-like flowers—in fact, for months it has been a conspicuous ornament of the rock garden. Aster Madonna is a lovely white variety of moderate growth.

Polygonum amplexicaule var. oxyphyllum is a charming late autumn-flowering plant, now in bloom. The individual flowers are small, but they are numerous, in colour white, elegantly arranged on tinted stems, with large, handsome leaves. The sprays of blooms are admirable for vases and general decorative purposes. A well-established tuft of

Polygala chamæbuxus purpurea (Purple Milkwort), nestling among choice plants in a

rock garden, is now in full bloom. A russet-brown stone and tiny variegated Vine make a fitting background, and combine to form a very tempting bit for brush or camera.

Meconopsis cambrica fl.-pl. (Double Welsh Poppy), commenced flowering at the end of June, and now in the latter part of October it is still in bloom. This double form of the Welsh Poppy is a neat, dwarf plant, and seems to be very easily managed. J. McWalters.

Tufted Pansies — increasing the stock (*F. P.*).—Now that the flowering season is practically over, the question of how to increase the stock of plants naturally arises in the minds of most growers. Those planting out now commenced to increase their stock last July and August, and cuttings inserted then are now nice young plants ready for planting in their permanent quarters. You should cut out all the old growths, simply leaving the young shoots which are seen pushing their way through the base or crown of the old plant. This should have been done before, and then there would have been plenty of stock with which to begin with. However, it is not too late yet, providing some shelter can be given to the new pieces which it is intended to propagate with. If the old plants can be left for a week or longer after being cut back so much the better, as there is then a greater likelihood of getting healthy cuttings. There are two general methods of propagation, one by the insertion of the cuttings and the other by breaking up the old plants. The former method is excellent. Cuttings may be detached from the crown of the old plant as just alluded to, and these may be from about 2½ inches to 3 inches in length. The cuttings should be cut across with a sharp knife just below a joint, and the two bottom leaves trimmed off. At this season, though, it is easy to detach the growths with a few bristling roots attached, and these very soon make capital little plants. A system practised in many establishments is to cut back the old growths of the plants, leaving them just long enough for the new growths to make a fair amount of progress. Then these are lifted and broken up into small pieces, each with a quantity of roots attached. These pieces are dibbled in a frame of some specially-prepared material, where they soon recover from the shock, and make capital plants for bedding out in the spring. I usually propagate my plants on slightly-raised beds in the open, but commence operations much earlier than this—in fact, quite early in the autumn. As the season is now so well advanced it would be better to use a cold-frame, where some nice gritty compost should be got together and passed through a sieve with an ½-inch mesh. A groundwork of ashes, with a sprinkling of soot or lime over them to keep the worms from troubling the occupants of the frame with their worm-casts, as these cause so much inconvenience if this little trouble be not taken. A layer of the gritty compost, about 8 inches deep, will be sufficient, and this should be levelled down. Press the compost firmly with a board or anything similar, afterwards watering the soil with a fine-rosed can, and allowing this an hour or more to settle down. The cuttings may then be dibbled in in rows 3 inches apart, and at a distance slightly less between each cutting. Make the holes with a small blunt dibber about 6 inches to 8 inches in length, and of sufficient depth to embed the first two joints. Press firmly around the base of the cutting. Label each sort as it is taken in hand, and thus avoid confusion afterwards. The hardier the treatment the cuttings receive the better they appear to appreciate it. Only on very cold nights and days and during a long spell of wet weather is it advisable to put on the frame-lights.

A good Star-wort (Aster Amellus Riverslea).—This distinct Michaelmas Daisy is one of the best of a useful class of autumn plants. It grows to a height of about 2 feet, is compact, bushy, with erect, rigid stems, and very free flowering. The deep violet-coloured flowers are considerably larger than the type. A large mass of this little-known variety was exhibited by Mr. Deverill, of Banbury, at the last Drill Hall meeting of the Royal Horticultural Society.

Bodmin Chrysanthemum Show will take place Nov. 10th next. Schedules on application to the secretary, Mr. R. P. Elyvean.

PASSIFLORA EDULIS.

The subject of the illustration is so much grown and appreciated as a decorative climber for lofty conservatories and such-like structures that it is difficult to ascribe a reason for its comparative neglect as a fruit-producing plant. Such it certainly is, and of a very high order too, bearing enormous crops of most luscious fruits, which are a valuable addition to the dessert. Its culture is of the simplest, for given an intermediate temperature, light, sweet, friable soil and ample space, together with ordinary attention to watering, healthy plants, fine foliage, and bloom in abundance will result. These conditions must be somewhat modified to ensure fruitfulness as well. Reasonable confinement of the roots and fertilising of the blooms are imperative, and if planted in sunny positions slight shade is beneficial, especially while in bloom. It is necessary to check over-luxuriance and to artificially fertilise the blooms, for unless this is done the probability is that no fruit would set. It is important to guard against bright sunshine prior to setting, as well as to

Fruit of the edible Passion-flower (Passiflora edulis).

shield the young and tender embryo fruit from the fierce rays of the sun. As far as I know, there is no special mode of pruning more adapted for fruiting than another; merely thin and shorten the shoots according to space available, avoiding crowding. The summer routine will be pinching the shoots when two, three, or more fruit are set, according to the strength of the shoots and the crop intended, cutting well back any non-fruiting ones, which will—if early in the season—probably make fruitful breaks and produce a crop later. Water should be applied sparingly until a good set is secured, when copious supplies of both clear and liquid-manure must be given to swell up heavy crops, and a sprinkling of some approved fertiliser may be added occasionally—in fact, feed liberally but judiciously.

Thrip is the only insect pest which habitually affects the plant, and for this pest fumigation is the best remedy. Propagation is easy, either from cuttings or seeds. I have all the back walls of vineries clothed with it, and the plants annually carry heavy crops of fruit, and I have also a very old house, flat, dark, lean-to, with more wood than glass, in which, trained to the roof, it thrives well, bearing three crops a year. Better results would ensue, no doubt, in modern, well-lighted structures, but these instances prove its accommodating nature. The fruit shown in the cut lacked the usual depth of colour, but the specimen sent was amongst the earliest of the season, grown under the dense shade of Vines and Strawberries—a thick canopy. P. quadrangularis is not grown here, P. edulis requiring less heat and being much superior in flavour. J.

TREES AND SHRUBS.

TREES AND SHRUBS FOR A PEATY SOIL.

Would you kindly inform me through your paper what to do with a piece of waste-ground? It is in the south-west of Scotland, and the soil is peat. It consists at present of a piece of Grass, backed by very high Scotch Firs and Spruce. It faces south, and is very sheltered from the north, east, and west winds. It is about 200 feet to 300 feet long, and as many wide. I shall have to enclose it with a fence to exclude the rabbits, therefore propose to only use half the width, but use the whole length. Would you kindly give me a list of things that would thrive in peaty soil—flowering shrubs, bulbs, and plants?—White Heath.

*** Most of the hardy trees and shrubs grow well in peaty soil. As your ground is so well protected against cold winds you will find the following short list to comprise a useful and cheap assortment. For your convenience we will divide the subject into three parts—viz.: 1, Trees of moderate and vigorous growth. 2, Shrubs. 3, Herbaceous plants.

Trees.

Every garden should contain a good selection of hardy-flowering trees. The Double Scarlet Thorn (Paul's) is a free-flowering tree of good habit. The long branches are generally covered with deep crimson double flowers. The Cock's-spur Thorn (C. Crus-galli) and C. prunifolia are very handsome ornamental trees. In the autumn the leaves of the two last-named varieties turn crimson colour. The large berries are then very prominent and make a fine display until the middle of the winter. The flowering Apple (Pyrus Malus) is a capital free-flowering subject. It is also a very good grower. P. Malus floribunda is of dwarfer habit, and its flowers are produced with greater freedom. It is exceptionally hardy, and forms a freely-branched, well-balanced tree. Amongst the Cherries may be found a host of very valuable spring-flowering subjects. The undermentioned are really first-rate varieties: C. Padus (Bird Cherry), C. semperflorens, and C. Avium fl.-pl. The last-named is unquestionably one of the finest of white spring-flowering trees. The Almond is equally valuable for spring blooming. It is a pity that this beautiful tree is not made more use of. It possesses all the sterling qualities of a really first-class hardy tree. The double-flowered Peach makes a capital companion to the last-named. Halesia tetraptera (Snowdrop-tree) is another good-habited tree; its pure white flowers are borne very freely. Cotoneasters must not be overlooked, especially the varieties named C. frigida, C. bacillaris, C. horizontalis, and C. buxifolia. Like the Thorns above mentioned, Cotoneasters have two seasons of beauty—*i.e.*, when they are carrying their burden of small, whitish flowers in spring, and later in autumn and winter, when their long twigs display an abundance of orange-scarlet berries in dense clusters. Fraxinus Ornus (the flowering Ash) is one of the most distinct and beautiful of hardy trees; thrives well in all soils. Robinia hispida (Rose Acacia) is a capital low-growing tree; its large flowers are produced very freely in dry sandy soils. The deciduous Magnolias are very hardy and free flowering. The varieties named M. conspicua, M. c. Soulangeana, and M. purpurea Lennei should find a place in every garden. Amelanchier canadensis (Snowy Mespilus), Laburnums, and Arbutus (Strawberry-tree) well deserve a place.

Shrubs.

There is considerable variety amongst deciduous and evergreen shrubs. All mentioned below are hardy, very ornamental, and free flowering. The New Zealand Daisy-bush

(Olearia Haasti) is a very fine dwarf evergreen shrub. Its small, pure white, highly fragrant flowers are thrown well above its small, neat, Box-like leaves. It is by no means exacting in its requirements; given a moderately rich, well-drained soil and an exposed position it will produce an abundance of flowers yearly. Philadelphus Lemoinei and P. microphyllus are very charming dwarf-growing plants. Both are very bushy and free flowering. The flowers in each case are pure white. The Golden-leaved Philadelphus (P. coronarius aureus) deserves a place on account of its rich yellow-coloured foliage. It is one of the few shrubs which retains its character under the shade of trees. Rhododendrons, Sedums, and Kalmias are also first-rate shrubs of compact habit. Of New Zealand Veronicas V. Traversi is the best. Its spikes of flowers are borne with much freedom. Laurestinus (Viburnum Tinus), Berberis Darwini, B. stenophylla, and Cytisus albus are amongst the most beautiful of hardy free-flowering shrubs. Genista virgata and G. præcox are capital shrubs for dry soils. The last-named does not always come true from seed, consequently it is advisable to increase the stock by means of cuttings or layers. Ulex europæa fl.-pl. is another first-rate shrub for dry, sandy soils. The Privets are another set of useful and very accommodating subjects. Ligustrum lucidum, L. Quihowi, and L. sinense are about the best. Groups of the golden-leaved Privet produce fine effects when planted with discretion. Forsythias, Lilacs, and the deciduous Daphnes are free-growing and very handsome shrubs. The shrubby Spiræas and single-flowered Roses include some of the gems of the hardy shrub department. Jasminum nudiflorum and Lonicera Standishi are very valuable on account of their flowers appearing during the dull days of the winter. Chimonanthus fragrans is another plant whose flowers appear in winter in the open air. Indigofera decora alba and I. Gerardiana are very distinct shrubs with long racemes of Pea-shaped flowers. Prunus triloba should not be passed over lightly, as it is one of the very best of spring-flowering shrubs. Viburnum plicatum, Weigelas, Escallonias, Zenobias, and Yuccas are well worth including in a list of select shrubs.

HERBACEOUS PLANTS.

The variety here is almost endless. We can recommend the following: Double Pyrethrums, Helianthuses, Liliums, Phloxes, Pæonies, Delphiniums, Gaillardias, Coreopsis, Statices, Rudbeckias, Irises, Asters (Michaelmas Daisies), Pansies, Heucheras, Campanulas, Hepaticas, Pinks, Gypsophila, Aubrietias, Erigerons, Carnations, Hypericums, Anemones, Hemerocallis, Pentstemons, Gynerium, Aquilegias, Funkias, Arundos, and Achilleas.

Poplars as wind screens.—Please say which are the best as wind breakers—Black Italian Poplars or Lombardy? Is there any difference in the growth?—G. PORTER.

*** The Black Italian Poplar is certainly superior to the Lombardy Poplar as a break-wind. The last-named is tall and narrow, all the branches being very erect and closely gathered round the central stem. The Black Italian is a very rapid grower, plentifully supplied with horizontal branches. Both varieties thrive in all kinds of soil.

Propagating Magnolias (*Young Gardener*).—Magnolias are readily propagated by imported seeds sown in shallow boxes or pans of light soil, and placed in a gentle heat in early spring. Cuttings of well-ripened wood strike root if placed in a brisk heat about August. Layering is a safe and easy way of increasing the stock; but grafting is the method most commonly adopted where Magnolias are cultivated on an extensive scale. This operation should be carried out during the months of August and September. When the scions have been properly cut and securely tied to the stocks they should be removed to a close case, syringed occasionally, and protected from the sun by means of tiffany, etc. In about six weeks a union will have been formed, and a chink of air should then be allowed, and in a week or so they may be stood on the side stages of the house, hardened off, and in spring planted out in well-prepared soil in nursery rows.

Araucaria seeds (*D. H. D.*).—Araucaria seed is not at all particular as to soil so long as it is sweet and well-drained. If seed be sown in spring in shallow pans, and placed in gentle (not brisk) heat, germination will take place in a few weeks' time. When the seedlings are large enough to handle they should be potted off into small thumb-pots, and later on removed to cold-frames. When large enough they should be planted out in a mixture of good leaf-mould and loam. Avoid cold east winds, and above all cold, wet, and badly-drained soil. In rich, well-drained soil the Araucaria is a very ornamental conifer, but in unsuitable soil it is one of the most ugly of the tribe.

Planting Plane-trees in public roads (*J. B.*).—The Plane-tree is much more suitable for street planting than the Lime. Though vigorous in growth, it can be kept within bounds very easily and with much less labour than the Lime. It is certainly the better of the two for planting in a 40-feet roadway, as its branches are more erect, and it stands the pruner's knife better than most trees. Grows well in all kinds of soil. Trees can be supplied by growers near London. Consult our advertisement columns.

1856.—**Hydrangeas of bluish colour.**—A friend of mine had some Blue Hydrangeas some time ago. He said he turned them blue with the following mixture. I tried it myself, and mine were bluish, but not so dark as his. Mine were potted in October from the open ground: Six parts fibrous loam, two parts leaf-soil, one part bone-meal, a little charcoal, a little silver-sand. To one bushel add ¼ lb. sulphate of iron. Pot firmly. Just before the trusses show put a teaspoonful of powdered alum to every quart of water, and give this alternately with liquid-manure. More alum may be used after a time.—THANET.

Salvia azurea grandiflora.—This is an exceptionally brilliant bit of blue for the greenhouse at this season, and supplies in intensity of colour what the flowers lack in point of size.

Fifth Edition now ready, illustrated, medium 8vo., price 15s. **The English Flower Garden**: *Many Views of the most Beautiful Gardens of Country Houses, and over 500 Illustrations, with Descriptions, of the Best Plants, their Culture and Arrangement. London: John Murray and of all Booksellers.*

PERENNIAL SUNFLOWERS.

WHEN autumn-tide has come and the year has begun to slowly wane no flowers are more decorative in the garden or for indoor decoration than the Perennial Sunflowers, which are then in the zenith of their beauty. The family is such a large one that it is only where the whole genus is collected, as was done by the Royal Horticultural Society at Chiswick a few years since, that it can be inspected in its entirety. A careful scrutiny of that collection, however, soon convinced the investigator that for all practical purposes a selection of a small number of the best would suffice to beautify the garden. Among the most striking are Helianthus decapetalus and H. multiflorus, the former usually exceeding the latter in height by about 1 foot, and bearing flowers of a rather lighter tint of gold; both are extremely handsome plants, and from the latter the well-known double forms have originated, of which Soleil d'Or is perhaps the best. H. lætiflorus is a striking Sunflower and bears gracefully-fashioned deep golden blossoms some 5 inches in diameter. It grows to the height of 6 feet or 7 feet, and is possessed of a very rambling root-stock, the young growths often shooting up at some distance from the old stool. This Sunflower produces probably the best flowers for indoor decoration. H. rigidus is far commoner than those hitherto mentioned, and is of less worth; but the new introduction, H. rigidus Miss Mellish, is of great merit, and runs H. lætiflorus hard for first place. It is of considerably loftier stature than the type, and large, deep yellow flowers are more artistically formed. H. giganteus is a tall plant, often exceeding a height of 10 feet, and bearing heads of light yellow blooms, which are smaller than any of the varieties already mentioned. H. orgyalis is another tall Sunflower, generally reaching about the same stature as the last-mentioned. Its flowers are, however, still smaller, but are much deeper in colour. The two latter are seen to best advantage at the edges of a shrubbery or along a dividing fence. For the garden proper, H. lætiflorus, H. rigidus Miss Mellish, H. multiflorus, with its double variety, and H. decapetalus will be found sufficient. As will be seen from the illustration, these Sunflowers are admirably adapted for decoration of the house.—S. W. F.

Flowers of the Perennial Sunflower. From a photograph by Messrs. Harkness and Son, Bedale, Yorks.

FRUIT.

MEDLARS.

The Medlar is not appreciated by everyone, and unlike most fruits it is not good until somewhat decayed. This is a strange point, as other fruits at such a stage are useless. It may be asked of what value is the Medlar to the amateur? And I reply, much, as few trees are more picturesque in aspect; indeed, the Medlar is loved by many for its leafage and growth, and by not a few for its fruits. We have a wild Medlar which grows in bush form, often in hedges. The cultivated species are not numerous. I will describe them later, and give a few notes as to the quality of the varieties in question. The Medlar is interesting to the amateur in other ways, as once planted it lives to a great age, requires scarcely any attention, and is not subject to the attacks of insect pests. It is fairly fruitful, and, like many other fruits, the largest is not always the best. A great deal, as regards quality, depends upon the way the fruits are ripened (or bletted as it is usually termed in country districts). A cool place, not too dry, during the ripening process is important. I now come to

Varieties.—I only know of three, but there is a fourth—a small stoneless fruit. I have seen this growing in bush form, its only value being its late keeping, as it keeps a long time. The quality, however, is not nearly so good as the Nottingham. The Nottingham is probably the best Medlar for general culture. The fruits are of medium size, of a rich, rather acid flavour, and the tree crops well, usually developing a nice shapely head, though the branches are somewhat gnarled and twisted. This variety rarely fails to fruit, and being the best flavoured should be preferred to others. The trees grow more erect than some, and the leaves are smaller. The Dutch is often planted for its large fruit. This is the largest Medlar grown, the flavour being fair, but cannot be compared to the above-named. The fruits average 2 inches in diameter, with a large, wide eye and broadish stalk, and thickened at the base. This variety assumes a more spreading habit than the others, and is a grand tree for the garden. I am surprised Medlars are not more largely planted for the purpose named, as they are most pleasing in the garden, not at all fastidious as to soils, and fruit in a young state—at least, the Nottingham and Royal varieties do. The Royal is not unlike the Nottingham, but larger and a prodigious bearer. Even in a young state this variety (though thought inferior in quality to the Nottingham) is a first-class Medlar for general use, and these varieties may be grown as bushes or pyramids, a form rarely seen, as very few grow them thus. I once saw pyramid Medlars used as a screen to divide the flower from fruit garden, and they were much admired. The Royal partakes of the acid flavour of the Nottingham, though in a less degree. By a few this flavour is valued, but my advice is not to gather too early or ripen too quickly or the acid flavour is lost.

Many amateurs who have not space to grow standard trees of these fruits may with advantage grow the Royal or Nottingham in bush form. They make prolific pyramids or bushes grafted or budded on a short leg or stem, and it is useless for amateurs to try to bud their own trees. They have not got suitable stocks to work upon, and though the Medlar may be worked on the common White Thorn, the Quince, Pear, and the Medlar itself—that is, stocks or trees raised from seedlings or suckers of the Medlar—they can be purchased so cheaply that I would advise getting good trees at once.

The best flavoured fruits are those on the Medlar stock. On the other hand, they are not always so large or so prolific. For shallow soils the Quince is the best, as it roots near the surface, and the Pear-stock requires a good depth of soil. On the other hand, such kinds as the Dutch grafted on the Pear make a splendid tree for the garden. On the Continent, where more Medlars are grown, the Thorn is very extensively employed as a stock, and is admirably suited for light soils or dry situations. I have gone more fully into varieties, stocks, and culture, as the Medlar is not widely cultivated, and amateurs who wish to plant may be better able to judge of varieties, and select them, if they prefer size to quality. I have omitted to state that fruits can be made into a good preserve if desired. W.

—— There are probably few fruits about which individual tastes differ so much as they do about the Medlar. Those who have acquired a liking for the fruit are, generally speaking, inordinately fond of it, while the uninitiated have a repugnance to it from the mistaken idea that the ripe stage of a Medlar is that of decay. Undoubtedly the proper "bletting" of the fruit requires some care, and after that is done one needs the discrimination that only comes with practice and observation to enable one to use only those fruits for dishing up which are perfect in flavour and untainted from the insidious mould which often appears at the stem, imparting a disagreeable, musky flavour to the whole fruit. Varieties are not numerous, and the one here illustrated is that most commonly seen. The individuality of the variety is well shown in the illustration.

The Nottingham Medlar.

The trees vary in habit; the Dutch throws out its branches in a twisted manner, and is inclined to assume a weeping and spreading habit, so that it is best grown as a standard. The Nottingham is more upright in habit and not such a gross grower; it does well in bush form, and is the best for places where room is limited. To obtain good crops of fruit the trees are best when managed pretty much on the "let alone" principle, for pruning only tends to produce gross and unfruitful shoots which smother the rest of the tree, and manuring has much the same effect, though an occasional mulching may sometimes be helpful when the soil is very poor.

In selecting trees for planting, the situation should be considered, as the stocks on which they are worked have a great influence on the future well-being of the tree. If wanted for a dry site or a light soil the White Thorn is the best host; for a wet spot or heavy soil trees on the Quince should be selected; while for a medium soil no stock is better than the Medlar itself. The tree from which the illustration was taken is worked on the White Thorn, and suckers of this are troublesome, and have to be frequently removed. Medlars should be allowed to hang as long as possible on the tree provided they are not subjected to severe frosts. They never ripen better than when they can be allowed to hang until quite the end of October. To ripen the fruit properly it should be quite dry when picked, be stored thinly on a cool shelf where no moisture can reach it, and allowed to develop without subjecting it to any heat.

As the fruits will not ripen all at once and keep well for two or three weeks after ripening, they may be had in good condition for ten or twelve weeks at a season when the home-grown dessert fruits are not very varied. In selecting fruits for dishing up see that there is not the least trace of mould at the stem or in the eye, and choose those which have softened throughout, but discard any that appear more than ordinarily soft, but which do not retain the impression of any slight pressure which may be used on them, as such fruits are not right, their pulp being very watery and insipid, if not altogether unpalatable. Those who have a surplus of fruits or who do not care for them in a raw state may convert them into a most delicious jelly much resembling that made from Guavas.

ROYAL SOVEREIGN STRAWBERRY.

There is no doubt as to the excellency of this fine variety. It is of good flavour, free growth, and for forcing or private garden use one cannot speak too highly of it; but as a market fruit I do not think it is going to supersede Sir Joseph Paxton; at least, if it does I shall be greatly surprised. Sir Joseph is one of the firmest Strawberries we have, and the punnets or baskets open at the end of the journey as fresh-looking as when they started. But Royal Sovereign was by no means equal to it in this respect, and did not realise the price of Sir Joseph after the first week of the outdoor Strawberry season. I should like to caution any growers who may not have had much experience of this comparatively new variety to give due consideration to all sides of the question before grubbing up such an old, well-tried friend as Sir Joseph Paxton, to make room for a really good variety, but which, if it fails in the matter of being a good traveller, is of little use to those who have to cater for customers at a distance. Novelties and improvements follow each other so rapidly that one would think perfection must soon be reached, but when it comes to comparison with older varieties it is very few that last more than a few years. Amongst Strawberries, it is such kinds as British Queen, Keen's Seedling, and Sir Joseph Paxton that give satisfaction to everyone who treats them well and studies their peculiar wants, while newer varieties that were to have replaced them have disappeared from catalogues, and are not procurable after a few years.

J. Groom, *Gosport*.

Flavour in fruit.—Our highest-flavoured Apples—Cox's Orange Pippin, Ribston Pippin, Margil, Cockle Pippin, Mother Apple, Cornish Aromatic, and the Russets—invariably give the richest or keenest flavour when the fruits are of medium size, not too rapidly swollen, and not necessarily highly coloured. A gravelly base, though not always the best for ordinary gardening, seems to be most suitable for fruits where fine flavour is held to be of more importance than mere size or appearance. For Pears there are no positions like walls to produce fine fruit. But most of the best Pears do well when grown as bush or pyramid-trees worked on the Quince, and if the fruits produced are not so large, at least it does seem they give the richest flavour.

THE SWORD CACTUSES (PHYLLOCACTUSES).

The only genera of Cacti which find much favour in English gardens are the Epiphyllums and the Sword Cactuses (Phyllocacti). All of the numerous named kinds cultivated in gardens are either seedlings or hybrids. In the case of Phyllocactus there are ten or a dozen distinct species described, but of these not more than half are known in gardens. The most popular, because they are certainly the most beautiful, are the hybrids and seedlings which have been raised within the last twenty years, and which now number close upon a hundred named sorts. These have been raised principally by German and French cultivators of Cacti, whilst a few of the very best have originated in America and England. Over eighty of these named sorts of Phyllocactus are cultivated at Kew. It must be admitted that many of them are scarcely distinct enough to be worth a name, but in this respect these plants are only on a par with most garden races of plants.

It is a fact, unaccountable no doubt, that the yet they are not healthy enough to flower. The plants commence to make new growth about the beginning of April, and they keep on growing till August. During this time they should be kept just moist at the root and syringed overhead once or twice a day in hot weather. They like full sunlight, plenty of fresh air, and a temperature not lower than 65 degs. at night. The soil should be a mixture of light loam, well-rotted cow-manure, and brick-rubbish, or coarse sand. The pots should be a quarter filled with drainage. When growth is finished the plants should be kept drier and allowed more air. From the end of October to the beginning of March they may be placed in a light, airy greenhouse, where they will be safe from frost and kept dry. They flower from April onwards. If over-watered the roots will die and the plants rot away at the neck. Evidences of this are seen in the shrivelling of the stems, and directly this takes place water must be withheld.

The crossing of the different kinds or species with each other is easily accomplished, but it sometimes happens that the parent selected to bear the seeds is not strong enough to mature

A Phyllocactus in flower. From a photograph by Mr. A. Godfrey, Barrowley, Grantham.

beauty and garden value of many of these Cacti are scarcely recognised in this country. A few cultivators possess a collection of Epiphyllums, still fewer have an odd plant or so of the Night-flowering Cereus, and here and there, but chiefly in the windows of cottages, one sees a few plants of Phyllocacti; but anyone who knows them must admit that we have very few plants which, in return for so little trouble, make such a gorgeous display of blossoms as do the Phyllocactuses. They flower profusely, their blooms are often enormous, but never ungainly, their colours white, rose, crimson, purple, yellow, or variegated, and always brilliant, and although each flower remains fresh only a day or two, yet they are produced in such abundance by healthy plants that the display is continuous for several weeks. Single specimens have been known to develop over 300 flowers in a year. When it is added that they are among the easiest of all garden plants to manage their claims to popularity must appear exceptional.

The cultural requirements of Phyllocacti are of that description expressed by the saying: "The more you neglect them the better they like it." When coddled, carefully watered, and often shifted into larger pots, they soon get into bad health, and though they rarely die, the fruits. The same remark applies to Epiphyllum. The fruits of Phyllocactus are round, as large as a Green Gage Plum, and bright crimson. They contain numerous seeds scattered through a watery pulp, which is sweet to the taste.

P. DELICATUS is of a charming shade of rose, and is a most desirable plant. The very finest of the deep-coloured kinds is that named J. T. Peacock, in compliment to one who possessed a famous collection of Cacti and other succulents. It will be remembered that on the death of Mr. Peacock the whole of his vast collection of plants was sold by auction. Amongst them were several hundreds of this Phyllocactus, which till then had been known only in Mr. Peacock's collection. It is a tall, robust grower, with triangular stems and huge flowers 8 inches across, deep crimson, shaded with violet inside.

P. CRENATUS is a species of exceptional beauty, its flowers rivalling those of the Night-flowering Cactus (C. grandiflorus) in size, purity, and fragrance. It is one of the parents of some of the best of the hybrids. P. grandis is another very fine species with enormous creamy-white flowers, which are also fragrant. This kind has the exceptional habit of expanding its flowers after sunset and being at its best during the night. P. albus superbus, Conway Giant, Cooperi, Franzi, General Garibaldi, C. M. Hovey, ignescens, Gordonianus, and splendens are a selection of some of the best hybrids and seedlings. The plants are as cheap as Geraniums, and as they do not take up much space it is easy to get a collection and select a few good ones from them, according to taste.

The genus has been in cultivation since 1710, when it was represented by P. phyllanthus, then called Cactus phyllanthus.

The Cockspur Thorn (Cratægus Crus-galli).—Most of the Thorns have this autumn been heavily laden with fruit. Several of the most beautiful, however, like C. mollis and C. coccinea, are now past, the haws for the most part having fallen, but C. Crus-galli still retains its full crop, and its bright scarlet-red fruits make one of the cheeriest of autumnal pictures in the garden. Like most of the showier-fruited Thorns, it comes from Eastern-North America, where it is common and is widely spread, its natural range extending from Canada southwards to Carolina, etc. It is a small, spreading tree, rarely more than 20 feet high, and has been in cultivation in Britain over 200 years. It blooms towards the end of May, its flowers white and about twice the size of those of our native Hawthorn. Most plants that are spread over large areas in a state of nature show much variation, and this is no exception to the rule. In the leaf especially it differs in size and shape, as the varietal names of arbutifolia, linearis, ovalifolia, etc., fully justify. The leaves, however, are always firm to the touch, smooth, and glossy green, and remain longer on the tree than those of any deciduous Cratægus. The spines are long, stout, and slightly curved. Of the numerous varieties the most distinct, perhaps, is pyracanthifolia. This is a dwarf, small-leaved tree, and is remarkable for forming an almost flat top, and thus assuming the shape of the letter T.

Pentstemons (*E. A. L.*). — Pentstemons will live in the open through the winter in South Devon, except in very damp situations and very severe winters. We know of a fine lot of seedlings that came through the long frost of 1895 unharmed without protection. Therefore, unless anything very exceptional in the way of weather occurs during the coming winter, "E. A. L.'s" seedlings under a south wall should not need protection to ensure immunity.—S. W. F.

THE KITCHEN GARDEN.

TOMATO GROWING ON THE ITALIAN RIVIERA.

In the neighbourhood of Albenga a plot of Tomatoes may contain from five to ten thousand plants. The latter number would be a large garden. The plants are grown in rows 20 inches apart, and 12 inches apart in the rows. Each plant is trained to a separate stake. The stakes slope gently towards the centre between each pair of rows, and are fastened to a cross-piece running the length of the rows (see sketch

Stakes from the Great Reed, as used for Tomato growing on the Riviera.

enclosed). Broom (Genista) shoots are used in training the plants to the stakes, the latter consisting of long rods of the Great Reed (Arundo Donax). They cost from two francs to four or five francs per hundred, according to their strength, and last two or three years. The price of Tomatoes varies according to the season, sometimes as low as two francs the hundred kilos (220 lb.), and as high as twenty-four francs when the fruits are scarce. E. L. Bland.

Tobarcooran, Carnmoney, Co. Antrim.

Good Tomatoes.—I have read with interest the notes *re* Tomatoes in Gardening of September 25th and October 9th. I have grown three varieties this summer—Conference, Frogmore Selected, and Trophy—and have had very heavy crops on each kind. I stood the plants 18 inches apart in 10-inch pots, and filled in the space between the pots with good fresh loam. I rammed the soil firm and touched the blossoms with a rabbit's-tail each day at 12 or 1 o'clock to ensure a good set. For manure I watered with weak liquid from the byre alternately with clear water. Trophy has given the heaviest crop, a number of the fruits weighing over 1 lb. each, and most of them ½ lb. each. Conference and Frogmore, while not so heavy, have yielded from 18 lb. to 24 lb. of fruit per plant. I may mention that they were grown in a cool-house, with only a little heat at the setting period, and abundance of air night and day.—John Dudgeon, *Lochbine, Argyllshire.*

Growing large Onions.—An inquirer after information under this head recently may be interested to learn that no Onion brings such large, heavy, and solid, as well as handsome bulbs of a semi-globe form, as do Ailsa Craig, when the finest of these range from 2½ lb. to 3 lb. A particular seed stock should be obtained. The usual course with our finest growers, such as Bowerman and Hackwood Park, is to sow seed thinly in pans or shallow boxes in fine soil, and stand them in gentle warmth in a light greenhouse. This is done about the middle of December, the plants are kept near the glass, and when 4 inches in height are dibbled out thinly into other boxes or pans filled with good fine soil. They are still kept near the glass that the plants be sturdy and not drawn. About the middle of March the plants are placed in a frame to harden, getting plenty of air in the day, then towards the end of April, being some 7 inches to 8 inches in height, they are transplanted on rich ground out-of-doors with balls of soil attached, and put at some 18 inches apart one way and 12 inches the other. The soil is the same every year, but it is well trenched each winter, and in the trenching has a heavy dressing of half-decayed manure added. Also a mulching is given during the summer and plenty of liquid-manure.—A. D.

LATE ROSE REPLIES.

Moving W. A. Richardson Rose-tree.—Will you kindly tell me if I could safely move a William Allen Richardson Rose in November? It is three or four years old and about 6 feet high. Also whether it would hurt it to be out of the ground for a couple of days during transfer?—Lynton.

*** You could scarcely select a better time, and if the roots are kept moist they will come to no harm. Water well when planting, and if dry weather sets in give an occasional overhead sprinkle.

Yellow Rose for east wall.—I have a strip of garden (with gardens on both sides of it) about 50 feet long by about 16 feet wide, running almost due north and south. It is walled on the east, south, and west; house wall on the north. Soil a good loam; has had stable-manure dug into it. I want to put in a yellow Rose against the wall on the east—that is, the Rose will have an almost due west aspect. The wall is about 7 feet high. The shade of yellow I want is that of W. A. Richardson, but I do not want this itself, because its blooms are poor when the bud stage is past. I have not room for more than one Rose. Will you kindly tell me which of the following Roses you recommend: Mme. Pernet Ducher, Mme. Bérard, Mme. Eugene Verdier, Perle de Lyon, Perle des Jardins? If you think any other Rose preferable to these please name it?—C. J. Powlett.

*** There is no other climber of the same shade as William Allen Richardson, but Mme. Pierre Cochet approaches it, and is a little larger. None of those you name are nearly so good as W. A. Richardson.

Best climbing Rose for garden arch in Lincolnshire.—Will you please tell me the best Rose to get for the above? I am not particular about the colour, but want a sweet-scented one. It will be in rather an exposed position, open to the north and west.—Beta.

*** Emlie Dupuy, Félicité Perpetue, Gloire de Dijon, and William Allen Richardson are so suitable that we cannot decide which is the best—probably one of the two last, a salmon-buff and a deep orange and apricot respectively.

Rose cuttings in the open.—I am desirous to try to strike some H.P. Rose cuttings in the open. You will greatly oblige by telling me in your valuable paper how to proceed, length of cuttings, depth to insert them, whether to plant in sunny or shady place, should the shoots be cut off or torn off by the heel?—Kent.

*** We have an article appearing about Rose cuttings and other outdoor work.

Best dark crimson climbing Rose, etc.—Kindly give name of the best and darkest crimson climbing Rose for training on wall of unheated greenhouse? 2, Is Charles Lefebvre darker than Cheshunt Hybrid, and are the buds long or globular? Is it a continuous bloomer? 3, Is Climbing Devoniensis a continuous bloomer?—Narberth.

*** We find Reine Marie Henriette a grand dark red, with very long buds. It is much deeper under glass, opening more quickly than in the open air. Charles Lefebvre is globular when in bud, a free bloomer, and many shades darker than Cheshunt Hybrid. Climbing Devoniensis is a very erratic Rose, and seldom makes more than one good crop of bloom during the season, this being upon the long rods of the previous year.

Climbing Roses under glass (*Reader and others*).—As we have received quite a dozen queries of the same tenor as that from "Reader," we will give a few notes upon these. Our querists wish to know what to do with the long rods made since the wood which flowered was cut out. Leave them alone. Simply fasten them in the best and most convenient way you can, and keep in a horizontal position as far as possible, and the rods about a foot from the glass. Most of the questions relate to Roses in cool or very slightly heated houses. In that case keep the wood as backward as possible; new growth will push out only too quickly for the protection you can afford. Many, too, have their plants in an outside border, and have drawn the rods through after the manner of Vines. This is scarcely advisable, as the roots are in such a different position to the wood growth, and they are asking roots in very cold soil to supply the wants of wood growing under summer conditions. Even when inside and they can gain access to outside soil, the latter must be protected from excessive wet and frost as soon as the eyes burst inside. Some readers are in trouble because a long rod is producing side growths already. These rods should be ripened as far as possible, which will prevent this; but no harm is likely to accrue if you could but afford sufficient protection during winter. We would not cut them off, but if the rods and laterals can be ripened off better, would prune back the latter to two or three eyes early in the year.

Roses for conservatory from outside border (*Mrs. U.*).—You will not do well with Roses planted entirely outside and the wood brought under cover. Consider the vast difference between the temperatures, the wood being forced, and roots remaining in a cold and uncongenial soil. L'Ideal and Mme. Bérard are the most likely to suit.

Rose Reynolds Hole (*Thorndale*).—Yours is a bad type of Prince C. de Rohan, certainly not S. Reynolds Hole, which is quite smooth wooded, and a capital Rose to open its blossoms. S. Reynolds Hole, Victor Hugo, Charles Lefebvre, Prince Arthur, and Prince C. de Rohan are all grand dark varieties.

Stocks for standard Roses (*A. Maze*).—The best suckers do not run so far without producing fibre, and yours would be awkward to transplant, besides the great risk of future suckers from so long and coarse a root stem. If you do plant them, trim off at least half of the coarse root.

Pruning Niphetos Rose.—I have a Niphetos Rose in conservatory which wants pruning. When ought I to do it?—L. H.

*** During next month; but if the climbing variety, be careful not to cut away long rods of this season's growth.

THE WALL BELLFLOWER.

The illustration of Campanula Portenschlagiana represents a charming little species from Dalmatia. It is a useful plant for the quick formation of a dense dwarf carpet, and is suitable for almost any position. It

The Wall Bellflower (Campanula Portenschlagiana).

grows from 6 inches to 8 inches high, and has a bell-shaped flower about half an inch in length. Its flowers, which are produced abundantly throughout the summer, are borne in racemes. There is a more robust variety named major. It is a pretty plant also for a pot in the greenhouse, or in a room.

The American Red Oaks.—Amongst trees of large size there are none, perhaps, which are capable of adding so much to the beauty of the autumn landscape as the American Red Oaks. An Oak of great value is Waterer's Scarlet Oak (Quercus coccinea splendens), which is not only the most brilliantly coloured of the American Red Oaks, but has the additional merit of retaining its leaves longer than any. In ordinary seasons they will linger on well into December. Q. palustris (the Pin Oak) and Q. rubra (Red Oak) occasionally colour well, but the latter is generally of too dull a tint to be very effective, and the same has to be said of Q. tinctoria. Q coccinea and its variety are the most brilliant and most consistent in colouring.

GARDEN PESTS.

Apple-tree-stem eaten (*T. Milsome*).—The grub you found in the Apple-branch is the caterpillar of the wood leopard-moth (Zeuzera æsculi). The easiest way of getting at these caterpillars to kill them is by cutting off the branch, but the branch may sometimes be saved by stabbing the insect with a sharp wire, or by slightly enlarging the entrance to the tunnel and pushing in as much cotton-wool or tow, soaked in tar or paraffin-oil, as possible, and then closing the whole with a plug of clay; or paraffin-oil may be injected into the hole with a small syringe with a fine nozzle, and prevented from running out by plug of clay. Plant Montbretias in spring.—G. S. S.

Diseased Violet-leaves (*L. G. Jephson*).—Your Violets are attacked by a fungus, I believe Phyllosticta violæ. Pick off the leaves that are badly infested and burn them, and spray the plants with Bordeaux-mixture, which may be made by dissolving 1½ lb. of sulphate of copper in warm water, slake 1 lb. of freshly burnt lime, and make it into a whitewash about as thick as cream with water, strain it through coarse canvas into the copper solution, and add 11 gallons of water and stir thoroughly.—G. S. S.

Grubs under Apple-tree-bark (*E. Bagot*).—The grubs you found under the bark of your Apple-tree are those of one of the Longicorne beetles, but of which species I cannot say. If you can find the entrance to the galleries where the grubs are, you might stab them with a sharp wire. The holes are probably too small to force cotton-wool or tow, soaked with paraffin-oil or tar, into them. As regards the American Blight, the mixture you have used ought to kill them. You could not have done better, if you have not used too much paraffin-oil, as far as the tree is concerned.—G. S. S.

Destroying mice (*J. M. C.*). — The following recipes are much recommended for poisoning mice, and if you have not already tried them you should do so: 3 lb. of Oatmeal or Wheat-flour, ½ oz. of powdered indigo, 4 oz. of finely-powdered white arsenic, ½ drachm of oil of Aniseed, mixed well together, and add 2½ lb. of melted beef suet or mutton tallow, and work up into a paste; or 1 lb. of flour or Oatmeal, 1 oz. of nux vomica, finely powdered, and five or six drops of oil of Aniseed or oil of Lavender. These mixtures are very poisonous, so should be used with care.

A plague of caterpillars (*W. Wilden*).—I cannot imagine that you would in any way lessen the number of the caterpillars in your garden by planting Elders. When the ground is being dug a sharp look-out should be kept for any chrysalides or grubs which may be turned up, and if, after the operation, Fowls could be allowed to scratch over the soil they would be sure to find many that had not been detected in any other way. The water in which Elder-leaves had been boiled was used formerly as an insecticide, but other stronger compounds have taken their place. It is just possible that the smell of the leaves and flowers may be unpleasant to some moths, and so prevent them from laying their eggs in their immediate vicinity; but I have no reason for thinking that this is the case, and fruit-trees would be much more useful.—G. S. S.

Diseased Hollyhocks (*R. S.*).—Your Hollyhocks are attacked by a fungus (Phyllosticta althæina). Not the fungus which has played such havoc with Hollyhocks in all parts of the country; but, still, a very destructive pest. Another year, if your plants are attacked, as soon as any sign of the fungus is seen spray the plants with Bordeaux-mixture or "Eau Celesté."—G. S. S.

Oak-tree-leaves disfigured (*F. R.*).—The leaves of your Oak are infested with the little galls commonly known as "spangles." You should collect and burn all the leaves. Each of these galls contains a minute grub which will become a chrysalis, from which in the spring will be produced a gall-fly known as "Neuroterus lenticularis." These gall-flies attack the male flowers of the Oak, laying their eggs in the flowers, the grubs hatched from which form the little round galls commonly known as "Currant-galls," on account of their resemblance to a bunch of Currants. The flies which eventually emerge from these galls differ very considerably from those of the previous generation, and are known scientifically as "Spathegaster baccarum." These lay their eggs on the undersides of the leaves, and the grubs form the spangle-galls you find there. It is as well, therefore, to destroy as many of the Currant-galls in the spring as possible.—G. S. S.

HOUSE AND WINDOW GARDENING.

FERNS AND OTHER PLANTS IN STANDS.

THERE are many excellent devices for embellishing dwelling-rooms by the aid of suitable plants. Few plants are so well adapted for this kind of work as Ferns in variety. Wardian-cases have an advantage over many other stands, as their neat and elegant finish, combined with the moister conditions of the atmosphere, ensure healthy conditions for the plants. The smaller Fern-stands answer the purpose very well, but it is not possible to make such a nice display in them as in the former. Ferns particularly succeed better when placed in a window with a cooler aspect, say either north or east, as the light is good from these quarters, and, except in the morning, in the last-mentioned aspect, there is no need to shade to prevent injury to the foliage. Light is essential in successful culture, and for this reason an unrestricted quantity should be obtained as long as daylight lasts. Placed in a south window they are shaded during the warmest part of the day, and consequently are deprived of light. It will, therefore, be seen that a southern aspect is the worst position in which to place the stand. When the plants are in pots they should not be placed in saucers of water. The soil should be kept just moist, and care taken to avoid the silly notion of watering the plants regularly once a day or so many times a week. Only water the plants when they need it, and that is when the soil is getting dry. When the cases or stands are too moist a little ventilation should be given by slightly lifting the Fern-stand on one side, or by opening the door of the cases for a short time. If the plants are carefully crocked at the time of potting or planting there is little likelihood of failure. Small stands should be renewed in the spring of each year, the more roomy cases being allowed two to three years before any interference will be necessary. A good compost for plants grown in Fern-stands and Wardian-cases should include the following ingredients—loam, not too heavy, leaf-mould, sand and peat in equal quantities, with a free use of charcoal, and a small quantity of sandstone all rough and open.

Stand of Ferns and other plants.

SELECTION OF FERNS.

For Fern-stands: Adiantum Capillus-veneris, A. C.-v. grande, Asplenium obtusilobum, A. fontanum, A. tenellum, Davallia alpina, Pteris cretica, and P. serrulata cristata, with the following Selaginellas: S. amœna, S. Kraussiana, S. K aurea (golden), and S. Martensi. For Wardian or Fern-cases those suggested already, and Adiantum affine, A. Mariesi, Asplenium attenuatum, A. Zeylanicum, Blechnum gracile, Davallia bullata, Doodia amœna, D media crispa cristata, Polypodium adnascens, Polystichum setosum, Pteris cretica in variety, Pteris serrulata in variety, and Selaginella gracilis, S. umbrosa, and S. pubescens. D. B. C.

BULBS IN MOSS.

(IN REPLY TO "ELLERSLIE.")

THERE is scarcely a more simple or prettier way of growing many bulbs than in Moss, more especially when wanted for basket decoration. Having seen some showy effects obtained in this way, we give a somewhat full reply to our correspondent.

Hyacinths, Tulips, Crocus, Snowdrops, Scillas, and Narcissus may be grown in damp Moss from the first, but it is better to have them in boxes of very light soil, such as sand and Cocoa-nut-fibre mixed, one-third of the former being used. When the bulbs are somewhat advanced, and you can see which will flower at about the same time, lift them from the compost, shake off as much as possible, and simply arrange them in the basket according to taste, placing damp Moss among them and wedging them into the desired position with the same. Bulbs will last in beauty quite as long when so treated as they would if in soil or water. Of course, you must give an occasional watering, and if you pick out the best and greenest Moss for the surface the effect is heightened. Do not overcrowd. Half the number of bulbs upon fresh Moss look far prettier than a crowded mass of colour.

If the Moss gives a stale smell place a few pieces of charcoal among it, lift off the surface, and give a watering with diluted Condy's fluid. But if you are careful to use fresh Moss and place some charcoal among this at first, there will seldom be any offensive odour. My readers will readily imagine how many pretty effects can be made with baskets, bowls, and vases when arranged in this way, and almost all of our popular bulbs can be grown as described above. If placed into the basket while dormant we seldom get them to bloom uniformly, and, as they are not hurt in any way by careful removal, it is far better to grow them on a little first. Besides this, we do not have the Moss so stale. See that the Moss is of the same temperature as the compost the bulbs occupied.

Propagating Epacris (*Phono*).—If you refer to our issue for May 29, you will find an illustrated article upon the propagation of Genistas, Ericas, and Epacris.

CHRYSANTHEMUMS.

THE USE OF ARTIFICIAL MANURES.

(In reply to "A. E. G.")

With reference to the use of artificial manures in Chrysanthemum cultivation, it is important that a distinction be made between manures and stimulants and their respective uses. A manure is any matter which fertilises the soil to which it is applied, and is something added to enrich that which is poor or exhausted. It will, therefore, be seen that a manure is a plant food, and may be applied in the case of Chrysanthemums, either in the soil when finally potting, or in the form of a liquid later in the season. Many growers use artificial manures very sparingly in their potting compost, preferring instead to apply this plant food at a time when the roots have used up the most important constituents of the soil. Plant food, of a kind such as most artificial manures provide, if mixed with the soil previous to the final potting, often makes a weak or unhealthy plant worse, and in the case of the more robust ones, promotes coarse growth. On the other hand, if the plants be finally potted into a compost of a good kind, but not over rich, artificial manures can be applied at a time when their fertilising properties can be best appreciated. This should be towards the end of July, when the pots should be full of roots and ready to assimilate any liquid plant-food that can be given to them. Commencing their use at such a period, assistance is given to the plants to produce strong and healthy growths, and these in turn develop buds which, in the end, should make flowers of high quality. Manures, either artificial or animal, may be applied in a liquid state until the blooms are well advanced, but if the buds be retained in good time, a long period of feeding while the plants are in the open is preferable to a too free use of this material while the plants are under cover. If the buds are not retained in good time—say before August is out for most sorts—it is useless to expect flowers of good quality from those retained later, although there appears to be a pretty general belief that even if the buds are retained late you may make up for the lateness by feeding the plants liberally afterwards. This cannot be, as, after careful observation extending over many years, I have noticed the buds burst very soon after the plants are housed, and far too soon to derive much assistance in the way of increasing their dimensions from its use. One cannot single out any particular form of artificial manure as being superior to all others. They each have their own special virtues, and several of them are very much alike. A piece of advice which each year seems to be increasingly necessary to give, is never to go beyond the instructions laid down as to their application. In their own interests, the makers would surely go to the utmost limit, so that to increase the quantity in respect to the doses would be a mistake.

Both sulphate of ammonia and nitrate of soda are stimulants, and should only be used to force the flowers out. Extra large buds sometimes may be assisted in their development by the use of either of these stimulants, and late flowers too may be hurried forward, if an earlier display be needed than the plants would naturally give. To apply either of these potent stimulants to a batch of plants which were developing their flowers satisfactorily, in the hope that you would get a much larger lot of flowers, would be a mistake, as instead, you would induce them to fully expand before the florets had properly matured, with a consequent lack of finish. The application of these two stimulants should be made with the greatest care, and should never exceed ½ oz. of either to a gallon of clear water. Always assure yourself that the matter is thoroughly dissolved. Nitrate of soda is much quicker in action than the other, but sulphate of ammonia often gives richer colouring.

Experienced Grower.

NOTES ON VARIETIES.

A. H. Fewkes.—This is an excellent sort for amateur cultivators, because of its very dwarf growth. The character of the flowers is somewhat incurved, and the shade of yellow dense and rich. Its blooms do not grow over large, hence it is comparatively rare as a show kind, although when very well grown it is useful for that purpose. But it is an extra good variety for general culture. It is one of the best to retain its foliage, which is particularly sturdy.

Souvenir de Petite Amie is a first-class variety to flower in October. The flowers are white, large, and slightly incurving in shape; the plant is of a very dwarf and sturdy growth. It flowers most easily, and when these are thinned out but little makes a fine bush specimen. This is a popular market kind.

John Neville.—Among the new varieties of the year this will be esteemed. The blooms are large, the florets being long and drooping. Its colours are a combination of light crimson and old gold. This sort has remarkably fine foliage and is a dwarf grower. As the buds appear late in the season it is necessary to top the plant in March to get it in bloom by November.

Viviand Morel.—This superb Chrysanthemum is a failure in some collections, inasmuch as it refuses to grow properly. The foliage has a tendency to become curled and small, as well as the growth exhibiting a persistent habit of developing flower-buds. When such traits occur it is well to destroy the plants and start again another year with cuttings from a source where the sort has done well. Charles Davis, which is a sport from the variety named, has a similar weakness. So, too, has that splendid Japanese sort, E. Molyneux. Probably the high culture popular kinds are subject to destroys their constitution in time.

Edith Tabor.—When I first saw this variety it appeared to me the most perfectly finished Japanese Chrysanthemum known, an opinion I still hold. The yellow is of a light shade, very clear and rich; the long, drooping, slightly curled florets hang in a way peculiar to this variety alone. It is large, and is easily grown, although the habit of the plant is not of the best. Somewhat tall, with leaves sparse and ungainly, this part of the variety does not commend it, but when the blossoms are produced its ugly growth is forgotten.

Mrs. H. Weeks is undoubtedly a magnificent sort at its best. It requires, however, special treatment to get the blooms in that condition. I have frequently recommended that the plant should be tipped in March so as to get buds to appear early in the season. This mode is a partial failure, as plants so topped have not given flower-buds early enough this season. In the future Mrs. H. Weeks will be struck about February, and grown on with a single stem, and the earliest flower-buds secured. These should come by the end of July. I have recently seen noble blooms produced in this manner. The variety named has white, slightly tinted flowers, with broad, thick petals, and are of remarkable depth. It is a show bloom only. There are better ones for the supply of a quantity on a plant, the latter being rather tall.

Vicomte Roger de Chezelles, which recently obtained a certificate of the National Chrysanthemum Society, is not an amateur's variety—that is to say, it grows too tall. Plants reach a height of 8 feet or more. The blooms, although large, are not especially beautiful in comparison with many other sorts. From early blooms the colour is yellow; later ones are streaked with red.

Mme. G. Bruant, another sort certificated at the recent Aquarium show, is a gigantic flower. The florets are long and droop gracefully. Colour white, tinted pink, the latter shade being bright. It has dwarf, sturdy growth, and is certainly a useful addition.

Australie.—This is a very large Chrysanthemum. The shape is somewhat incurving and most handsome in build. As the outer colour predominates it may be described as pearly-pink, a shade not at all unpleasant; the plant is rather tall naturally. Ours were topped in April, and are bearing fine blooms on stems 4 feet high. It is likely to be very popular as an exhibition kind.

Oceana, like the last-named, came from Australia, and is a splendid variety. The blossoms are composed of thick florets which incurve in an irregular manner, building up specimens of noble look. Colour clear rich yellow. The plant is dwarf, and has leathery, well-developed foliage. This should be added to the choicest selections.

Mme. Gustave Henry belongs to the gigantic Chrysanthemums, and is easily grown. The form is incurving slightly and somewhat flat. It is sure to become a popular sort because it blooms rather earlier than the bulk, and the plant is dwarf with abundant foliage. This is a white variety, not, however, over pure.

Mrs. J. Lewis.—I think most highly of this recently-raised variety. It is pure white, has large, full, and shapely blooms, formed by long, hanging florets. It grows easily, the plant being of medium height, and retains its foliage well.

Pride of Madford (sometimes named Beauty of Teignmouth).—This is a very fine Japanese Chrysanthemum, raised in Australia. The blooms grow extra large, full, and deep. The inner surface of the wide petals is of a rich amaranth colour. From early buds the form has a tendency to incurve, thus exhibiting a deep lilac tint. It is a dwarf-growing kind, and has particularly fine foliage. A sort so easy to grow should be much esteemed by amateur cultivators. There is said to be a "sport" of a crimson-red shade from this variety. This would be welcome.

H. S.

Chrysanthemum Louise.—As an early large-flowered Japanese variety this is certainly one of the best. The flowers are of great depth and very delicate in colour, being of a soft lilac tint. It is inclined to be Japanese-incurved in form, as the petals are apt to turn inwards. The plants are very dwarf, only attaining from 2 feet 6 inches to 3 feet in height, which enables them to be used for floral decorations. It is easily grown, and if the buds are taken early in August, and stimulants used accordingly till the time of showing colour, three or four blooms may be carried on a plant and had to perfection the first or second week in October. It should be grown in a 10-inch pot, and when a collection of early varieties is cultivated this should not be excluded.—W. J.

Chrysanthemum-buds not opening properly (*Perplexed*).—It is rather difficult for us to say why your Chrysanthemum-buds fail to open properly without being able to see them. You may have retained the buds before the time best suited to the variety or varieties, and consequently the buds are now hard and refuse to open kindly. This is a frequent cause of failure, and may be avoided by sending the growths on to the next bud, which invariably develops its flowers with little, if any difficulty. You state you housed your plants at the end of September, so there is no reason for supposing they had been injured by frost. Under the circumstances, therefore, you had better apply a stimulant of some kind, and we know of nothing better than sulphate of ammonia and nitrate of soda. Half-an-ounce together of these dissolved in a gallon of clean water will answer the purpose, and on no account should this quantity be exceeded. The nitrate of soda would act at once, and the sulphate of ammonia in about a week. You may have to remove scales which form on the top of the buds when the latter commence to move, and this should be done with the aid of a pair of tweezers. When these scales are released, we have good reason for believing the florets will develop all right. You may occasionally have to remove a malformed floret or two. Maintain an even temperature of about 55 degs., and then, with the combined forces at work, progress should very soon be reported in the development of these undesirable buds. Repeat the dose of stimulants from time to time, and never let the soil become too dry.

Chrysanthemums for amateur growers (*An Old Subscriber*).—You do well in wishing to confine your selection to those sorts of easy culture, as the names given to you by your gardener friend include sorts which you, as an amateur and novice, are better without. Of the Japanese sorts you mention, we would advise you to secure Joseph Brooks, Lady Hanham, Western King, Lady E. Smith, and Edith Tabor. You might supplement your order with Australian Gold (Calvat's), pale golden-yellow; Emily Silsbury, pure white; William Seward, deep rich crimson; Mrs. E. G. Hill, blush; Mons. Chas. Molin, rich chestnut-red; Mons. Chenon de Leché, pale rose and fawn; and Phœbus, lovely chrome-yellow. This will then give you twelve splendid sorts to go ahead with. You also mention six incurved sorts. You might secure from the list sent to you, Miss Dorothy Foster, silvery-mauve; Rena Dula, as shown by the introducers last season,

looked very pretty, but it is too soon yet to determine its merits. You had better get the following, as they are of easy culture and suited to your requirements: Mme. Darrier, rich yellow, shaded purple-red; Chas. Curtis, rich golden-yellow, retain late buds; Jeanne d'Arc, blush-white, tipped purple; Mrs. R. C. Kingston, pale pink; Mrs. James Murray, bright lilac-pink; and D. B. Crane, bright buff, retaining late buds. These selections will suit the grower for exhibition.

Chrysanthemums, the darkest sorts (*W. Webber*).—The crimson flowers are generally the darkest ones, but these vary in the intensity of their colouring. William Seward is certainly a very dark variety, but the bronzy reverse of the florets often spoils the richness of the colour. Richard Dean also is a rich dark crimson with golden reverse; Mons. Joanne Molin is a rich crimson, making a grand full flower; Royal Standard is another very dark flower, and may be described as deepest crimson. There also are many of amaranth and deep purple colour, but side by side with the former sorts the crimson would appear the darker.

one of recent introduction, and now largely grown and frequently exhibited. This is a very handsome Japanese flower, colour lovely chrome-yellow, and a most consistent sort. The variety should be in all collections. Mme. Carnot is a white Japanese sort of immense size. You ask how many inches a bloom of this variety should be across for exhibition. Certainly not less than 9 inches in diameter, and proportionately deep. The larger you can get the bloom the better, so long as you combine with this quality purity of colour, freshness, and evenness of form.

Chrysanthemum Emily Silsbury.—This is a large pure white Japanese flower, with long, drooping, and gracefully curling petals, and at the recent show of the National Chrysanthemum Society was very fine. For September, October, or November flowering it is equally well adapted, and for those needing an easy sort to grow this is likely to suit them. Some of the blooms of this variety have been equal to those of Mlle. Thérèse Rey.

THE MEXICAN ORANGE-FLOWER.

This sweetly-scented flower, known botanically as Choisya ternata, is not very hardy in England though hardier than many suppose. It is a

Mexican Orange-flower (Choisya ternata).

Chrysanthemum queries (*W. Webber*).—It would be unwise for you to mix pigeons'-manure with your Chrysanthemum soil next year. This is a most powerful manure, and as it would be difficult to so thoroughly mix this with other ingredients of the compost, so that it may be evenly distributed, you would be well-advised not to use it in the form you suggest. A far better method would be to place the pigeons'-manure in a small bag or sack, and allow this to soak in a tank of water, and then to water your plants with it during the period the buds are developing. Half a peck of this manure to, say, thirty-six gallons of clear water, and a similar quantity of soot, make a capital plant-food and stimulant. Soak these manures for five or six days, and when watering with the liquid add a third more water, taking care to mix thoroughly before using. Niveum (the correct way to spell the name) and Niveus are the same. There was a Phœbus introduced in 1886, and, we believe, raised by Mr. A. Salter, which was a rich golden-yellow, of medium size, and Japanese-reflexed in form. This variety flowers rather early in the season. The Phœbus which you have in your mind is more probably luxuriant leafy shrub, with bright green ample foliage and an abundance of fragrant white flowers, not unlike those of Orange-blossom—hence the popular name. It is often very happy against a south wall, and is a delightful shrub for the southern counties.

Caryopteris mastacanthus.—This is one of the shrubby members of the Verbena family and a native of China and Japan. Flowering as it does so late in the year as October, it is worth attention as one of the few of which so much can be said. It grows in this country to a height of 2 feet to 4 feet, the leaves being hairy, deeply toothed, and oblong-lanceolate. The flowers appear in compact rounded clusters that originate from the leaf axils at the upper part of the stem. The blossoms are of a bright purplish-blue, the large bottom division of the corolla being slightly fringed. In the south-western counties this plant would probably thrive to perfection, but as far north only as London it requires to have a specially selected spot. The foot of a south wall is as favourable a place as any. It dies down in winter, and after it has done so the roots may be covered with a few inches of litter. It appears to be hardier on certain parts of the Continent, where the winters are more severe than ours, but in this it only furnishes one more example of the well-known fact that in places where the summer is brighter and more prolonged a plant is enabled to withstand a much lower winter temperature than where the summer is cooler and damper. The species was introduced by Mr. Maries from Japan about sixteen years ago, but it was originally brought from China by Fortune. Fortune's plants, however, appear to have been given greenhouse treatment, and before long disappeared from cultivation.

INDOOR PLANTS.

BEGONIAS FOR WINTER FLOWERING.

It is not often that one sees these so well grown as they should be; indeed, in many gardens they are not found at all, and yet their culture is not difficult. In the form of vigorous, compact, well-flowered little specimens, they are of much service for window or conservatory decoration, or for brightening up plant stoves during the winter months. There are few more cheerful objects than well-bloomed plants of Begonia Ingrami or B. Weltoniensis, and where flowers at Christmas-time are in demand these two kinds should certainly be grown. Easily-grown as the plants are, many, I think, fail to give them the treatment that they need during the summer. Light, air, and rich food are required to bring them up to the desired standard of excellence, and these essentials are generally absent in a more or less degree when grown amongst the general occupants of a warm-house. In the all-important matter of culture,

Early Propagation is indispensable. The cuttings should be taken off by March at the latest, inserted singly in small pots, placed in a warm, close place until rooted, and then they should be shifted on as required, keeping them well up to the light, pinching back the most prominent shoots now and then, and maintaining the temperature around them at about 55 degs. to 60 degs. by day, but admitting enough air to prevent drawn growth. By the beginning of June the vigorous little specimens that such treatment will have produced should be placed either in warm-frames or in a light, well-ventilated house. About the latter end of the month just named shift into 4½-inch pots; some of the largest will go into 6-inch pots. The soil should be rich and free—a good mixture consisting of loam, leaf-mould, and well-rotted manure in equal parts, adding thereto a good dash of sharp silver-sand. Give plenty of air, shade from hot sun, and if the plants are in frames run off the lights at nights when balmy weather prevails. A little of such exposure will impart to them a large amount of vigour, and the flowers will come much finer than when they are never exposed to the full influence of the open air. When the pots get full of roots a little weak liquid-manure should be occasionally given, the great point being to keep the plants well in growth until the middle or latter end of September, after which time they should be placed in gentle warmth, a light house which can be comfortably heated in cold, dull weather and at night being the right place for them. From November onwards a constant temperature of not less than 55 degs. is necessary to keep them in a healthy flowering condition. These winter-flowering Begonias may be well and easily grown by planting them out in frames for the summer months. Make up a bed of good soil in a light frame, and plant out the first week in June, potting them up again about the middle of September, or earlier if they are large enough. In planting out a richer compost can be given them, as there is not much danger of its becoming sour through overwatering, so that if anything like good treatment is afforded them they will be sure to make very luxuriant growth. Now as to the

Varieties to grow.—There is a class of Begonias, of which B. manicata and B. hydrocotylifolia may be cited as examples, not much grown, but which are well worthy of some attention from those who experience the need of cut flowers in winter and early spring. The flowers of these kinds are by no means brilliant, but they possess considerable grace and

delicacy of form and colour, are charming in a cut state, and form a pleasing contrast to bright-hued flowers. As fine-leaved plants they have also considerable value, thriving better than most things in the dry air of a constantly-heated room; indeed, they should be more used than they now are for the decoration of apartments, as if carefully watered they will last for some months in good order. All the species grow freely, only needing generous culture and plenty of light to ensure success. There are several: B. manicata, B. insignis, B. semperflorens Saundersi, and B. nitida, as well as those kinds first named, that are all valuable for winter work. B. manicata is quite an ornamental plant without flowers, as it has large bold leaves of a peculiar shade of colour and very glossy, each leaf bearing a number of brownish coloured protuberances on the under side. The flower-stems grow about a foot or 18 inches high, and terminate in a loose, spreading panicle of lovely pale pink blossoms, which from being so light and graceful look well in bouquets. B. insignis is of a different style of growth altogether, as it runs up with long, thin, erect stems, which branch but sparely and have small foliage. What makes it so valuable is its freedom, and it is hardier than most other sorts, as it will stand and bloom well in a small room or greenhouse. B. semperflorens Saundersi is, as its name implies, a perpetual bloomer. When well grown it is especially useful for vases, baskets, or for placing in elevated positions, as being naturally drooping it then shows itself to advantage. Not only is it continuous in blooming, but it flowers at every joint of the shoots, and the blossoms being of a bright coral-red are very showy. During summer it does well in a warm greenhouse or conservatory. B. nitida is a fine species which flowers very freely when well treated throughout the whole of the winter months. H. B.

NEGLECTED GREENHOUSE PLANTS.

Francoas.

These herbaceous plants are natives of Chili; they are nearly hardy, and will do well in a cool greenhouse. Although they have been long known in this country, they are rarely met with; yet they are of great merit, especially Francoas, or Maiden's Wreath, as it is sometimes called. Where a sufficient quantity of this kind is grown to admit of its being freely used, its tall, slender flower-stems produce a telling effect. Francoas are easily raised from seeds, which may be sown in the months of February and March—onwards to midsummer—but the earlier period is the best, as then the seedlings have all the season before them to attain strength. The seed should be sown in a well-drained pan filled with sifted peat, to which enough sharp silver-sand has been added to keep it open, pressing the soil down smooth, not sowing the seeds too thickly, and only just covering them with a little of the finest soil. Before sowing see that the material is moist enough without being too wet. Put a sheet of glass over the top of the pot or pan in which the seed is sown; this will help to keep the surface damp, and so avoid the necessity for giving much water until the seeds have vegetated. Stand the pan or pot in a temperature of 50 degs., which will be quite warm enough. As soon as the seedlings make their appearance dispense with the glass over the pot; give water as required, standing the plants where they will get a fair amount of light. When they are large enough to handle prick the seedlings out about 2 inches apart in large pans of well-prepared soil; either peat or good loam will answer. If the latter is used, in addition to some sand, add one-sixth of leaf-mould. They will grow faster for a time this way in pans, than if put at once singly into small pots, on account of the soil being more easily kept in right condition as to water. By the end of May remove them to a greenhouse or frame, keeping them moderately moist and giving air daily. Before the plants get crowded together place them singly in 4-inch or 5-inch pots, and encourage them to make growth, Some of the strongest plants will most likely want to produce flower-spikes towards the end of summer, and if flowers are needed they may be allowed to bloom, but if the object is to get the plants as strong as possible the second year, it is well to pinch them out; if, before the autumn is too far advanced, any seem to be short of root-room, give them pots 1 inch or 2 inches larger, encouraging them to root in the new soil before winter, during which season they will do anywhere out of the reach of frost, keeping them a little drier at the roots through the dormant time. In the spring those that were not potted in the autumn must be shifted, regulating the size of the pots by the strength of the plants. This season they may be expected to bloom well. I have found that at the time the flower-spikes were about to make their appearance they were much strengthened by weak manure-water once a week. F. ramosa is the best known, and may be looked upon as the handsomest and most useful kind; its pretty white flowers stand out conspicuously amongst anything else with which they are associated. Francoa appendiculata bears reddish-crimson flowers, and makes an effective pot-plant. B.

WINTER-FLOWERING ZONAL PELARGONIUMS.

Zonal Pelargonium blossoms in winter are now looked upon as a necessity in most gardens; in fact, we get a colour in the Zonal Pelargonium which no other winter-flowering plant gives us, and when arranged in a cut state in a free and natural manner, as shown in the annexed illustration, they are most effective. The first important matter is to select varieties which are short-jointed and sturdy. The colour is optional. Many prefer scarlet varieties to all other colours, possibly because the latter can be found in plants of other kinds. With regard to the culture required, which is very simple, I have found the plants to succeed best when the cuttings are struck at the end of August or early in September, and I prefer to put the cuttings singly into very small pots in sandy soil, placing them in a pit or frame, and by keeping a little close and slightly shaded for a week or two they soon root. When the little pots are well filled with roots in October I shift them on into 3-inch pots, using a compost consisting of two parts loam and one of leaf-mould and decayed stable-manure from a spent hot-bed, and a liberal sprinkling of silver sand. After potting do not give much water, only just sufficient to keep the soil moderately moist. This rule should be followed throughout the winter. When growth commences again after this potting pinch out the points of the little plants, and this will induce them to form bushy little specimens. The best place to winter them in is on a shelf or stage in a dry, light, and comfortably warm greenhouse, the object being to keep the plants growing very steadily on through the winter. In the end of May or early in June give the plants their final shift into 6-inch or 7-inch pots, using the compost as previously recommended, drain the pots well, and ram the soil in very firmly around the roots. All that is necessary after the plants are in their flowering-pots is to set them on a bed of coal-ashes in a sunny spot in the open air, and attend well to watering and stopping the shoots and nipping off all flower-buds that show themselves, till the end of August, when the two latter practices should be discontinued. House the plants as soon as the nights begin to feel chilly, and continue giving them plenty of air as long as the weather is favourable. When dull and cold increase the temperature, which should range from 50 degs. at night to 55 degs. to 60 degs. by day, with a little air on the house at the top and sides also unless it is windy. The house in which Zonal Pelargoniums are placed for winter flowering should be a light, well-heated, and ventilated structure. In watering care must be taken not to wet the foliage more than is possible, and a little weak, clear guano-water occasionally given will be very beneficial. Under this treatment there will be no scarcity of bloom throughout the winter. As regards varieties, amongst the many now in cultivation, and which are all more or less good, the following well-tried kinds may be selected with perfect confidence: Vesuvius, F. V. Raspail, Wonderful, and Silvio in the scarlet section; Olivia Carr, Lady Sheffield, and Rose Rendatler are good pinks; Joan of Arc and Eureka are among the best of the whites; and President Thiers and Sophie Birkin are good salmons. Other very desirable varieties are: Henri Jacoby (a splendid kind), John Gibbons, Colonel Seely. H.

Winter-flowering Zonal Pelargoniums.

Watsonias. — These are very capricious bulbs with regard to flowering. For some years I was fairly successful with the common scarlet outside, in pots, during the warm months. This is a plant which covers rocky hill-sides by acres in South Africa. Then I raised a number of strong specimens of the snow-white variety from seeds, and these have never flowered; so I put them out in a border, last autumn, to take their chance; they made a good clump of foliage during the past summer, but never formed a bud. About two years ago a lady in South Africa sent me some unnamed bulbs of a "very pretty flower" she found. I duly potted them, and placed them in a cold-frame, only removing

to the open in sunshiny weather. Last month I noticed a rapid increase of growth, and placed them near the glass of my greenhouse, where they are now commencing to unfold attractive spikes of a rich rosy-salmon hue.—W. H. L., *Cumberland.*

ORCHIDS.

SEASONABLE ORCHID NOTES.

In almost every garden where Orchids are grown the deciduous Calanthes, as C. Veitchi, C. vestita, C. v. rubro-oculata, C. v. luteo-oculata, &c., find a place. These plants are now sending up their flower-spikes, and in order to obtain flowers that are of good size and rich in colour they should be exposed to the full autumn sunshine. Until the first few flowers open the plants will require water whenever they become dry, but afterwards it should be gradually diminished altogether. Plants of Dendrobium nobile that are now at rest should be in a cool, dry temperature, and watered often enough to prevent excessive shrivelling of the pseudo-bulbs. D. Wardianum should be treated exactly the same way. In the cool-house the Odontoglossums are growing vigorously, but they must not be overwatered or their roots will decay, and the tips of the foliage turn black. Keep them moderately moist. Fire-heat will not be necessary unless frost is expected, or the temperature of the house is likely to fall below 50 degs. Examine the plants every night for slugs, or many spikes and roots will be lost.

W., *B.*

Stimulants for Orchids *(E. F., Quebec).*—It is not necessary or advisable to afford manure of any kind to Orchids coming into flower. As a rule, Orchids generally thrive better without stimulants; but there are a few species, as the deciduous Calanthes, strong-growing Phaius, and Cœlogyne cristata that appreciate manure-water during the height of their growing season, but it should in all cases be discontinued on the completion of the new growths. Weak liquid cow-manure is the safest stimulant to use; about one part of the liquid to three of water should be applied at first, then as the plants strengthen increase the dose to one-half of each. Avoid all manures that are chemically prepared.

Treatment of Cattleya citrina, etc. *(Rock).*—Your method of treatment *re* Cattleya citrina is quite right. It is a species that requires but little water at any time, and especially during the winter months, affording just sufficient to keep the pseudo-bulbs plump. Being suspended close to the roof of your cool greenhouse, it should be fully exposed to the sun during autumn and winter. In summer it should be thinly shaded from strong sunshine. Roots that show no signs of vitality should be cut off. C. citrina usually blooms during the months of April and May. Dendrobium infundibulum is an Orchid that has generally fared badly under cultivation, principally through growing it too warm. Its native habitat is on the mountains of Moulmein, at nearly 5,000 feet elevation, where the temperature ranges from about 70 degs. in the shade at mid-day to about 40 degs. during the night. Therefore in summer, under our artificial treatment, the Odontoglossum-house is the best place for it, but during the winter months, the plant being in full growth, it should be placed at the coolest end of the intermediate-house. Like other nigro-hirsute Dendrobes, it should not be exposed to strong light at any time. Pot the plant in pots that are well drained, and use only a very thin layer of peat and Moss to root it in. A moist atmosphere is essential at all times, especially during the growing season, and abundance of water at the root; at other times the soil should be kept just moist. Its flowering season is from March to May.

Epidendrum vitellinum majus *(Rock).*—This generally does very well in a light, airy position in the cool or Odontoglossum-house. It may be grown either in a pot or suspended to the roof in shallow pans, and much moisture is required at the root during the growing period, but when at rest very little is needed to keep the bulbs plump. The flowering season is April and May, after which the plant may, if necessary, be repotted. When repotting it is advisable to use pots as small as is possible to get the plants into, and the compost of peat and Moss should be made porous by intermixing with it pieces of crock or charcoal, for although the plant delights in plenty of water while growing, it should pass away quickly, otherwise the roots will decay. This bright-flowered species is well worthy of culture, especially where cut flowers are in great demand; the flower-spike when cut will last for several weeks in good condition. The plants also produce a splendid effect when arranged with the crispum section of Odontoglossums.—W., *B.*

PROPAGATING.

SOME FLOWERING AND OTHER DECIDUOUS SHRUBS.

Now is the time to root such shrubs as the Flowering Currants (Ribes), Bush Honeysuckle (Weigelas), Deutzia gracilis, Guelder Rose, Forsythia, Honeysuckle, and plants of similar habit.

Select pieces of this year's growth and cut them into lengths of 6 inches or so, taking care that the bottom is just below a joint or pair of leaves. You can easily regulate the length of each subject so that all of that kind are of one length. This will greatly facilitate insertion.

Choose a piece of good and light loam. If not light add sand. Clean it well, dig over a portion, then set a line and cut down with the spade to sufficient depth to allow of each cutting just peeping out of the ground. The base must rest firmly upon the soil, and it pays to take the little trouble of placing sand, or at least a sandy compost, at the bottom of the trench before setting in the cuttings. These should be from 4 inches to 6 inches apart, according to the strength of growth. For instance, put the Deutzia gracilis 2 inches, and the Ribes and Forsythias 6 inches. Now fill up to the cuttings with more of the soil, and tread this firmly to them. Dig again until sufficient has been turned over to give space for another row. Here, again, the distance must be according to strength of plant. Deutzias may be 6 inches from row to row, but the Ribes and Forsythias will need 15 inches to 18 inches. Set the line and cut down as before, continuing this process until all the cuttings are in. Do not let the cuttings lie about and get dry at the base before inserting, and always choose healthy wood that is just matured.

Keep clean from weeds, and use the hoe freely during summer. The following autumn lift and transplant where needed.

CARPET-BEDDING ILLUSTRATED.

If anyone wishes to see this in all its horrors and ugliness, he may do so in the *Strand Magazine* for October in an article by Oliver Thorne. People may see from that to what degradations tinkers', pastrycooks', and decorators' idea of gardening may bring an art which a great writer has described as the "purest of human pleasures."

Some of the illustrations, such as a "Floral Elephant," South Park, Chicago, "Presidential Canoe," in the same place, and "The Gates Ajar," Washington Park, Chicago, are painful to see. As to how these things arise, the writer says:—

"First, the idea is germinated in the brain of a clever gardener. Then comes the selection of the different plants, which are carefully tended through the winter; and after that the framework is made. This takes some time, and depends, of course, upon the elaborateness of the design. Then follow days and days of manual labour, arranging the plants, nipping off ambitious blossoms in order to keep the surface smooth, and giving the work its finishing touches. The presence of a framework is plainly visible in our illustration of "The Gates Ajar," another splendid specimen of carpet-bedding in the same park. It is perhaps needless to say that "The Gates Ajar" is another way of expressing the doors of Heaven, and it is interesting to note how such a subject appeals to the Chicago mind."

This is the way the writer talks about a wretched imitation of a man in a canoe—as idiotic in idea as ugly in effect. Here is the description:—

"The canoeist is not a remarkable creation, however, as the figure is rather stiff, and the features a little unnatural. It is sometimes wonderful how closely the American gardeners can copy Nature in reproducing the human features. In some of the parks in the United States the heads and bodies of different noted men are taken as subjects for carpet-bedding, and reproduced with such skill that not a prominent line of the face is missing. The proportion between the features is skilfully maintained by constant care with the scissors, and the success of the design is proved by the readiness with which visitors recognise the subject."

We heartily agree that the canoeist is not a remarkable creation, but it is sad to read drivel of this kind, which we are apparently asked to take seriously. We have never seen anything much uglier than what we suppose is a figure of a man "fleeing from Old Father Time"—another Chicago monstrosity, worse even than the "Floral Mound" at Ohio. We are sorry to see that in England the present year has been fruitful in scrolls, figures, and crowns. It is not necessary to blotch our public parks and gardens with paltry figure-work of this kind. In carpet-bedding we see flower forms levelled and clipped into unnatural shapes or planted in set design, merely to create a certain crude colour effect. The beauty of the flower or form of the plant is not in the least considered. Coloured bricks and stones might be set out just as well, and some twenty years or so ago were in common use for the purpose. This is not gardening, but degrading a beautiful art to its lowest depths, painful to the artistic sense, and thrusting out a hundred handsome flower forms from their rightful place.

LAW.

Killing ferret in Fowl-house—My neighbour's ferret got into my Fowl-run, and I killed it. Can he sue me for damage?—G. H.

*** If the ferret had attacked your Fowls and you could not drive it off them, or if you caught it in the act of killing a Fowl, you were justified in killing it. But if it had done no harm, and you killed it instead of frightening it away, you are liable in damages. Much will depend upon the circumstances referred to, and from the bald statement you give I can form no positive opinion as to your liability.—K. C. T.

Validity of agreement *(A. W.).*—The agreement of which you send a copy is valid in itself, but before it could be received in evidence in any court it would have to be properly stamped or the penalty of £10 paid. As the rent is £13 a year the agreement should bear an eighteenpenny impressed stamp, and the penny stamp upon it is of no validity whatever. As a month has passed since it was signed, it can only now be stamped on payment of a penalty, but as the month has only just passed the commissioners will probably, on application, remit the whole, or practically the whole, of the penalty. To get the document stamped it should be sent to Somerset House, London. But the simpler way would be to make a new agreement, writing it upon an eighteenpenny impressed stamp, which may be got from any stamp office; but if a new agreement is made it would be much better to word the rent clause thus—"Rent £13 per annum, to be paid monthly, clear and free from all deductions whatsoever (landlord's property tax, tithe, and land tax excepted)." If there be neither land tax nor tithe these words could be left out. It would also be well to state what notice to quit is to be given. If nothing is stated, and the garden is not a market garden, half-a-year's notice will be necessary; if it be a market garden a year's notice will be necessary. It will be much better to state what notice shall be necessary, and whatever notice may be stated in the agreement will be necessary and will be sufficient.—K. C. T.

A gardener's notice.—A year and a-half ago a gentleman engaged me as gardener, with the right to occupy a lodge. Wages have been paid weekly, and there was no bargain as to notice to leave. From time to time I have bought various plants for the greenhouse and conservatory and paid for them out of my own pocket. Will you tell me (1) When my service terminates shall I be at liberty to remove the plants referred to? (2) What notice to determine the service must I give or must be given to me? (3) Can I be compelled to leave the lodge at a week's notice?—Roger.

*** (1) If the plants, etc., were ever given by you to your employer you cannot remove them. It is not likely that he will attempt to hinder their removal, unless he considers that he has in some other way compensated you for your outlay. A gift, even by a servant to a master,

cannot be recalled without the master's consent. If there has been no such gift, you may remove the plants when you quit. (2) A gardener is a menial servant, and as such, when there has been no express bargain as to notice, is entitled to a month's notice from his master, and he must also give his master a month's notice if he wishes to determine the service. (3) You cannot be compelled to quit the lodge at a week's notice, but when your service as gardener ends, so will your right to occupy the lodge.

PHOTOGRAPHIC COMPETITION.

*** *We beg to remind our readers that the Photographic Competition will close on Saturday, October 30th, and therefore all intending competitors should send in at once.*

RULES FOR CORRESPONDENTS.

Questions. — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2062—**Dwarf Japanese trees.**—I am getting a couple of old dwarf trees from Japan in pots. Would you kindly tell me what treatment I should give them?—T. G. A.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2063—**Persian cat** (*Mab*).—The question deals with a subject outside the scope of this paper.

2064—**Lilium candidum** (*O. F.*).—You will do better not to disturb these Lilies, but simply cover with a few sifted ashes. They object to much interference.

2065—**Croton-leaves falling** (*L. W.*).—We think it most likely that you are giving too cold water to the roots. It is a frequent mistake during late autumn and winter. Too strong liquid food would also cause the leaves to fall.

2066—**Propagator** (*Quebec*).—Too much for ordinary subjects, which would do better with a bottom temperature of 70 degs. to 75 degs., and a surface heat of 60 degs. to 65 degs., and many would root in a temperature of 10 degs. less.

2067—**The Vallota** (*A. Whitehill*).—You should not have cut off the leaves so hard. The Vallota enjoys a warm and dry spot during the summer, and will then seldom fail to flower in autumn. The bulbs must become partially ripened.

2068—**Michaelmas Daisies, etc.** (*Jersey*).—You would do far better to take off a few of the sucker-like growths and root these. Hydrangeas root more freely when helped by gentle bottom-heat, and no time should be lost in the operation.

2069—**Anemone japonica alba** (*Puzzled Dolly*).—This plant requires a deep rich soil and plenty of moisture during the summer months. Your plant must be in very poor condition to be only a foot in height. Rich soil is essential to healthy robust growth.

2070—**Keeping Heliotropes in unheated house through winter** (*A. E. G.*).—Keep them rather dry at the roots and dormant. Stand as far from the glass as possible during sharp frost, and next spring you will find them coming into new growth once more.

2071—**Gooseberries for flavour** (*Mrs. U.*).—If you do not mind size, the old "Yellow Rough" Gooseberry is an excellent variety of good flavour. The Red Warrington, Rosebery, and Rough Red are very good too. Red Warrington and Rosebery (green) would suit you well.

2072—**Dwarf Roses** (*Grenadine*).—We fear you are not a very constant reader, as our opening article in the issue for October 2 tells you all you require, and it is almost entirely devoted to your question. Two feet apart is too close for extra strong growers needing to be pegged down.

2073—**Unsatisfactory Eucharises** (*Wilson*).—You have the Eucharis-mite in your bulbs, and must remove all the present soil, pick off loose parts of the bulbs, and thoroughly cleanse them with an insecticide; but it would probably be wiser to burn them and procure clean tubers.

2074—**Peaches as cordons** (*F. J. Davis*).—We cannot recommend you to grow Peaches as Cordons, nor would they be likely to do unless full light could reach them, and the Tomatoes would shade at the very time sun was most wanted. Far better to grow more Tomatoes upon the back wall.

2075—**Orchids in fernery** (*Bromley*).—Several Orchids would do in such a temperature, especially from the Cypripediums, Dendrobiums, Lycastes, Masdevallias, and Odontoglossums. Get Mr. Burberry's latest edition of "Orchids," post free, 5s. 6d. Almost any good nurseryman can supply this work.

2076—**Palms with seedling Maiden-hair Ferns in pots** (*W. G. Watson*).—One subject will not harm the other, and while both thrive the combination must be rather pretty. Unless you wanted a few Ferns, we would not meddle with them; but if you do, lift out the largest carefully and pot them on.

2077—**Mimosa** (*Bellfield*).—We cannot account for your Acacia (popularly called "Mimosa") not flowering when it is growing so healthily. There are several species and varieties, but all should flower under the conditions you name. We would certainly not prune away healthy wood, and do not treat quite so generously.

2078—**Plants for greenhouse** (*X. Y. Z.*).—You could not possibly get market produce in sufficient quantity from so small a house. Bulbs of many kinds, Zonal and Ivy-leaf Pelargoniums—heaps of subjects could be grown. But why not use it as a means of renovating your room plants, and keeping up such a welcome supply?

2079—**Osiers** (*C. E. L.*).—Mr. Baillie, of Messrs. Dickson's, Chester, wrote an excellent work on Willows about three years ago, which seems to be just the thing you are looking for. It contains a list of all useful varieties, with cultural details, etc. We believe it is issued from the Board of Agriculture, and the price is very moderate.

2080—**Garden books** (*Inquirer*).—The best book we know of specially devoted to fruit-tree propagation—viz., budding and grafting, is "Baltet's Art of Grafting and Budding," price 5s., and the very best book on market gardening is by C. W. Shaw. Apply for both to the publisher at the office of this paper, 37, Southampton-street, Strand, London, W.C.

2081—**Greenhouse stove** (*W. S. R.*).—Yours is a peculiar stove, as no fire can draw without some draught, and it also seems to us that you would get the whole of the dry and parching heat hot-water pipes are used to prevent. We can only advise you to call in a practical ironmonger or tinker, as we do not recognise the stove, and cannot help you without seeing it.

2082—**Carnations not flowering freely** (*O. F.*).—It is not possible for us to tell a border from a Tree-Carnation from a bloom only. We expected you to say which section you had. Apparently yours is an indifferent seedling of the border section, and we should leave it outside, considering your position. It is certainly not worth frame or house room, and its not flowering freely is only another of its bad defects.

2083—**Tulips in beds** (*F. G. Harris*).—Plant the Tulips at once, but keep the Crocuses out of ground until middle of December. This is as long as is safe, and even then you will scarcely get them so late as the Tulips. Why not plant all now, and have a pleasing band of yellow early? The Crocus grass would still form a pretty edging when the Tulips were in bloom.

2084—**Bignonia-buds dropping** (*East Sussex*).—Evidently your plant has received a check of some sort. It may be that the roots have penetrated into soil which is not favourable to its proper development. Another frequent cause is dryness at the roots about the time the buds begin to swell. Cold winds may also to a certain extent be answerable for the mischief.

2085—**Pruning common White Jasmine** (*M.*).—The common white Jasmine does not as a rule require much pruning, but when it does late summer or early spring is the best time to do it. As it is a summer-flowering plant, pruning should always be conducted after its flowering season is past. Simply cut out the old wood and shorten back the more vigorous growths.

2086—**Herbaceous plants to show in September** (*E. R.*).—Aster Amellus bessarabicus, Kniphofias (Tritomas), Lobelia fulgens or its varieties (that called Queen Victoria is very handsome in leaf and flower), Anemone japonica alba (White Japan Windflower), Hyacinthus candicans, Montbretias, Phygelius capensis, Perennial Sunflower Miss Mellish, Physalis Franchetti. If bulbs are not wanted, exclude the Hyacinthus.

2087—**Greenhouse for Roses and Carnations** (*Amateur*).—Your plan is a good one. Plant the Roses into the borders, but keep the Carnations in pots. Stand these upon the outside walls of the borders, and also around the centre border, which at present you have marked for Roses only. Roses and Carnations go well together, and we shall shortly publish an article upon their culture.

2088—**Treatment of small garden** (*A. N. Burdin*).—We fear you will not be very successful with flowers in so shaded a garden. But upon the other walls Roses, Clematis, and Jessamine would do well, with such summer flowers as Begonia, Zonal Pelargoniums, etc., upon the borders. We presume the trees are beyond your jurisdiction; otherwise we would curtail them somewhat, as not only do they make that border and wall useless, but rob the soil as well.

2089—**Polyanthus Narcissi flowering now** (*E. A. L.*).—It would have been better if you had picked off the bloom-spikes from your Polyanthi as they appeared, for the perfecting of bloom must weaken the plant more or less; still, if they have not flowered profusely, they will probably bloom in their new situation during the spring. In the culture of such subjects, vigorous growth should be aimed at, as, while this is in progress, the plants make no attempt to flower, which is the precursor of the final effort of their lives—namely, the production of seed.—S. W. F.

2090—**Celery** (*J. O. H.*).—Generally white kinds of Celery are preferred at the summer or early autumn shows and red ones at the November shows. Much, however depends on the tastes of the judges. Much more, however, hinges on how the Celery is grown, blanched, and presented; whether clean, stout of stem, firm, crisp, and has good solid well blanched hearts. You will certainly find both of Dobbie's varieties good. The injuries you have noticed in Celery-stems is usually caused by the grubs and slugs in the soil. The use of a little fresh soot or slacked lime, strewn over the soil as earthing proceeds, is often found efficacious in preventing insects from doing harm.

2091—**Brugmansia, Passion-flower, etc.** (*A. L. O. E.*).—Your Brugmansia is probably too well fed. We doubt if you will get flowers now, but next spring. Prune rather close, and do not be quite so generous. You have made the same mistake with Constance Elliot Passion-flower. Do not prune it, except to thin out where very thick. It is generally a free bloomer. There is nothing you could have better than Hyacinths or the Chinese Narcissus Tazetta. So long as the Nerium Oleander thrives and blooms without getting too unwieldy, why prune? You can cut back at any time after the bloom is off if too large, nor does it matter what wood is removed.

2092—**Bulbs** (*H. A. E.*).—There is no necessity for you to cover the bulb bed with Cocoa-nut-fibre, though a mulch of 2 inches in depth would do good rather than harm. The bulbs will not be killed by the frost, but any flowers that have appeared before the frost sets in will be cut. If no flowers have pushed up before the arrival of frost they will not appear until it is past; but if they are already in evidence at the advent of the frost, they will be injured whether mulched or not. Of course, the Cocoa-nut-fibre would shelter the blooms until they were 2 inches out of the ground; but when they are so little advanced as this they stand a severe frost with impunity.—S. W. F.

2093—**Parsnips** (*S. S.*).—The injury to your Parsnips you describe as "cancer" is doubtless produced by a fungus, which, preying on the flesh, causes it to turn black, especially about the top or crown. This is not an uncommon evil in stiff land that is retentive of water. There is no better remedy than in adding to the soil several inches of fine gritty soil from roads or other similar substance, and where seed is to be sown have the bed so much raised and rounded, as in that way water is more quickly thrown off the surface. We should also advise strewing over the bed so soon as seed is sown, ere it is covered in, some fresh-slaked lime, and a similar dressing might be given when the plants are strong, just before they get a good hoeing.

2094—**A young Vine** (*W. H. E.*).—Cut back your Vine to about 3 feet of the stoutest of this season's growth. This part of the rod, however, must be well ripened—that is, brown in colour and very firm—or it will not carry fruiting shoots. As to how many bunches of Grapes should be carried, much depends on the stoutness and hardness of the present rod. Probably three large or four medium-sized bunches would be ample. Do the cutting back as soon as the leaves have fallen, and the cut end will have formed a hard callus before the spring comes. There will be no waste of sap by bleeding when growth begins, as so commonly happens when the pruning is left until the end of the winter. When the bunches fully show, preserve the largest and remove all others.

2095—**Young Plum-trees** (*X. Y. Z.*).—Presumably your young Plum-trees are planted against a wall, and are to be flat trained. You do not say, but we infer such is the case. That being so, and assuming that your trees have four or five strong shoots, you wish to make these the foundation of good large trees in the future. To get that, cut back your shoots later on in the winter fully one half, and thus induce the breaking from each of three other shoots at least. Then you get enough of branches to gradually form a fan-shaped tree from each planted, and will need later only very moderate shortenings of the branches, and the cutting out of all weak cross branches such as do not favour being properly nailed in, or may detract from the appearance of the trees.

2096—**Flowering Peach-trees** (*B. G.*).—Assuming, as we gather, that your Peach-trees—or are they Almonds?—are growing in a shrubbery solely to give bloom in the spring, little pruning is needed. All that is desired is that a few of the weaker shoots that cross one another or crowd the tree should be cut out occasionally, and any unduly long-growing branches shortened back a little to keep the head fairly close home. Indeed, were the trees grown to fruit as standards, which we cannot admit to be the case, the pruning would have to be as thus described. As to pruning a Cedar of Lebanon, unless some of the branches are growing out of form, that can hardly be needed. If the tree be dense now it will get thinner as it grows larger. Remove only any ungainly branches.

2097—**Cosmos bipinnatus flowering late** (*E. A. L.*).—When treated as an annual Cosmos bipinnatus often fails to flower before the autumn, especially if a damp summer is experienced, as in such a case no check is given to the growth. To ensure flower, the best plan is to plant in rather shallow soil in a dry and sunny situation. In such a site the plants will not reach the size they would attain under other conditions, but, maturing earlier, will usually bloom before summer wanes; especially will this be the case in a dry season. Probably the best way to treat this subject is as a biennial. By sowing in July, large plants will be formed that will bloom freely during the succeeding summer. This Cosmos is so beautiful that it is well worthy of a little extra trouble in arranging for its culture.—S. W. F.

2098—**Heating small conservatory** (*Novice*).—The worst of hot-air stoves is their drying and parching heat, consuming much of the most valuable air for plants, and rendering the atmosphere almost as bad as it could be for plant life. They keep out frost, but do much harm in another direction. Putting a kettle upon a stove aids the atmosphere for a time, but to keep up a constant supply of steam, especially all night, will induce damping off. You cannot do better than purchase one of the small hot-water contrivances advertised in our columns. Of course, when half-a-dozen or so are almost equally as good we cannot mention one in particular, but you will find several named and some illustrated. Let us know what kind of bedding plants you wish to save, and we will answer the latter part of your query.

2099—**Strawberries in winter** (*S. G.*).—It is unusual to hear of such hardy things as Strawberry-plants suffering very much during the winter; but your garden is evidently very exposed. If the old leaves be killed no great harm is done, provided the crowns remain uninjured. You could not very well give other protection if your plants are in beds or rows rather close to each other than by laying over them Heath, Fern, or straw litter;

but that might blow away, or if there were much rain might rot and do the crowns harm. For such a position as yours we should prefer to have the rows of plants several feet apart, cropping between them in the summer. Then in the winter you could throw up on the windward side of each row a high ridge of soil that would break the wind and furnish excellent protection.

2100—**Seedling Onions** (*Onion*)—To secure good seeds for sowing from Onion bulbs, the finest, handsomest, and firmest of them should be selected, and kept in a cool shed, not necessarily exposed to sharp frosts, however. Fully dry off your bulbs before storing. They should be planted in a row or bed about 12 inches apart each way or, if desirable, rather under. The soil should have been deeply dug, but need not otherwise be rich. Just bury the bulbs so that the tops are visible. When good stout seed-stems are thrown up, place a stake to each plant and loosely tie up the stems, or otherwise they may fall over and break off. Seed should be furnished to you late in the autumn, for it is long maturing. Cut the heads when the pods have numerously opened, and the seed is black. Ripen off on a newspaper in a dry place.

2101—**Treatment of garden** (*Novice*).—We understand you to have a little sunshine upon the taller wall, and here you might grow climbing Roses fairly well; but if you do not want flowers, an Ampelopsis Veitchi would soon cover a large space, and hide the bareness of the wall. Plant both Roses and the Creeper 6 feet apart. We would put Ivy upon the shaded lower wall, using the silver variegated varieties. Dig your soil up deeply, and leave it rough for a short time before planting. We do not know the exact nature of your soil, but think a good dressing of fresh lime would be of more service the first year than any manures. Read our notes in the issue for September 25 respecting Grass. You can plant Lily of the Valley and Wallflowers at once, also a few Daffodils; but would not a plain Grass-plot look better, seeing the walls are covered and your garden dark?

2102—**A foul garden** (*Convolvulus*).—Until you can afford to have every Gooseberry-bush grubbed right out, so as to clear the ground about them, you will never get rid of the running Convolvulus. Still, you may do a good deal by keeping the growth hard cut down with a hoe during the summer. Trenching the ground and picking out carefully all portions of roots, constant hoeing in the summer, or smothering the weed with long manure help above all other things to destroy it eventually. Have all your fruit-trees and bushes properly pruned and cleaned. Remove surplus Raspberry suckers, and make with them a new plantation. Wherever you have spare room under the trees or amongst the bushes, plant Strawberry runners, and grow on your spare ground early Potatoes, dwarf early Peas, Cauliflowers, early Carrots, and dwarf Beans, and in your greenhouse Tomatoes in pots in the summer and Chrysanthemums in pots rather late than early in the winter.

2103—**Celery keeping** (*Middleton*).—Celery always keeps best when it can be left in the ridges where it has been grown and blanched. Presumably you find the winter too severe, and the plants are destroyed. But if you could get some hurdles and thatch them thickly with long straw, and let them lie with the straw outwards, close to the ridges, so that the tops touch each other, and the straw came up above them, forming a sharp ridge, you would find in that way capital protection. Or you could well cover the ridge with long litter or Fern, and then lay sheets of corrugated iron or frames of felt over to throw off rain and snow. Failing this, lift your Celery carefully, preserving a ball of soil to the roots, and put a tie of bast round each of the plants. Then put the plants on their sides, with the roots towards a wall or fence, sheltering from the wind, and so with tiers of plants laid close together, and layers of soil 2 inches thick, build up a bank, over which later you could hang mats or sacks, or fix litter, and thus throw off rain. You should preserve your Celery well.

2104—**Covering Seakale and Rhubarb** (*A. B.*)—These roots when grown in old beds outdoors require very similar treatment. The work of covering up to induce early growth and blanching is, however, usually regulated by the quantities in each case, as if set about at once all the products might have made growth, been blanched, and cut or pulled by the end of January, and you would then have none for the spring. Where there are big breadths of roots some may be covered now, and others later on for succession. If you have but enough of each of the roots to make one covering only, we should advise waiting until after Christmas before beginning to do so. Really yet and for a couple of weeks the roots have hardly rested after leaves have fallen, and a little time is needed for that. Hot manure placed about the beds soon cools in wet or cold weather. However, whenever done, that is how you must cover up the pots. Rhubarb, however, does best under tubs or huge drain-pipes, with movable tops, as then access can be had to the stalks without removing the pots, and there is more height for the stems.

2105—**Greenhouse** (*W. C.*).—We could not advise you that you could get a livelihood out of one span greenhouse, 120 feet long, and 15 feet wide. If you had an acre of ground attached, and the best use was made of the house, the case might be different. Probably few things would pay better in such a house than Tomatoes, and if you raised strong plants, got them into 10-inch pots, and stood them along on either side so that the stems were 12 inches apart, and on each side running to the top of the house, you would thus have some 240 plants, and if each one carried 4 lb. weight of fruit you would then get nearly 1,000 lb., which, sold at 6d. per lb., would give you £25. But you would have to use firing for some time, at least. Then, when you cleared out the Tomatoes, you could fill the house with Chrysanthemums from outside, and these, if they bloomed well and sold, would give you another £10 to £15, but at the cost of considerable labour. So soon as the Chrysanthemums were over it would be needful to well cleanse the house and prepare for the next crop of Tomatoes. Really three or four houses of various sizes with some ground are needed to have variety and succession of stuff to sell, and enable a living to be obtained.

2106—**Mushrooms** (*D. C.*).—The fungus complained of in your Mushroom-bed may arise from several causes. The soil used for facing the bed may have been sour and contained fungus spores, especially if derived from near a wood, or there may have been fungus before in the wood-work of the shed, spores being thus spread; or the Mushroom cakes may have been in fault, being old, the true Mushroom spawn almost inert, and some obnoxious fungi have been generated. Fungi of this nature are so closely allied that it is very difficult to identify them. What is most to the purpose is how to get rid of it in your case, and we fear what would kill one would also destroy the Mushroom spawn. Very much, too, depends on the character of the manure used to prepare the bed, for if the animal excrement be caused by medicines in any way, the bed is soon rendered valueless. It may not have been fully prepared and soon lost warmth, or may have contained some improper matter that soon bred fungus. We should advise making up an entirely fresh bed with good, well-prepared, and sweet stable-manure, getting fresh new spawn-cakes, and also soil from a sweet place, making up the bed beneath a sheltering wall outdoors, and when spawned then covering up well with clean long litter.

2107—**Trees for south-east wall** (*Codnac*).—On a wall with south-west aspect, yet rather more south than otherwise, of 27 feet long, you might plant three trees, allowing each 9 feet room to fill. Twelve feet is, however, a great height, and if you obtained half-standard or rider trees having clean stems some 3½ feet to 4 feet in height, you could grow Tomatoes on the bare wall below. A good Peach would be Royal George, as it is hardy and always does well. A good Pear would be Marie Louise, and rather than having a Cherry, as the trees foul so rapidly with aphis, we should prefer either a Shipley Apricot or a Plum, such as Green Gage or Coe's Golden Drop. To do the trees well it would be wise to open the ground for each tree, 4 feet wide and broad. Throw out on to one side 12 inches of the top spit, and on to the other 12 inches of the bottom. Then throw in some brick rubble 4 inches deep, on that some rough pieces of turf, then return the top soil only, to which may be added some other top-soil, wood-ashes, and bone-dust well mixed. Plant the trees in this rather shallow, and let them settle down well before firmly nailing to the wall. If the soil be fairly good, use very little manure, and that should be old or well decayed, not fresh or coarse. Get the planting done so soon as you can, and place a layer of long manure over the roots for the winter.

2108—**Orange-trees** (*F. S. T.*).—The grafting of Orange-trees should be done in the spring, and in gentle warmth. Any seedling trees raised in pots will do to graft, and small scions or grafts of fairly firm wood from good fruiting varieties should be obtained. Whether you can obtain these we do not know, but if you want bloom and fruit, the grafts should be taken from some old trees that habitually fruit. Then you will probably have equally fruitful trees later. The stocks to be grafted may be young and small—no bigger round than a pencil or be much larger. The grafting is very much like that of Apple or Pear. The shoot used for scion must not be larger than the stock, and if smaller than the bark on one side of the union of the two cut surfaces, must be made to meet. The rule is to tie on the graft securely, and then either coat over with mastic wax or tie damp Moss tightly round it, keeping it damped from time to time. The plant from which the graft is taken should be in a cool temperature, whilst the stock should be growing for a short time previously, at least, in a slightly warmer temperature to excite root action and sap flow ere the grafts are put on. You will, if you can furnish proper warmth, find March a good time to graft, but if you can give no heat, then defer it until the middle of April. So much depends on the way the work is done. Commonly the Citron is much used to join Orange-stocks. Propagation by cuttings is also not difficult, firm young tops being set into pots in sandy soil under a bell-glass and stood in a bottom-heat of about 75 degs. In your case, no doubt, the most expeditious way is to graft as desired, doing it well.

2109—**Seakale** (*J. F. B.*).—If you have a breadth of Seakale the best thing to do with it at present is to leave it alone until all the leaves are fallen and decayed. Then you can treat the plants as you may most prefer. If you have none, and want to obtain a stock of plants, your best course will be during the winter to obtain from someone who has a quantity of roots, cuttings or thongs. These are the side roots trimmed from the main roots. If you cannot obtain these, then purchase some seed during the winter. A pound or quart will make a good sowing, as it is light. In the meantime, get prepared for the purpose a piece of ground, so much as you can spare, by trenching it and adding a good dressing of manure. That work may be done in dry weather during the winter. In the spring strew over the surface some wood-ashes or Kainit thinly, and well fork it in. Then draw drills as for Peas, 18 inches apart, and sow the seed very thinly—that is, 3 inches or 4 inches apart along the drills, and cover up. Do that about the middle of April, not earlier. When the plants are up, thin out each to 9 inches or 10 inches apart, and keep well hoed. A light sprinkling of coarse salt, or of nitrate of soda, given in June, well hoed in, will do much good. The leaves decay, and the roots are ready to lift if desired in November. Then when carefully got out all the side roots are hard cut off, laid one way, and carefully saved the standard crowns being laid into other soil, thickly, ready for use in forcing or blanching, as needed, in a dark, warm place, and in soil. The side roots should be made into cuttings 4 inches to 5 inches long, the bottom ends being made slanting, then all laid thickly into soil, the top end upwards, for the winter, to be planted in fresh trenched soil in April, just as described for the seed. Seakale forces or blanches easily in the dark, and with plenty of roots will give a supply for several months.

2110—**Layering Malmaison Carnations.**—What is the Moss system alluded to by your correspondent "J." in Gardening, Oct. 16th, p. 471?—Be.

*** *A little ball of Sphagnum Moss is fastened around the partly severed layer, and greatly helps to keep the young roots from injury when lifting. The layers root freely into it, and the whole is lifted and potted. This Moss is sufficiently astringent to arrest decay, although keeping very moist.*

2111—**Rain-water tub.**—I am using an old paraffin-cask, which is apparently clean and free from smell. Nevertheless, when rain collects it becomes in a few days absolutely foul and unfit for use. Should it be fired? If so, how should it be done?—A, E. G.

*** *When the cask is dry inside burn a quantity of straw or shavings in it, turning it over and over until nicely charred. The charcoal acts as a disinfectant.*

2112—**Carnation "spot."**—My Carnations got diseased through some bought last spring. I thought that they had grown out of it, but I find my new layers affected. Can I do anything to check it now it is in its early stage? I cut off any diseased leaf I notice, but, of course, I cannot see all. I am about to try the blue-stone and soda recipe.—Be.

*** *Spot is caused by keeping them too damp, and your best remedy is to alter this.*

2113—**Plantains on lawns.**—Will you kindly tell me what is the best thing to do for a lawn that every year is full of Docks, Daisies, and Dandelions? We have had them pulled up often, but each year they seem as bad as ever. Is there anything to kill them, or does putting manure and then seed do, making the Grass and soil better?—E. M. W.

*** *Please refer to our issue for Sept. 25. We have repeatedly given advice.*

2114—**Crotons losing their leaves.**—Will you kindly tell me what is wrong with my Crotons? I got them from a nursery last August, and repotted them at once, using a mixture of peat, leaf-mould, silver-sand, and loam. After potting I put them in a stove. Now they are beginning to lose their leaves. The temperature of the house is about 65 degs. at night; on bright days 75 degs. or 80 degs. I keep both plants and atmosphere very moist.—An Old Reader.

*** *It is by no means necessary to repot these, as many think, and probably the root disturbance, placing them into a cold compost, or giving water at a less temperature than the house is the cause of failure.*

2115—**Young Fuchsias and Ivy-leaf "Geranium."**—I have some young well-rooted plants, about 6 inches high, and want to know how to treat them through the winter. The older plants of same kind I cut back the end of this month, and they are kept in house which is from 35 degs. to 40 degs. during the winter. Of course, I do not expect them to bloom until next summer; but will the same treatment do for the little ones, as I do not want to lose them?—Industrious.

*** *Yes, if you keep them from frost and rather dry, the young ones will come through quite as well as the older plants.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*M. P. R.*—Ercilla (Bridgesia) spictata is the name of your shrub. It is a native of Chili, quite hardy, and is a very good evergreen climber. When well established it requires no nailing, as it throws out an abundance of aërial roots (similar to the Ivy) by means of which it fastens itself to walls, arbours, etc. Its pinkish-coloured flowers are produced on short spikes.——*A. L. O. F.*—1, Adiantum tenerum; 2, Pteris cretica albo-lineata; 4, Prickly Shield Fern (Polystichum angulare); 5, Asplenium bulbiferum; 6, Selaginella Kraussiana.——*O. S.*—2, Juniperus var.; 3, Juniperus japonica aurea; 4, Sequoia (Taxodium) sempervirens; 5, Cupressus (Chamæcyparis) sempervirens; 6, Cupressus Lawsoniana albo-spica; 7, Cupressus Lawsoniana aurea; 8, Biota orientalis aurea; 9, Andromeda floribunda; 10, Juniperus recurva; 11, Cupressus Nutkaënsis aurea (Thujopsis borealis aurea).——*Mrs. M. P.*—We cannot say what he plant is from leaves only. Can you send a flower? It is more probably Heuchera Richardsoni than H. sanguinea. Try the plant in another place more shady.——*Mrs. B.*—All save the small-flowered reddish Aster were crushed beyond recognition. The one referred to is A. horizontalis.——*H. Tunnington.*—Kindly send flowers of those not named. 1, Smoke Plant (Rhus Cotinus); 3, Ruscus aculeatus (Butcher's Broom).——*Mrs. W. Watson.*—Thorn Apple (Datura Stramonium).——*Devonshire Garden.*—1, Strawberry-tree (Benthamia fragifera); 2, Please send in flower. Looks like a small shoot of an Andromeda; 3, Diplacus glutinosus.——*X. Y. Z*—1, Aster turbinellus; 2, A. horizontalis; 3, A. longifolius; 4, A. Novæ-Angliæ; 5, Lousewort (Pedicularis sylvatica); 6, Moon Daisy (Pyrethrum uliginosum); 7, Aster lævis——*J. B.*—1, A. lævis; 2, A. vimineus; 3, Faded.——*R. S.*—1, No special value in the Sunflower; 2, Sedum spectabile; 3, Moon Daisy (Pyrethrum uliginosum); 4, Curious, certainly, but due to fasciated growth; 5, Please send in flower.——*Heath.*—1, Juniperus communis; 2, Cupressus Lawsoniana; 3, C. Law. stricta; 4, C. Law. lutea; 5, Retinospora plumosa; 6, R. plumosa aurea.——*F. Johnson.*—Viburnum Lantana.——*M. E. M.*—The Mountain Cotoneaster (C. frigida). This is quite distinct from the Service-tree which is Pyrus Sorbus.——*M.*—Cotoneaster Simmonsi. It can be planted now with safety.——*V. Marrow.*—1, We cannot be sure of this; perhaps it is Physianthus albens or not; 2, Chlorophytum elatum; 3, Lithospermum prostratum; 4, Acer palmatum; 5, Send flower when open; 6, Gunnera scabra.——*Rex.*—1, Siothorpia peregrina; 2, Veronica speciosa; 3, Aspidium angulare; 4, Chlorophytum elatum var. variegatum; 5, Iris fœtidissima variegata——*R. Moss.*—1, Abies Morinda; 2, Woolly Woundwort (Stachys lanata); 3, Euonymus japonicus aureo-marginatus; 4, Santolina incana; 5, Lonicera tatarica; 6, Euonymus europæus (Spindle-tree).——*Constant Reader.*—The name of the root is Arum crinitum.

Names of fruits.—*W. R. Gribble.*—1, Norfolk Beaufin; 2, Blenheim Pippin; 3, Wellington; 4, Ribston Pippin; 5, Cox's Orange Pippin.——*D. H. D.*—We confused the numbers, but the red Plum is Victoria, and the other probably Belgian Purple, but unfortunately was very much overripe when received.——*D. Gill.*—Do not recognise your Pear at all. It is certainly not Court Pendu Plat, but more like King of the Pippins. It is probably that variety from a very shady part of the tree.——*T. H.*—1, The delicious Cox's Orange Pippin; 2, Yorkshire Beauty——*Gordon.*—Pear Passe Callebasse.——*W D.*—See short reply column about Marie Louise Pears rotting. Other fruit is a small specimen of Beurré Diel.——*E. H. C.*—Apple Mère de Ménage.——*The Lilies.*—1, Beurré Hardy; 2, Not recognised; 3, Beurré de Capiaumont; 4, Marie Louise; 5, Autumn Bergamot; 6, Fondante d'Automne.——*J. Stamp, Havant.*—1, Cornish Gilliflower; 2, Hawthornden; 3, Beauty of Hants; 4, Hollandbury; 5, Lady Henniker; 6, Lemon Pippin; 7, Margil; 8, Scarlet Nonpareil; 9, Kindly send a larger fruit; 10, Winter

Hawthornden; 11, Northern Greening.——*Rev. N. P.*—Apple Lady Henniker ——*Ignorant.*—The labels got mixed so as what, but we think the following are correct. If you send a fruit of these not named we will help you. 2, Blenheim Orange; 3, Golden Noble; 4, Ribston Pippin; 8, Cox's Orange Pippin; 9, Lady Henniker.——*R. D. Carlow.*—Your fruits were not very good, and we can only determine the following: 1, Margil; 2, Alfriston; 4, Waltham Abbey Seedling; 6, Lady Henniker.——*J. Frew.*—We are sorry to say yours were the poorest specimens we have received this year, and we cannot determine any of them. If you will send larger fruits we shall be pleased to look at them again.——*F. W.* 1, Catillac; 2, Thompson's Pear; 3, Easter Beurré; 4, Beurré Sterckmans; 5, Too poor; 6, Brown Beurré; 7, Duchess of Oldenburgh.

Catalogues received—*Daffodils.*—Messrs. Barr and Sons, King-street, Covent-garden, London.——*Roses.*—Messrs. Wm. Paul and Son, Waltham Cross, Herts.——*Catalogues referring to Peruvian Guano.*—The Anglo-Continental Guano Works, 30, Mark-lane, London, E.C.——*Sweet Peas.*—Messrs. W. Atlee Burpee and Co., Philadelphia, U.S.A.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Drying Apples for winter use (*A Regular Subscriber*).—Peel and core the Apples, which must be quite sound and free from specks. Put them on sheets of white paper, quite whole, in a cool oven, turning them frequently. They must not become in the least soft, the oven being only warm enough to dry them without cooking them. It is a tedious process, and takes some hours to prove a success. When quite dry and shrivelled-looking pack them in bottles as air-tight as possible. When wanted for use soak for eight hours in cold water. Some of the water the Apples are soaked in can be used when cooking them, well flavoured with Lemon-juice and sugar.—B.

American Apple butter (*A Regular Subscriber*).—Put two quarts of sweet cider in a copper pan and boil it down to three pints. Peel, core, and cut in slices three dozen nice juicy Apples, and put them into the boiled-down cider, with a stick of Cinnamon, six Cloves, and the thin rind of two Lemons. Bring this slowly to the boil and stir well; then boil until it is a thick jam and a little dropped on a plate sets quickly. Pour into hot glass jars, cover while hot, and keep in a cool, dark place.—B.

To cook Salsify (*G. W. M.*)—Scrub the Salsify to remove all the dirt. Then scrape off the skin, putting them as quickly as possible into a basin of cold salt water. Have ready a saucepan of quite boiling water—salted—with a teaspoonful of Lemon-juice, or white wine vinegar; let the Salsify boil quickly, and cover, until it can be easily pierced with a fork. Melt a good lump of butter in a saucepan with the juice of half a lemon, well seasoned with pepper and salt. As soon as the Salsify is tender, take it out of the water, and put it into the Lemon-juice. Let it simmer a few minutes; then lay the Salsify on a piece of toasted bread, pour over the same, and serve as hot as possible. Salsify may be served with any nicely made sauce—brown or white—Parsley, or Tarragon, Chervil, also cut through, and then in short lengths. After boiling, dip each piece in flour, then in egg and bread-crumbs, fry a golden brown in boiling butter; it is also very nice scolloped.—B.

Beet wine.—Will some reader kindly say how this is made?—Kent.

POULTRY.

Scaly legs in poultry (*H. M. H.*).—The best treatment for this disease is to rub the parts daily with equal parts of vaseline and zinc ointment; in severe cases, 1 ounce of sulphur, ½ oz. of oxide of zinc, 1 drachm of oil of tar, and 2 oz. of whale-oil, mixed together and applied daily will answer well. Scaly legs may be either due to a deficiency in the secretion of oily product, which causes the skin to dry up until it appears like a series of scales, in which case the above remedies may be used; or the ailment arises from the parasitic influence, and here sulphur ointment proves a sure cure. In confined runs, and wherever the space is somewhat limited, I should consider the parasitic form to be the most prevalent.—Doulting.

Moulting hens (*L. C.*).—The proper course to adopt with moulting hens, especially in the case of first-class layers like Minorcas, and when the season is so far advanced, is to keep them comfortably warm, and feed generously, but there is no particular need for any special medicines unless the Fowls are very much below par. As soon as the feathers begin to fall off, the Fowls should be kept under cover, beyond the reach of draughts, but there is no occasion to put them in very close quarters. All that is needed is to keep them warm, and this end is gained if we can prevent them becoming wetted to the skin, or being huddled in some corner outside in the face of a keen, biting wind. The effect of the warmth obtainable in the shed is to hasten the moulting process, the old feathers being more quickly shed, and the new growth being more rapid than would be the case if the Fowls spent the greater part of the day in the open air. It is well to give warm food in the morning, and some whole Corn should be available later in the day. Green food ought also to be within reach, and the water-trough may contain some old rusty iron. Do not feed too well, as you do not wish to make the birds too fat. They may remain in confinement until their new plumage is once more nearly complete; after which they may be gradually hardened off and returned to the open. The male birds are best kept apart from the hens during the moulting business, and it would be still better to give them a separate run until February, if it can be managed.—Doulting.

BEES.

PRESERVING THE LIVES OF CONDEMNED BEES.

At this season the Bee-keeper of the old school is busily employed in destroying his Bees over the brimstone pit in order to obtain the stores they have worked so hard to accumulate during the summer. If instead of this cruel, wasteful practice, the Bees were removed from their skep by the driving process, and joined to the stocks to be kept over for next season, not only would the honey be secured in better condition than that obtained from smothered hives, but the stocks receiving the driven Bees would do far better in the future than they would have had they not received this addition to their numbers. And then there is another course to be followed, if preferred, for if instead of joining the driven Bees to established stocks two or three lots are united and fed freely upon sugar syrup, while the weather continues warm, combs will be quickly built out, stored with syrup, brood reared, and strong stocks for wintering the result. We have always found cottagers pleased to have their Bees driven for them rather than smother them in the old-fashioned way, and anyone undertaking the driving operation can usually secure the driven Bees for a trifle, and so be enabled to add to his apiary at a cheap rate, either by joining and feeding up for comb building, and so forth, or by increasing the population of his hives by uniting. Driving is easily performed by anyone at all experienced with Bees; it only requires coolness and confidence, and (if preferred) the protection of a Bee-veil. The skep to be driven has just a puff or two of smoke blown into the entrance, and is removed from its stand and turned upside down, an empty skep placed over it, mouth downwards, and a cloth tied round the junction to prevent the Bees escaping in their upward march. The stock hive is then gently rapped all round with a stick, or, better still, the palms of the hands; the jarring of the combs causes the Bees to run up into the empty skep for shelter. They make a loud humming while doing so; the rapping is therefore continued till the humming subsides, when it is found that most of the inmates have left the parent hive and taken refuge in the skep, which is then placed upon the straw the old hives occupied. The combs are then removed one by one from the honey-skep, and the few adhering Bees brushed off on to the old alighting-board. The combs are easily removed if the skep be cut in two between the central combs, or if it is wished not to destroy the skep by cutting, it may be bumped sideways upon the ground, which will cause the combs to become disconnected with the top and sides, when they can easily be removed. It must, however, be remembered that new combs of the present season are very tender, and should be handled carefully. After two or more skeps have been driven the Bees may be put together in one hive; they will not fight if joined at once, by throwing them together on to a sheet and placing a hive over, propped up a little to admit stragglers. The syrup for feeding up the driven Bees should be made with good granulated sugar and water, in the proportion of 1 lb. of sugar to ½ pint of water, boiled together for a few minutes; to this some Bee-keepers add a pinch of salt and a few drops of vinegar. The syrup is supplied by means of a feeder placed on top of the skep, which has to be carefully protected from robbers and kept warm at night, that the work of comb-building may proceed without check. S. S. G., *Uxbridge.*

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GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

TRANSPLANTING IN GREENHOUSE.

The question asked by "Subscriber" is of sufficient importance to readers of Gardening to call for a fuller reply than is the usual rule. Many market growers raise a large collection of plants in the spring, and afterwards plant them out in the open. This is usually done when all danger of late frost is over—say, the latter part of May. The plants when in this position are never unduly crowded, but sufficient space left for them to be overlooked and staked, and also that air may pass round them to ensure healthy and satisfactory growth. When the time arrives for the plants to be lifted and transplanted inside the glass structures, ease the soil around one side of the plants first—say, a week or so before it is determined to take them indoors. By observing this rule the check is less likely to be felt as severely as would be the case if the plants were lifted in the ordinary way. The period of lifting should be determined by the object the grower has in view. For the early autumn displays sorts which flower somewhat early would naturally be selected, and these should be in position before the buds begin to burst. The midseason sorts would follow a week or a fortnight later—say, the first week in October—and the latest varieties still later, taking care to get them in before really severe weather be experienced. The plants should be transplanted in rows, thus making it easier to get about among them for the purpose of watering, feeding, etc. Each plant should be lifted with a good ball of earth to the roots, and holes or trenches dug of sufficient depth in the greenhouse to thoroughly embed them. The planting should be done firmly, taking care to avoid damaging the roots. The surface should be finished off with a small quantity of soil, and the plants afterwards well watered in. The greenhouse should be kept rather close for a day or two at first, after which let air be given, gradually increasing the quantity so long as the weather permits. In large market greenhouses there is less need of this than in the case of small structures which many growers possess. It would be wise to have some of the plants disbudded, and others should be allowed to develop almost every bud they produce. In this way it would be possible to cut useful sprays of blossoms for many forms of decoration, while the larger disbudded plants would produce a capital lot of a suitable size to render them invaluable for large vases. For work of this kind, therefore, it is important that varieties of a dwarf and sturdy habit, and with a constitution of a reliable character, should be selected, as those of tall growth would be very difficult to manage, and would also entail a greater amount of labour and expense in their cultivation. We should prefer to strike the plants early in the year for this work, as this would give plenty of time to produce a batch of plants of a suitable size for the object intended. You had far better grow a lot of naturally dwarf and bushy plants rather than pinch back any taller sorts in order to induce them to become dwarf and stocky.

The best varieties are Source d'Or, orange-red; Mlle. Lacroix, white, and its two sports Annie Clibran, rose-pink, and Mr. Chas. E. Shea, light yellow; Clinton Chalfont, rich golden-yellow; Lady Selborne, white, and its yellow sport Yellow Selborne; Ambroise Thomas, reddish-bronze; Mons. William Holmes, bright crimson; Mrs. Conway, soft yellow; Emily Silsbury, pure white; and Elaine, white; these sufficing to keep you well supplied till November is pretty well advanced. These should be followed by Golden Dart, rich yellow; Janette Sheahan, golden-yellow, tinted bronze; Eugene Dailledouze, rich deep yellow; L. Canning, pure white: Golden Gem, crimson and yellow; Mrs. Wm. Filkins, bright yellow, very distinct flower; Princess Blanche, creamy-white; Stréa, bright yellow; and Princess Victoria, white. All the foregoing are Japanese sorts, and we believe you would find the selection answer your purpose very well indeed.

Chrysanthemums in small pots (*R. B H.*)—The plants to which you refer are grown in large numbers for market, and in some instances grown on well during the summer and potted into 5-inch pots finally. They are then plunged in the open, this answering two distinct purposes—in the first case saving labour by keeping the roots cool and consequently requiring less water; and in the second, by thus being kept cool, ensuring a long season of uninterrupted growth under cool conditions. In this way nice bushy and stocky plants are got. The first plants to flower are the early Pompons, some of these being very dwarf and pretty. You mention the different colours in which you have seen the flowers. These are easily got by making a careful selection of the many sorts now catalogued by the leading trade specialists. We know of certain market growers who always make a point of propagating the "toppings"—*i e*, the shoots cut off the stems of the sort grown to make large bushy plants. These are dibbled in some light sandy compost at different periods during the summer, commencing first during May, and continuing on until the end of June, and sometimes even later. Cuttings inserted during May will either produce one very large handsome flower, if disbudded, or, if allowed to run on to terminal buds, quite a number of pretty little blossoms. Propagated as early as May, cuttings of some of the latter sorts often attain a height of 3 feet to 4 feet, but those of the dwarfer sorts make useful plants not more than half that height. This is an exceedingly interesting system of culture, and is deserving of extension by all growers. We know of Pompon sorts, struck as late as the first week in August, making charming little plants in 5-inch pots for November use, and admirably adapted for window and table decoration, being freely flowered, and clothed with rich green foliage down to the pots. You ask for about a dozen names in an equal number of different colours. This is an easy matter, but is open to severe criticism. However, we are pleased to recommend the following:—*Japanese:* Emily Silsbury, white; W. H. Lincoln, yellow; Chas. Davis, bronzy-yellow; Mutual Friend, white; Annie Clibran, rose-pink; Mr. Chas. E. Shea, light yellow; Pallanza, rich yellow; John Shrimpton, rich crimson; Viviand Morel, rosy-mauve; Mons. Chenon de Léche, rosy-buff, shaded yellow; Mons. Chas. Molin, deep yellow, suffused crimson; and Surprise, carmine-crimson. *Six Pompons for early use:* Flora, golden-yellow; Little Bob, bright crimson-brown; and L'Ami de Conderchet, rich creamy-white; for later use the three colours of Cedo Nulli—white, gold, and lilac. Place the plants in their flowering pots when they have filled the smaller pots with roots, and not before.

EARLY CHRYSANTHEMUMS.

These have been exceptionally free this season, and the fine weather has been favourable to the development of pure coloured blossoms, as the still and warm atmosphere has been a great contrast to that which too frequently prevails. Mme. Desgrange has fully maintained its character as the best of the early white varieties, for it carries such splendid heads of bloom, and the branches continue to develop lateral shoots for a long time, that this variety alone will give at least six weeks' supply. Lady Fitzwygram is certainly a much purer white, but the footstalks of the blooms are so weak that each bloom requires to be wired to make it look well in floral decorations. By the time these are over the second early sorts are coming into full beauty, and certainly that good old sort Sœur Melanie promises to be extra good this year. I have some large clumps, formed by planting out in spring large old specimen plants, that developed a perfect thicket of shoots from 3 feet to 4 feet high, and are now crowned with hundreds of fine trusses of bloom. It is true that they have a pink tinge when they first expand, but they quickly change to pure white, and no variety in cultivation is more useful for cutting. Mme. Lacroix is probably the best known of all the feathery Japanese kinds, for it has stood the test of time, and is still difficult to beat. It is equally at home on the exhibition table or in the hawker's basket, and one of the purest of white sorts. But these early-flowering sorts out-of-doors need a fine autumn to show their full beauty, for when drenched by floods of rain and battered by gales of wind the whole of the twelvemonths' labour is lost. The glorious uncertainty of our climate was never more fully exemplified than during the year 1897.

J. G., *Gosport.*

Chrysanthemum Tokio.—This belongs to the small-flowered Japanese section, and is indispensable for cutting during November. The petals are somewhat twisted and of a dark brilliant red colour. The texture of the blooms is very wiry, rendering them long lasting. It pays to keep several old plants of this variety, giving them large pots in January. These give an incredible quantity of bloom the following season, and if the yearling plants are kept out under canvas till, say, the middle of October,

and then placed in a north house, a succession of this most useful variety may be had up to the middle of December. These free-flowering sorts are far more useful for decoration in the house than many of the larger varieties, which will, with much feeding, produce a few mop-headed blooms, but which under ordinary cultivation refuse to open the later-formed buds.—C. T.

Chrysanthemum Mrs. Carter.—This is a capital variety for cutting, colour a mixture of light red and old gold. If grown two plants in a 9-inch pot and not disbudded in the least, every shoot, from the largest to the smallest, will be furnished with flowers. This variety, more than any other I know, has a habit of forming a whole host of side laterals, all of which form buds, which open perfectly after the main shoot ones, thus forming a succession. These later blooms are most useful for small glasses or for inserting around and over the base of miniature groups of plants on the dinner-table, the colour contrasting well with the white cloth. In larger vases sprays of bloom of this variety look charming with a few coloured dried fronds of wild Ferns.—J.

Chrysanthemums deteriorating.—If, as many growers of these flowers affirm, it is inevitable that stocks grown under the somewhat artificial conditions by which show blooms are produced will deteriorate, it seems odd that the precaution be not taken to plant well-rooted late-struck plants outdoors, where, under natural conditions, they should soon resume their wonted health. Such plants should give plenty of stout cuttings that should have the merit of giving robust plants, especially if rooted in a temperature as low as possible rather than in a high one. So far as the Japanese kinds are concerned, the bulk of these are fairly robust, and it seems hardly needful, so rapid is the development of new varieties, to keep them above five years. The incurved, however, come more slowly, and the Queen type especially has been long with us and still cannot be spared. To secure robust stocks of these should not be at all difficult. No one who takes stock of the Chrysanthemums seen growing in small gardens, such as we have here in front of cottages in many of our Kingston streets, can fail to have noticed the remarkable strength of growth made by many varieties, old and new. Planted out as ordinary perennials and left to shift for themselves, they go on producing robust growths and really beautiful heads of bloom for years with no actual culture. Does not this arise from the fact that the plants are growing under natural conditions? No doubt cuttings taken from these hardy plants and rooted cool would produce very strong stems and very fine flowers. It seems but needful to treat the Chrysanthemum as a hardy perennial to have its cutting progeny in robust health.—A.

GARDEN WORK.*

Conservatory.

Epacrises are beautiful winter and spring-flowering plants, but they are not so popular as they were thirty years ago. They are rather easier to manage than Heaths. The family came originally from Australia, but some of the best varieties have been raised from seeds by European cultivators. They must be grown in good peat and sand, and after flowering should be cut back rather hard, and then placed in heat to cause back-eyes to start. Repotting may be done when the young shoots are 2 inches or 3 inches long. Pot very firmly. Pot up all kinds of plants for forcing; most of these for early work will, of course, be established in pots, but such things as Rhododendrons are of no value for forcing except well budded, and it is best to plant out after flowering, and lift plants from the beds with buds for forcing the next season. Rhododendrons can always be lifted with balls, as the roots are short and fibrous. The Indian Rhododendrons and their hybrids are usually grown in pots, as, except in very warm situations, very few are adapted for the open. Camellias which made their wood early are now opening their flowers, and may have liquid-manure occasionally. Soot-water, in a clear state, is good for them. It is rare to meet with a good collection of Camellias or Azaleas in a limestone or chalk district, even when good peat is obtained from a distance, in consequence of the hardness of the water; even when soft water tanks are built the supply usually gives out when dry weather comes. Late Tuberoses are beautifully in bloom now, and are among the easiest things to manage. The African bulbs will soon come to hand, and if potted at once and helped on in heat they will begin to move at once. Pot more Hyacinths and other Dutch bulbs, also the Berlin Lily of the Valley. The system of retarding the crowns in a cool room has led to the extension of the season; in fact, Lily blooms may be obtained all the year round now, and these frozen crowns start immediately they are removed to a warm-house. The sponge should be used to clean dirty leaves of Oranges, etc., as the syringe or engine cannot be used. This can be done on wet days or in bad weather.

Stove.

Get Gardenias free from mealy-bug before the flower buds form. A strong dose of nicotine vapour will kill the full-grown insects, but, I fear, not the eggs, therefore either the sponge will have to be used or the vaporiser more often than would be generally necessary. Euphorbia splendens is rather a pretty thing when well bloomed, and to have it thus it is necessary to get the wood well ripened. The plants flower all the better for a good roasting in the sunshine in summer. Do not overpot, but give liquid-manure to increase the size of the blooms, which are very useful when wired for coat flowers, and sprays, and bouquets. Night temperature now 65 degs., with a drop of 60 degs. on cold nights A little ventilation may be given along the side when the thermometer reaches 75 degs. to 80 degs., closing and damping down early in the afternoon. Stove plants must have a moist atmosphere.

Unsatisfactory Vines.

When the roots have gone down too deep for healthy action half measures are of no use. Lift the roots as soon as the Grapes are cut, and where the work must be done the Grapes may be cut now and bottled. If the bunches are cut with 8 inches or 9 inches of wood, the shoots may be thrust into bottles of water, and the bottles placed on a shelf so that the Grapes hang clear. Open a trench along the front of the border, wheel the stuff away down to the foundations, then work with forks, saving as many of the roots as possible. Put on as many hands as possible and get the job out of hand quickly. If the border is a long one, do half at a time, and get that half filled up and the roots carefully laid in the new soil before the other half is trenched. If there are plenty of hands, one party may be filling up and the other taking away. See that the drainage is all right, and keep the border well above the natural level, especially if the subsoil is clay. When the border is finished cover a foot deep with tree-leaves, and cover with shutters or corrugated iron to keep off heavy rains. The top spit of an old pasture is the best soil for Vines and fruit-trees generally, adding wood-ashes and old plaster, about one load to ten of loam, to keep it open and sweet. Bones and a good artificial manure will be of great advantage. Better spend the money in these substances than on farmyard manure, which stops up the pores of the soil and makes it sour. If there is any difficulty in getting the right kind of soil, make the border piecemeal. If the whole border is 16 feet or 18 feet wide, fill in half and then the roots occupy that part fully first. If the whole border is filled in, the roots will go through it in one season, and if they can they will go outside the next. Better give them as much food as they can consume, with liberal feeding in summer in addition, and then when the roots have filled up add more border.

Ferns Under Glass.

Among the best Ferns for baskets are the several forms of Nephrolepis. Perhaps N. exaltata is the best for the amateur's fernery, because it grows rapidly and is hardy enough to be moved into the house on party nights. Phlebodium is a good Fern for a large basket, and several Davallias are good for smaller baskets. Pteris scaberula is very distinct and useful for small baskets The spring is the best time to fill the baskets, though where there is plenty of warmth strong plants may be planted in baskets any time.

Window Gardening.

Primulas, Cyclamens, and Begonias of the fibry-rooted section are in flower now, and with care may be kept in good condition in a warm room.

Outdoor Garden.

Turf will go down well now, and soon get established. It is too late to sow Grass-seed this season, but a lawn seeded down about the middle of September is now quite green, and will make a good sward next summer. Lawns intended for tennis should be sown thickly, and the ground should be well prepared and, if necessary, manured. Grass-seeds are a long time making a good lawn in poor ground. Weakly lawns may be dressed with bone-meal during winter; 4 lb. to 5 lb. to the square rod will thicken the grass permanently, and be of more real benefit than the quick-acting stimulants, but the effect of which is not lasting. Those who are thinking of planting what are termed Garden Roses should not neglect the Chinas or Monthlies; they are always in bloom or bud. They are small, perhaps, from the exhibitor's point of view, but they flower late and early, and are, or may be, on their own roots, so there are no suckers. I suppose the Dahlias are all lifted and stored now. They should be well dried before putting them away, especially if placed in a cellar which may be more or less damp. If Dahlia roots are well dried they cannot be kept too cool till after Christmas, if the frost is kept away. I have kept Dahlias through sharp winters in an open shed, covered thickly with straw, and never had better or stronger plants.

Fruit Garden.

The fruit forcer will now be making preparations for starting his pot-Vines and early Peaches. It is very important that the houses should have been thoroughly cleaned by whitewashing walls in which some sulphur has been mixed with the lime. A good deal may be done now to fight red-spider, mildew, and other troublesome things which are frequently found in forcing. I like Hale's Early as a forcing Peach under glass. Rivers' Early York is a sure bearer, and if the trees are well nourished the fruit comes of fair size, though it is generally described as a small fruit. Planted in the same house with Hale's and Royal George it comes in between the two. I know of no better mid-season Peach—*i.e.*, one to come on in the second house—than Dymond. See that the roots are kept reasonably moist in winter. Pot-Vines which are strong, short, jointed, and well ripened may be started towards the end of November. The ammonia and the vapour arising from fermenting leaves, mixed with a little stable-manure, two thirds being leaves. Bend the canes back to insure the buds breaking regularly, and if there is any backwardness or sluggishness in starting give the canes a twist by taking the end in the hand and twisting till the sap-vessels are liberated all down the rod.

Vegetable Garden.

Cauliflowers turning in must be protected. The best way will be to lift the plants with balls, remove a few of the bottom leaves, and plant thickly in a dark pit, covering with mats or litter in cold weather; or, failing the pit, plant in a trench in a dry bank, and cover with mats when frost sets in. Cauliflowers are fine this autumn, and all green crops have made much growth, and if severe frost should set much damage will be done. Those who only require small dishes of forced Asparagus at a time may force it in a warm greenhouse under the stage, the roots being packed close together in boxes or flat baskets, with the interstices between the roots filled in with light sandy compost, and 3 inches or 4 inches of the same compost should be placed over the roots to partially blanch the Grass as it comes through. Seakale may be forced in small quantities in 10-inch pots, 5 crowns or 6 crowns being planted in each pot, and then another pot of the same size inverted over it. Old wine-cases do very well for forcing Seakale, the roots being planted in light rich compost in the bottom of the case, leaving room enough for the Seakale to grow when the lid is shut close down. Rhubarb may be forced anywhere if there is warmth. Give water to Mushroom beds as they get dry. Make up new bed frequently.

E. HOBDAY.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 1st.—Plunged Strawberries in pots in ashes in cold-frames to prevent the pots being broken. Finished taking roots, such as Carrots and Beet, Salsify, Horseradish, and enough Turnips and Jerusalem Artichokes to go on with. Enough dry Fern has been secured for protecting Celery and other things when frost comes. Cauliflowers and Veitch's Autumn Broccoli, which are forward enough to be injured by frost, have been laid in deeply in a position where covering will be an easy matter.

November 2nd.—Moved a lot of early-flowering Azaleas to intermediate-house. We want white flowers at Christmas. A few of the best ripened Tea Roses in pots have also been placed in moderate heat. Potted up a lot of Christmas Roses and placed in cool-house. Potted late Primulas and Cinerarias into 5-inch pots. Potted more bulbs, including Lily of the Valley, Lilium longiflorum, etc. Planted a collection of Ivies and other creepers to cover a wall. Put in cuttings of Ivies and Honeysuckles. Planted several groups of China Roses round margins of shrubberies.

November 3rd.—Planted masses of late Tulips in shrubbery borders, including double whites and scarlets. Took up remainder of Gladioli to be dried and stored. One sharp winter we lost a part of our stock through the frost penetrating the building where they were stored—a mistake we are not likely to make again. Cannas, Dahlias, and Salvia patens have been stored away in safety. We have now large quantities of Tuberous Begonias in flower, brought on under cool treatment.

November 4th.—Raked up leaves for making hot-beds. The beds are afterwards turned over and reserved for potting purposes as leaf-mould. Commenced our annual work of removing and replacing old worn-out fruit-bushes, such as Gooseberries, Currants, and Raspberries. A few cuttings of Gooseberries and Currants are put in annually, so that when a bush gets old and useless a young bush just coming into bearing takes its place. The same course will be taken with wall-trees and fruit generally. Trees which were attacked by insects will be washed with a strong solution of Gishurst compound. Frames in which Lettuces, Endives, and Cauliflowers are should have the lights pulled off in fine weather.

November 5th.—Commenced rearranging the trees on a Peach-wall, where they were originally planted too close. Half-a-dozen of the trees have been taken to plant under glass, and the remainder opened out to fill the wall. Planted several groups of Roses, a dozen plants of a kind, chiefly old, well-proved, vigorous growers. We want masses to cut from, and to make some show in the garden. Sowed several rows of Sweet Peas. Sowed more French Beans in pots in warm-house. Finished planting Lilies of the Valley.

November 6th.—Made up a bed for forcing Asparagus—leaves and stable-manure, 4 feet high, fairly firm—and put on frame; shall put in roots when the heat is right, a watch-stick having been placed in bed to show when the temperature is right. Rearranged conservatory to make room for more Chrysanthemums and other plants coming into flower. All the time which can be spared from other work is devoted to trenching in the kitchen garden. Took up Chicory, cut off the tops and stored ready for forcing when required. Sowed more Mignonette in 5-inch pots to flower in spring.

Phyllocactus.—As regards the illustration of a Phyllocactus in last week's GARDENING, I may say that last winter the plant was accidentally thrown off the stage in the greenhouse, which necessitated re-potting. I followed the advice given so often in your valuable paper—namely, plenty of broken plaster and turfy loam. The next season it produced twenty-one fine blooms; previously it had not borne more than eight or nine. This seems to me a proof that re-potting is necessary, if done properly. The flower is a creamy-white, and very fragrant.—A. GODFREY, *Barrowby, Grantham.*

Plumbago capensis alba.—This is a chaste climber, particularly in large structures that can permit of its growing in a more or less natural manner. Thus grown it is one of the most exquisite climbers, producing its pleasing sprays of blossom for a long time. Both kinds, the blue and white, should be grown for their intrinsic worth as greenhouse plants.

OUTDOOR PLANTS.

THE WHITE TRUMPET DAFFODILS.

This is a very charming group of the Daffodil family, which is, unfortunately, more fastidious than many others. The bulbs are most happy in a fairly light soil, such as good loam mixed with leaf-mould and free from animal manures. Thorough drainage is essential. It is impossible to grow the plants in soil that is at all heavy or wet, and a north-westerly aspect is generally recommended as the most suitable. The best-known kind is Cernuus, a beautiful early Daffodil, clear white, and very dainty, without any of the primrose colouring seen in the variety of it named pulcher. This is more robust than the parent, and a kind everyone should grow who wishes for the more delicately beautiful varieties of Daffodil. Albicans, Cecilia de Graaf, and Colleen Bawn are a fine trio, but the last-mentioned is not a strong grower, although we cannot help admiring its flowers—pure white, with the perianth prettily twisted. Dr. Hogg belongs to the group of weakly growers, but the flowers are very soft in colour and pleasing in form. F. W. Burbidge, Mme. de Graaf, a large flower, perianth white, but the trumpet is delicate primrose, passing with age to white, an expensive variety, the early pallidus præcox, and Princess Ida, are all of importance too.

The following kinds are very beautiful. Moschatus is one of these; it is dwarf, varies in the size of its white flowers, and is suitable to grow in the Grass or cool slopes. W. Goldring is one of the best known of the white Daffodils, and a kind of much beauty is that named M. P. Milner, the growth dwarf and the flowers of a sulphur colour. Snowflake, a lovely white Daffodil, is still expensive. Tortuosus is a great favourite; it has a white twisted perianth and a trumpet touched with an apricot tint. This disappears as the flowers get older. The variety illustrated (Mrs. J. B. M. Camm) is one of the most charming of this group. It is not a very old variety, and is expensive; but those who can afford to indulge in comparatively rare bulbs should secure this. The flower is of elegant form, white, except the trumpet, which is very soft sulphur colour. It lasts well when gathered for the house.

A White Daffodil (Mrs. J. B. M. Camm).

CACTUS DAHLIAS.

Recently interesting and useful information was given in Gardening on these plants by "S." In his note he points out the kinds that need thinning and disbudding, as well as those that throw their blooms well out of the foliage, like Matchless and others of this type. After growing many kinds I consider it is necessary to know something of the character of a kind as well as its colour. It is disappointing to obtain a kind for garden decoration, and find that it does not throw its bloom out of the leafage, however beautiful the flower may be. Some may say you can disbud them; this is true, but then you are destroying a portion of the plant, to say nothing of the trouble involved. No class of Dahlias has so much to recommend it as the Cactus type and it is to be hoped raisers will keep in view the advantage of raising and distributing only those with the true Cactus type and that throw the blooms out of the leafage. I have often been disappointed, after seeing a beautiful kind at a show, to find when grown it was short-stemmed. It is worthy of note that most of the Pompon kinds throw their flowers well above the leaves on long stems (like White Aster, which is a lovely kind). This makes them well adapted for garden decoration and for cutting.

John Crook.

MONTBRETIAS.

This beautiful and useful hardy group is becoming popular for cutting, as the flowers last longer than almost any other kind in water. As clumps in borders they make a gorgeous display. In the herbaceous borders here, which are well sheltered, they are largely grown in clumps, where they flower luxuriantly and attain to the greatest perfection. The following are the forms grown: Montbretia crocosmiæflora, M. Drap d'Or, M. Etoile de feu, M. Phare, and M. Rayon d'Or. Montbretia crocosmiæflora increases so rapidly that the clumps have to be reduced every second year. They are all good varieties well worth growing. M. Rayon d'Or is one of the largest flowered varieties.

The soil is a dry sandy loam rather weak in vegetable matter, and the secret of success is not to disturb them too frequently—*i.e.*, only when the clumps get too large. Then it should be done with great precaution, because when laid out singly they are robbed of a mass of fibrous roots which surround the small bulbs and act as a protection against frost. The dead foliage also renders the same protection during winter, and should be allowed to remain till the spring. No mulch should be used, as it accumulates damp.

G. S. Macdonald.

Poltalloch Gardens, Argyllshire.

PLANTING TUFTED PANSIES FOR AN EARLY SPRING DISPLAY.

Well-rooted little plants, if put into their flowering quarters before the present month is out, providing the weather is suitable, will commence to blossom early in the spring, while if the planting be deferred until the spring or early summer the plants do not seem to succeed so well. I have already planted a collection, and propose to go on planting until the end of the present month, if not completed before. A much better effect is to be obtained if the plants are massed together in small beds and borders rather than by merely using them for edging. This was well illustrated last summer in the Royal Gardens, Kew. Several new varieties had been sent for trial, and these had been planted in groups, so that as they made growth and flowered a mass of flowers of each sort was seen and better appreciated than if the plants had been singled out and distributed about the border. Growers having gardens in low-lying and damp quarters should slightly raise the flower-beds, thus carrying off superfluous moisture. The Tufted Pansies are fond of moisture, but not too much of it. It has always been a rule with me to mulch the plants with some well-decomposed horse-manure a few weeks after planting, working this material well round the collar of the plant. In this way protection is afforded the plants during severe weather, and the rains have also washed in whatever manurial properties there may have been in the mulching material, and so have benefited the plants. When the spring comes round these plants have usually made numerous growths, which push their way through the soil soon after the first appearance of more genial weather. In a few weeks they become covered with buds and blossoms. It is well to remember at the time of planting that it is better to plant only the best sorts, as those of inferior quality need just as much attention and space as those of a superior kind, and the latter always give more satisfaction, and after all this is what they are grown for. Confine the selection to selfs of good colour and plants of dwarf, compact habit, including a few of the fancy and edged sorts to give a little novelty to the display.

D. B. Crane.

Shortia galacifolia.—What can it be that hinders so many expert growers of hardy flowers from succeeding with this handsome if humble plant? When I see it in some gardens and compare it with my plants I am half inclined to be vain, but I have nothing to warrant such vanity, having done nothing very special for them. I can only thus express my surprise that anyone should fail with healthy specimens. Now that the garden has been shorn of all its flowers and most of its greenery this beautiful evergreen, with its sombre yet rich tints, becomes more attractive.—W.

White Bush Poppy (Romneya Coulteri).—This during October was one of the most pleasing objects. The plants were in pots and had stood all the summer in the garden, but after one or two sharp frosts, when the buds seemed to remain firm and uninjured, the pots were taken into a cool greenhouse, and it is in this way I have got the superb blooms as well as the promise of some good seed, the capsules swelling fast. It is well known that in these northern parts this plant is not always sure to survive a severe winter, or only when protected by mats, Bracken, or some such dry covering.—W.

Nerine undulata.—This frail and pretty species has the important characteristic of being both free flowering and lasting a long time in good condition. This is always most noticeable in houses that are both dry and well ventilated, and in such the pretty pink heads are very charming. N. pudica possesses similar good qualities when grown under the same conditions.

ORCHIDS.

GROWING CŒLOGYNE CRISTATA.

(In answer to "Anxious.")

Cœlogyne cristata is one of the most useful of all winter-flowering Orchids. It does not succeed well for long together in a very high temperature, and being a native of the moist high regions of Nepaul it cannot bear much drought. At the present season there are some plants of this species that will be completing their growth and pushing flower-spikes; the development of these takes a considerable time from their first appearance. From this time and until the flowers open the plants should be carefully watered. Avoid keeping the compost in a saturated condition, and the syringe should not be used so as to wet the spikes, or they will turn black and decay. Each time a plant becomes dry at the root afford it a moderate watering, and when the flowers commence to open gradually diminish the supply. After the spikes are cut the plants then need a short rest, but sufficient water must be given to prevent undue shrivelling of the pseudo-bulbs. Plants of this Cœlogyne that bloomed late in the season are now making their growth. These will require abundant supplies of water, and must on no account be allowed to become dry at the root, as dryness at this juncture is oftentimes fatal to the growths ever attaining their wonted size, without which many will fail to produce flowers. Those that do bloom will bear very few in number. Old decayed bulbs should be cut out at once, but the decayed portions only of the leaves should be severed. The proper time to repot Cœlogyne cristata is about the middle of April, as at that period the plants commence to grow and make fresh roots, but it is not advisable or necessary to repot the plants annually. Like the majority of Orchids, they do not like to be disturbed oftener than is really necessary, but when the new pseudo-bulbs have extended so far as to get beyond the limits of the pot or pan, they must either be divided or have larger pots, for if the roots have no soil in which to descend they will cling to the outsides of the pots, where they can receive no sustenance except through the moisture afforded. In this way the bulbs become deficient in size and unable to produce strong flower-spikes. When repotting, select pans or pots of sufficient size to allow for several seasons' growth. It is important to give plenty of drainage, and for the compost use a mixture of peat and Sphagnum Moss and a few lumps of turfy yellow loam. During the work of repotting, place some thick pieces of crock or broken bricks in here and there amongst the compost. This will prevent stagnation and allow the water to pass freely away through the soil. In potting, keep the soil well up to the rhizomes and well rounded up about the rims of the pots. After any disturbance the pseudo-bulbs usually swell a little; but no harm will accrue if an occasional overhead syringing is given. It is a mistake to deluge the plants with water at the root to preserve their plumpness. When well rooted and the growths are progressing favourably, the plants should have almost unlimited quantities of water poured through the compost. After repotting and during the growing season, this species should be placed in a shady corner of the intermediate-house, and when well established give the plant plenty of light without actual sunshine. When the flowers commence to open, the plants should be removed to the coolest and driest part of the house. Any excess of atmospheric moisture when in bloom quickly causes the delicate white flowers to become spotted.

Culture of certain kinds *(C. Reader).*—The Orchids you mention—viz., Oncidium sessile, Phaius grandifolius, Dendrobium densiflorum, and D. aggregatum all grow well in a night temperature of 60 degs. The two first-named species should be placed on the shady side of the house, and the Dendrobiums where they may obtain plenty of sunlight. The Oncidium blooms during the early spring months, Phaius grandifolius also in the spring, D. densiflorum in May and June, and D. aggregatum in March and April. O. sessile should be grown in well-drained peat and Sphagnum Moss; the Phaius in rather large pots, which should be drained with 2 inches or 3 inches of crocks at the bottom, using good turfy yellow loam, a little leaf-soil, and a moderate quantity of silver sand. When well rooted plenty of water is necessary at all times. Dendrobium densiflorum does well in pots planted in a thin layer of peat and Moss. D. aggregatum thrives best in Teak-wood baskets, and should be suspended near to the roof glass. During the growing season both species require plenty of water, but during the resting season very little will suffice to keep the bulbs plump. For Cœlogyne cristata see answer to "Anxious."

ROSES.

Bright-coloured H.P. Roses.—Will you give me the names of the six brightest (scarlet or crimson-scarlet) Hybrid Perpetual Roses which are also vigorous growers? And also inform me whether the Noisette L'Ideale is double or only semi-double, and whether the flower is large or small?—N. B.

*** L'Ideale is a semi-double, of medium size only, and one of our sweetest-scented Roses. A. K. Williams, Annie Wood, General Jacqueminot, Mme. Victor Verdier, and Suzanne Marie Rodocanachi are good deep scarlet and vigorous growers.

Roses for hedge—distance to plant.—I see in Gardening that the Rugosa and Ayrshire Roses are recommended for a hedge, which will soon grow 8 feet or 9 feet high. I should be much obliged if you would kindly tell me how many trees I should plant to the yard, and what space to have between in order to get a good result? Would Meg Merrilies and Lord Penzance be good Hybrid Briers to mix with the Rugosas?—Bedfordshire.

*** We would not mix the Rugosas and Hybrid Sweet Briers. Meg Merrilies is a good scarlet Brier. Plant both Rugosas and Briers 3 feet apart.

Twelve good bush Roses.—Will you please give me the names of twelve good Roses to plant in bush form? On same soil I have Gloire de Dijon and Belle Lyonnaise doing well. I want some as hardy and similar in the bud to the above, but a variety of colour to cut for button-holes?—J. T. S.

*** Mrs. W. J. Grant, Papa Gontier, Perle des Jardins, G. Nabonnand, Homère, Mme. Hoste, Mme. Charles, Anna Olivier, Edith Gifford, K. A. Victoria, W. A. Richardson, and General Jacqueminot are good Roses for coat flowers.

Roses in cold-house.—An article in one of your issues induced me to plant a cold-house with M. Niel and Perle des Jardins, which have grown well and covered the roof. The house is 50 feet by 15 feet, span roof on brick walls, three ventilators, 3 feet 6 inches by 2 feet each, on each side of roof, five slides in each wall, glass ventilator in end opposite door. Now, a gardener here tells me I shall never do any good with them because there is not ventilation enough to ripen the wood, and they will always be prey to mildew. He also advises keeping all ventilators open, night and day, now. Some mildew is making its appearance, and the young leaves are getting dry and chippy also—from the winds, probably? I think I have read in your paper that mildew will do little harm to leaves now, seeing that they will fall shortly. I have tried sulphur and all inventions for the mildew, but they do no good. I am now withholding water from the Roses to get them to rest, as they are in many cases showing a few buds, and I cut a few blooms last week. The gardener's opinion is very disheartening, after all my expense in buying plants and making up the borders, and I should be glad to know whether my treatment is correct? I may add that, after leaving space for the roots of the Roses, the rest of the floor space is planted with dwarf-growing Chrysanthemums.—Marechal Niel.

*** There is not the slightest reason why you should not succeed with Roses in such a house as you describe, and you are treating them correctly. Keep them rather dry now, and as backward as possible.

Uprights for climbing Roses.—I am making a 7-feet oval Rose-bed on a small lawn, round which I want to have uprights at intervals for climbers and pegged-down Roses on the ground. Ought these uprights to be wood or iron? If the former, how could they be connected with each other? Should iron be recommended, I shall be thankful to be informed where any inexpensive ones suitable for the purpose can be had? Any hints as to the best way of pegging Roses will be gratefully received.—F. R.

*** It is quite immaterial whether wood or iron posts be used. The latter can be got from any dealer in wirework. Perhaps, if you look through our advertisement pages you will see what you want. We have found one of the best and cheapest fastenings for pegged-down Roses to be cut from faggots suitable for Pea-boughs, and a large number can be got from a single faggot.

Climbing Rose for greenhouse.—I am building a small greenhouse outside my drawing-room window, and wish to plant a climbing Rose on wall in bed of good soil. Aspect east, and, unfortunately, shaded from south sun by projecting wall of house; no sun after 10.30 or 11 a.m. Would Bouquet d'Or succeed in this position, or should I do better with Reine Marie Henriette? I have already Gloire de Dijon, Maréchal Niel, and W. A. Richardson on garden walls outside, so would like a new Rose, but would plant Gloire de Dijon or any sweet Rose most likely to flourish and bloom freely in this shaded position. No heat. I read your paper every week with close attention, and occupy small house and garden on the outskirts of Winchester. My garden is the solace of many lonely hours.—M. H.

*** You will find Reine Marie Henriette or Cheshunt Hybrid the most suitable for your purpose.

Roses in greenhouse.—Having six weeks ago purchased climbing Roses—W. A. Richardson, Niphetos, Mme. de Watteville, Mme. Lambard, Gloire de Dijon, Perle des Jardins—can I get them to flower in lean-to greenhouse, heated to 40 degs. at night, in 8-inch pots? Should I pot them now? They are at present in 5-inch pots, full of roots, and are sending out new shoots all over. Should these be allowed to grow on, or would you advise cutting some out? As I am only commencing Rose-growing, a few hints would be greatly appreciated.—Amateur.

*** Quite recently we have had a long article upon Roses in pots. Please look that up. You can pot on into the 8-inch size at once, and your temperature is high enough, if you can ensure it during very frosty weather.

Rose-hedge *(Subscriber)*—As you wish for a Rose-hedge, we should plant the Hybrid Sweet Briers. These will grow into a screen the second summer after planting, and be by no means a bad screen the first year. They can be as high as 15 feet, or as low as 6 feet. It is only a matter of cutting. We have seen a grand hedge of these made by fixing posts upon each side and stretching stout wires lengthwise. If you fix the posts 1 foot apart—*i.e.*, really making two temporary fences—the growth can be guided between them. Such a hedge is always sweet, carries a grand show of summer bloom, and is followed by an immense number of pleasing hips of deep scarlet during autumn. Even when the leaf is off, the growth is so dense that a good screen is still formed. Plant the variety named Jeannie Deans, and we are sure you will be satisfied.

Treatment of Marechal Niel Rose *(Grenadine).*—Please read our article upon "Climbing Roses," page 487, of October 23 issue. You had better thin out the weakest of your lateral growths now, but do not on any account cut back the two long shoots. You will gather from our notes how valuable that is. The same principle applies outdoors. We shall probably be giving an article upon pruning in due season.

Pruning Crimson Rambler Rose.—Will you kindly tell whether the Rose Crimson Rambler should be pruned or not? My master will not have it done, and it is making very long shoots. I want to take a lot of Rose-cuttings. Should I take them at the joint of last year's wood, or only from young wood?—A. E. G.

*** Your employer is quite right as to not pruning this variety. To prune it simply means cutting away much of next season's blossom, and this applies more particularly to the long shoots. If you want to root some cuttings, take them from side or lateral growths that are partly ripe,

and, if possible, with a small heel. Those made from longer wood can be cut off close below a joint. Your other query we are replying to a little more fully under its proper heading.

Removing Rose *(Sherborne).*—You can, of course, remove the Rose from the bed, but why not bend over the long shoots? No matter the variety; if you peg down or otherwise get long growths in a more or less horizontal position they will flower most profusely. Move the plant during November, whether for the cool greenhouse or not. Cuttings of ripened wood, severed just below a leaf, and from 4 inches to 9 inches long, according to the space between the eyes, will root freely if placed in a cold frame at once. A very sheltered border outside will also grow them, but it would have been much better done a month earlier. A frame is better than a house. We are glad you succeeded with the Tomatoes. It is always better not to attempt too many subjects in one house, especially when small.

VIRGINIAN CREEPER ON ARCH.

The photograph I enclose is that of a rustic arch, showing how an unsightly end wall of a

Virginian Creeper on arch. From a photograph by Miss C. H. Gunner, Holm Oak, Bishop's Waltham, Hants.

greenhouse may be beautified by the ordinary Virginian Creeper. The wall faces west and receives all the afternoon sun. The Creeper, when photographed recently, was a blaze of colouring. C. H. Gunner.

Holm Oak, Bishop's Waltham, Hants.

The illustration shows a good use made of a vigorous climber. We need not write further about this family (Ampelopsis), now grouped with the Vines, as the subject was fully dealt with and illustrated in Gardening, Sept. 25, 1897.

Gladiolus Childsi varieties (*A Constant Subscriber*).—These are strong and vigorous in growth, with fine dark, healthy green foliage, and spikes of blooms which measure from 1 foot to 2 feet in length. The flowers are very large, of much substance, and last a long time in perfection. The colours are very rich and varied, comprising many shades of white, grey, pink, rose, purple, scarlet, etc. Gladiolus are gross-feeding plants. They delight in rich soil and perfect drainage. The soil best suited to their requirements is composed of stiff, rich loam into which has been worked good, well-rotted dung. The corms should be planted early in March, at a depth of about 3 inches or 4 inches, and about 15 inches apart in the rows. Copious supplies of water should be given, especially if the weather is at all hot and dry. When the flower-spikes have been formed liquid-manure should be applied.

TREES AND SHRUBS.

THE EUCALYPTUS IN NORTH DEVON.

There will probably be little interest attaching to the circumstance here, as my garden is in the West of England, quite near the sea in North Devon, but resembling that of "Legis" in being very exposed and wind-swept; and his description of two trees of Eucalyptus globulus is an almost exact history of two which have lived in my garden through the last two winters, and are now most flourishing and beautiful. They are not so tall as those described by "Legis." Both are about 12 feet in height. But their tops were damaged by storms and they were cut back, otherwise the dimensions are nearly the same. I also propose leaving them in the hope of their weathering a third winter. But under favourable circumstances there can be no doubt this tree may live far beyond the age of four years. There is a fine specimen trained against the south-wall of the Ilfracombe Hotel, which covered a large space ten years ago, and is still, or was a few months since, in great luxuriance. It has also flowered, which is, I believe, very unusual in England. I should feel much obliged if any correspondent would kindly tell me why there should be such a remarkable difference in the growth of my two specimens as regards the upper branches, and in this last summer only? Both plants were raised from a packet of seed sold as E. globulus, and in the earlier stages of their growth no dissimilarity was apparent, nor is there now as regards their lower branches. But in the smaller of the two the upper limbs have become much more slender in character, while the leaves instead of sprouting rather stiffly direct from the stem have each developed a short stem; the leaf itself is of a totally different shade of green, and each one hangs down and waves almost as incessantly as the restless leaves of a Poplar. I enclose a branch of each kind gathered from the same tree.—Signet.

*** There is nothing unusual in the young leaves of Eucalyptus globulus being of a different shape and shade of green to the old ones. Up to a certain age or size of the plant, the leaves are in every case opposite, and of a light glaucous green. As the tree gets older and increases in bulk, the leaves, instead of being produced in pairs, are borne singly, and in shape are lanceolate, running to a very long, narrow point. The reason of the altered circumstance is that being a fast-growing tree its leaves are somewhat soft, and in its native home—Australia—the sun being so hot they are borne as shown in the specimen sent. By this arrangement you will readily perceive that very little of the leaf-surface is exposed to the sun as it strikes it at a different angle. It is one of the wonderful provisions of nature.

Moving Hollies 3 feet high (*Novice*).—The present is a very suitable time for pushing on with planting operations of all kinds. Showery weather is to be preferred to dry, windy weather. The plants should be carefully lifted with good balls of earth, and the roots protected from the wind. Holes should have been prepared for the reception of the plants, and, when they have been placed in position, the soil should be pressed quite firm round the roots. April is also a very suitable month for planting Hollies. The subject will be dealt with in a subsequent issue.

Shrubs of low growth (*B. C. W.*).—Amongst flowering trees of moderate height the undermentioned are likely to thrive in your soil: Magnolias, Pyrus of sorts, Prunus of sorts, Amelanchiers, Laburnums, Cratægus of sorts, Fraxinus Ornus, and the flowering Peach. Shrubs of medium height: Spiræas, Cytisus, Genistas, single Roses, Ligustrums, Indigofera Gerardiana, Cornus, shrubby Loniceras, Buddlea globosa, Olearia Haasti, Ribes, Hypericums, Yuccas, Cistus, Weigelas, Choisya ternata, Lilacs, Cydonias, double Gorse, Lespedeza, Daphnes, and Berberis.

Shrubs to hide ugly exposed fence (*H. J. J.*).—The undermentioned plants, though not all strictly climbers, are likely to prove satisfactory in your dry soil: Cotoneaster microphylla, Bridgesia spicata, Smilax, Jasminum officinale, Akebia quinata, Scarlet Trumpet Honeysuckles, Berberis Darwini, B. Wallichiana, Cassinia fulvida, Euonymus radicans variegatus, Kadsura japonica variegata, Raphiolepis ovata, Ceanothus of sorts, Photinia arbutifolia, and Pyracantha (Evergreen Thorn). Amongst Roses: Blairi 2, W. A. Richardson, and Aimée Vibert are about the best for your purpose.

Diplopappus chrysophyllus (Cassinia fulvida) (*M. E. T., Wallington*).—This is the name of your shrub. It is a native of New Zealand and perfectly hardy in this country. It forms a dense bush of moderately good habit. It thrives best in loam to which has been added a liberal addition of good leaf-mould. Perfect drainage is essential. Though hardy, it should not be planted in positions exposed to east winds.

Erythrina laurifolia.—Would Erythrina laurifolia grow against a stone wall facing south, about 10 feet high. Where could I get a good plant of it?—H. J.

*** Erythrina laurifolia is better suited for training against the wall of a cool conservatory. We have seen it killed in the open air, but if your soil is deep and of a sandy nature it might possibly succeed with you. At all events, straw or some like material should be placed over the roots and stem to protect it from frost. For plants consult our advertisement columns.

Propagating Hollies and Whitethorns.—How and when do you best propagate Hollies and Whitethorns?—Novice.

*** Hollies can be propagated in various ways, but we are inclined to favour propagation by cuttings. A bed of sandy soil made quite firm, and covered with handlights or frames if necessary. The wood (cuttings) should be hard and made quite firm at the base. Beyond an occasional watering and shading from the sun scarcely any other attention is necessary. The cuttings should be taken off in the autumn, taking care to use only a knife that is very sharp. Layering is a safe and good way of increasing the stock, but it is not always convenient to layer if the plants are very tall. Whitethorns are increased by seed, which should be buried in sand for a season, after which it should be sown in beds in the open air. Some growers prefer leaving the seed in the sand until the second year before sowing. The finer named varieties are generally raised by grafting in the spring on the common Thorn or by budding in July.

FRUIT.

GOOD DESSERT PEARS.

THERE are many Pears, but comparatively few of good quality. Many amateurs can grow Pears in a limited space, as the tree lends itself readily to various modes of culture, and fruits freely. Of late years cordon trees have come into favour, but all kinds do not like the dwarfing process, some of the stronger growers being too vigorous. On the other hand, many kinds do so well under bush or pyramid culture, the fruits being superior to wall fruits as regards quality, that this form of tree is most desirable for amateurs. Always procure the trees on stocks to suit the soil. Varieties are as follows, special attention being paid to quality and cropping:—

SOUVENIR DU CONGRES.—An early autumn fruit and free cropping. The fruits are very large, juicy, and melting. A seedling from the well-known Williams' Bon Chrétien, and in season during the latter end of August. It is excellent in pyramid or bush form, also valuable for orchard culture as a standard; but the fruit does not keep long. This variety is best double-grafted, as when on the Quince stock it is short-lived. If not grown thus it is best grown on the free stock.

WILLIAMS' BON CHRETIEN.—An excellent early fruit and a true amateurs' Pear, as it very rarely fails to crop. It bears freely when the tree is grafted on the Quince-stock, and is excellent for early dishes, though it soon decays. If a few fruits are gathered from the tree and ripened, the season is prolonged; indeed, it is not well to leave the fruits to ripen on the tree, as the flavour is impaired. I would advise growing this variety in bush form, with a short stem, as then the fruits are of better quality. It will grow in any position, and is not fastidious as to soil, doing well where others fail.

BEURRE D'AMANLIS is another excellent variety, and should be in all gardens where good September Pears are valued. This well repays on wall in cold soils, but in other succeeds well in bush or pyramid form or grown as a cordon. A large fruit, a good bearer, juicy, rich, agreeable in flavour, fine on the Quince, and of best flavour grown from trees in the open. It succeeds well as a standard in some localities.

FONDANTE D'AUTOMNE. — A smaller fruit than the preceding, of medium size, deliciously sweet, and a great bearer. It is in season early in October, and makes a handsome tree when grown as a pyramid on the Quince-stock. It is also good in standard form, but for small gardens the bush or pyramid is most suitable. It rarely fails to crop, and should be in all collections.

LOUISE BONNE OF JERSEY cannot be omitted from any list of good Pears. I admit a few do not like the peculiar flavour of this fruit, but it is one of the very best autumn Pears. I prefer it in bush or pyramid form grown on the Quince, and it is an excellent market fruit, as it rarely fails to crop. The fruit is very fine on walls, and in cold or wet soil it is well worth wall culture, and is most reliable grown as a cordon or espalier, as it soon fruits. The tree is a good grower, not gross, and makes a pretty pyramid. The fruits are handsome, and in season during the end of October and early November.

MARIE LOUISE —This is a fine Pear, though with me less free than Louise Bonne. On the other hand, mine is not a good Pear soil, and Louise Bonne succeeds where others fail. I do not advise Marie Louise in cold, moist soils; it is specially good given wall culture, and not fastidious as to locality. It forms a fine bush or pyramid, also a cordon or espalier. As shown in the illustration, it is most prolific, and best on the Quince, but grown on the Pear-stock needs root-pruning every few years. I prefer it double grafted for bush or wall culture. Treated thus it is more prolific, and wood less gross. It is a profitable Pear on account of its fertility and quality when grown well.

EMILE D'HEYST is a splendid Pear, and, as regards crop, quality, and growth, is with me superior to Marie Louise. I have never seen it fail in any form. It is a splendid cropper and equals Marie Louise in quality and bears larger crops. The flesh is tender, rich, and sweet, thrives grandly on the Quince-stock, and in season early in November. I do not think any of the above varieties can equal this if size, quality, and crop in diverse soils are considered.

Pear Marie Louise.

DURONDEAU is a large, handsome fruit, but it is not of first quality, although not by any means an inferior fruit. It is of handsome appearance, crops freely, and vigorous in growth—well deserving of a wall, and fertile either on the Pear or Quince-stock. It succeeds in every garden—in fact, will grow where others fail—and specially good for sale; in season in October and November.

PITMASTON DUCHESSE must not be omitted. In quality it is not of the best in all seasons, but most growers have a weakness for fine fruits, and this is one of the largest grown. It is best flavoured grown on open trees, and does grandly on the Quince-stock. I include it on account of its free cropping and being reliable in poor, gravelly soils. It is always fruitful if grown on the Pear, and is in season early in November. In fine autumns this fruit is really finely flavoured, and the tree, though a strong grower, makes a nice bush or pyramid.

DOYENNE DU COMICE, the finest Pear for flavour grown, is not quite as prolific as one would like—at least, not in poor soils. It makes a fertile pyramid, bush, or cordon on the Quince, and likes a warm, well-drained soil. In cordon form it rarely fails, and grown in various aspects it gives fruit into December, with cool storage.

NOUVELLE FULVIE, a Pear not as well known as its merits deserve, is an excellent late fruit. I admit its appearance is not taking, but the fruit is juicy and rich, and keeps well; the trees bear regular crops. It keeps into January, at a season when good Pears are scarce. This is worth room in all gardens, grown on the Quince-stock, but should be left on the trees as late as possible.

JOSEPHINE DE MALINES is an excellent late fruit, not large, but good in the spring, of delicious flavour, and succeeds well on Quince or Pear. The best fruits are got from bush or pyramid-trees, and it is well worth a wall in cold soils or northern localities, but needs late gathering and care in storage. This variety should be in all gardens, on account of its good keeping qualities. W.

GROWING MULBERRIES.

(IN REPLY TO "W. W. D.")

WE gladly give you a few hints on the Mulberry. There are few varieties, but once the trees are established they give little trouble. The Mulberry is a handsome tree too. As regards the soil, yours is not a bad one if not too clayey—that is, too stiff. The common London clay is not at all suitable; on the other hand, the tree succeeds in a rich deep soil, rather light than otherwise. We have some fine old trees in a gravelly soil, but they lack the luxuriant leafage of those in better ground. On the other hand, even a gravelly soil is more suitable than a heavy wet clayey one. We find the trees in a fairly light (or well-drained) soil not at all fastidious, but free drainage is important, and in your clay land, though light, you would do well to give young trees plenty of drainage. This you may readily do by trenching the land, and incorporating with your clayey soil such aids as old mortar or lime rubble, road-scrapings, or burnt soil; in fact, anything that makes the soil more porous. Of course, much depends upon the site you intend to plant, as the trees do not grow freely at the start unless assisted. On the other hand, the Mulberry does not thrive in a dry, shallow soil, as the fruits drop before they come to perfection. This you will not be troubled with; but it is essential to give the ground such aids as advised.

It is remarkable how well this tree does in the London area once well established, whereas in some parts of the kingdom we have seen poor trees on walls given every attention. We prefer planting a fair-sized tree, if it can be secured, and you will do well to make a large hole. Take out the top soil, place on one side, then remove the lower clay—say, quite 2½ feet to 3 feet; then fill in with the mixture advised, adding any lighter soil, such as spent manure, old leaf-soil, and mix with the top spit, removed for covering over the roots. Plant firmly—that is, well tread the soil—and after covering take care that it is in a workable condition—fairly dry and not sticky. The size of the hole at planting, of course, depends upon the size of the tree; but there is a great gain in having a good amount of rooting material at the start, from 4 feet to 6 feet across being none too

much space. Trees thus planted should in after years give fine fruits.

The tree after planting should be supported and staked. Pruning in after years is simple. The best mode of culture for a large tree is as a standard. This gives shade and prevents animals from damaging the trees. On the other hand, it is a good way to grow the tree in bush form where room cannot be given for a standard. In forming standards the upright shoot or stem should be cut at the desired height needed for head room, allowing three shoots to break at the top. These will form the principal limbs or branches, and from these others proceed, care being taken to thin these to prevent crowding. If the growth is well regulated, from each of these main shoots a nice head will form, and in after years there will be little pruning, merely shortening or thinning of shoots. The Large Black is the finest and doubtless the most prolific. The White is not so prolific. There is a new kind recently introduced from Russia, a white fruit, and a pendulous or weeping grower, but it is little known.

STREAMSIDE VEGETATION.

Running water in the garden opens up an endless vista of possibilities in the grouping of flower and leafage along its verge; dwarf little creeping plants to fringe with lowly blossom the edges of the tinkling rill; tall spires of bloom and noble curve of leaf to border the statelier stream that moves sedately on its course; great Ferns to oversweep the trembling lip of the cascade ere its waters plunge in silver to the pool below. Sometimes, as in the accompanying illustration, the garden boundary is formed by running water; a mill stream that waxes and wanes, is vocal or silent as the mill-wheel moves or rests. Here, on the farther bank, to which the rough rustic bridge gives access, Nature has been unrestricted, and has spread above the water a rampart of living green; facing this wild growth on the garden side, the bank above the flowering Grasses is crowned with an irregular line of white Michaelmas Daisies, holding in their widespread stars and in the unrestrained freedom with which their further flower-sprays stretch athwart the stream, throwing their blossoms into strong relief against the dark background, a suggestion of unconventionality in keeping with the surroundings. Further back, looking over the white ranks of this advance guard of cultivation, stand in the tilled ground the tall Sunflowers. Only hardy flowers should be grouped by running water, and the grouping of these should be as far as possible natural, so that from earliest spring to the commencement of winter, where the contour of the banks admits, the streamside shall form a fair setting for fair flowers. Snowdrops, Scillas and Narcissi, Snowflakes, and Stars of Bethlehem begin the year, followed by Irises, the Japanese I. Kæmpferi, I. sibirica, the bulbous English and Spanish (I. Xiphion and xiphioides), the tall I. orientalis or ochroleuca, I. aurea, and I. Monnieri, all three similar in manner of growth and often attaining a height of nearly 6 feet, and very valuable in colonies by a streamside, the German Flags, especially I. pallida and the variegated Water Flag, and lastly the beautiful I. stylosa, blooming at the coming of winter. Libertia grandiflora is another subject that flowers well by the water, and Spiræas should be freely used, the tall S. Lindleyana, S. ariæfolia, and S. flagelliformis, while of the herbaceous section there are S. Aruncus, S. palmata, S. venusta, S japonica, and S. Filipendula. Many of the Lilies do well in the neighbourhood of a stream, especially L. pardalinum, L. canadense, L. superbum, and L. Humboldti, while herbaceous Phloxes, Pyrethrum uliginosum, Starworts, Day Lilies, Arundos, and Bamboos all have beauty of colour or of form to recommend them, and thrive best near water, and there the tall Campanulas hold their bells in perfection longer.

F.

The following has been sent us by Mr. W. G. Holland, Glan Alyn, Gresford, who kindly forwarded the photograph from which the illustration has been prepared:—

"The illustration shows a border of white Michaelmas Daisies alongside the tail of the Gresford mill-stream running through this garden. The plants have been undisturbed for some years. A rustic bridge crosses the stream at one end of the border; the other end is terminated by a summer-house built on a stone bridge over same."

Starworts by the side of a mill-stream. Engraved from a photograph by Mr. W. G. Holland, Glan Alyn, North Wales.

HOUSE AND WINDOW GARDENING.

ARRANGING FLOWERS IN THE HOUSE.

Flower decoration in the house is of great interest to those who care for their gardens. Unfortunately, however, the flowers are often so badly arranged, and placed in such unsuitable jars, that it would be almost better to dispense with them altogether. Many regard the kind of vase the flowers are placed in as of little importance so long as it will hold them, but many, I feel sure, will agree with me in recognising that the beauty of flowers when arranged depends greatly on the vase—whether suitable or otherwise. I well remember seeing an old grey-green jug full of the brilliant blossoms of the double crimson Pæony, and another of an old ginger-jar, such as is within the reach of anyone, filled with a delightful Japanese-like arrangement of branches of Peach-blossom. Such simple vessels as these are often the most useful for flowers, being just what the latter require to intensify their beauty. The most important part in arranging flowers is the one that is usually overlooked—I mean their habit of growth; it is quite hopeless to expect flowers to look well cut if they are crammed together without a thought given to their natural growth. They want plenty of room, and the stalks should be left their natural length. If glass receptacles are used, let the vase or whatever form they take be without pattern and of a soft, clear colour. Almost every flower looks well in colourless glasses, but let the glass be of simple, graceful shape, with no "ornamentation," which is seldom artistic and oftentimes positively unpleasant. Pottery is often effective with patterns, that is if they are subdued in colour and conventional in design. There is nothing much more beautiful than a quaintly-figured bowl full of Roses, and Roses of all colours blend so well together; but best of all flowers for the house is the Tea Rose, with its finely-coloured foliage and crimson stems. In these days, when flowers get more and more varied each year, there is no lack of material, whilst we also have at this season an abundance of berries for the house. The bright Winter Cherry (Physalis), and orange-red berries of the Gladwin Iris, not to mention the Berberis and Honesty, make a delightful bouquet, lasting through the winter months.

A charming autumn flower is the Starwort (Aster) in its great variety. There is nothing to surpass the dainty blossoms and delicate colouring from pale lilac to a rich colour that is almost purple. There are also several white varieties which are extremely pretty, the chief being Aster vimineus, its tiny star-like blossoms having a distinct effect.

In November, Chrysanthemums, with their range of quaint and interesting flowers, from pure white, touched with Apple-green, through all shades of amethyst to golden-yellow, bronze, and rich crimson, are welcome flowers for decoration. A vase of clear, golden-green glass, filled with the red-gold blossoms of Chrysanthemums, makes an effective decoration. Another good effect is that of a blue and white china or pottery jar filled with purplish-mauve Chrysanthemums. When I say mauve I mean the various tints of amethyst, not the dull, harsh magentas that are, unfortunately, so often seen. Flowers of this colour should never be used for rooms. Chrysanthemums are particularly suitable for patterned jars, provided the pattern is not obtrusive. It is the flowers we wish to see, not the pattern or the jar.

Of course, those with large gardens have many opportunities of getting beautiful things. Very charming are the red and purple colours of the Bramble, which, in conjunction with the snowy tufts of the white Clematis and Rose-hips, will make a change, and a pleasing one too. This arrangement will preserve its freshness over a long season. When arranging flowers always use their own foliage, for there is none other that suits them so well. Never put Maiden-hair Fern with hardy flowers, as it is entirely unsuitable, and only serves to give one a false impression of the subject; Maiden-hair Fern should be kept for hot-house flowers alone. I do not greatly care for forced plants; they seem to lack the character of outdoor things, and if I were given the choice between a bunch of Daffodils and one of exotics, I should unhesitatingly choose the former.

As regards winter flowers, nothing is so precious for decorations as the Winter Sweet (Chimonanthus fragrans), of which a few sprays will fill a large room with sweet scent, and also the yellow winter Jasmine, a flower that will keep bright and fresh for days. Its flowers open perfectly in a room, and their fragrance is sweet. Even a spray of one of the many charming Ivies is acceptable, for in winter days nothing but a rather long purse will get many flowers. Never buy the crimson-tinted leaves of the Berberis so much sold in the streets about this time. Their intense colour is got by dyes—a miserable deceit. We not only lose the natural colour of the leaf, but the horrible dye affects any flower brought near it. Christmas Roses will shortly be open—those quaint flowers that never look so well as in an amber-tinted glass. A bunch of winter Violets in a small brown jug is an artistic and beautiful arrangement, and that is what cannot be said of many associations in expensive ugly jars.

A. E. C.

Planting Carnations (*W.*).—By all means in the spring. Keep the plants over the winter in a cold frame.

INDOOR PLANTS.

LILIUM HARRISI.

Many failures have to be recorded with this pure white Lily. Sometimes the bulbs refuse to start into growth at all, or if three or four are placed in one pot some will, perhaps, start weeks before the rest, those remaining dormant the longest usually being the weakest, and often failing to develop perfect blooms. I must confess to having had indifferent success with L. Harrisi for a year or two, but think I have now discovered its particular wants. One and the chief is that the bulbs be potted as early as possible after being received, as bulbs left in shops or on shelves in gardens for several months invariably shrivel and lose much of their weight, after which they do very little good. The same remark applies to all sections of Lilies. Harrisi also seems to need rather deep potting, say from 2 inches to 3 inches of soil over the bulbs, as if plump when put in, if left so that a portion of the crown is visible, shrivelling, more or less, takes place. Further, the soil in the pots must be kept pretty dry from potting time until new growth is, say, an inch long, and even then only small quantities of water must be given till roots are fairly numerous. Neglect of this rule generally ends in basal rot. I find, also, that stiff, non-porous soil does not suit it, or, at any rate, to be sure of the formation of young roots at the start, a good quantity of heavy sandy soil must surround the bulbs; in fact, it is a good plan to embed each in silver-sand and leaf-mould. Old gardeners who grew fine beds of those beautiful old Lilies lancifolium rubrum and album used to mix abundance of leaf-mould in the beds each season, some using road-grit or the sweepings of walks and drives. Plenty of light is likewise needed or a weak, elongated growth is sure to follow. Green-fly must not be allowed a footing, or in a very short time the foliage turns sickly and seldom recovers. Some say that the bulbs will flower twice in one year, but I find that the bulbs, after having flowered in pots, do not seem to be of much use.

H.

Lilium Harrisi. From a photograph by Mr. W. G. Bevan, North Road, Devonshire Park, Birkenhead.

Mr. W. G. Bevan, who kindly sent the photograph, says: "The specimens of L. Harrisi, which I grew this year, I have been told were exceptionally fine. I have never seen any so large. The largest flower measured 7¾ inches from tip to tip."

A FEW PLANTS FOR UNHEATED GREENHOUSES.

(In reply to "Holmes.")

Our correspondent has one of the above, and as several querists have recently asked for a few hints upon the most suitable subjects for such, we give a fuller reply than usual. One of the safest plants to grow are pot-Roses, supplementing them with such hardy and half-hardy subjects as Deutzia gracilis, Spiræa japonica, Lilacs, and others. Fuchsias may also be grown in such a house, but would not be gay during any of the winter and very early spring months. Then there are bulbs of many kinds, especially Tulips, Hyacinths, and Narcissus. None of these are expensive, and by a little care one may have quite a showy house without the aid of fire-heat. Bulbs could be potted in October, plunged in ashes, and brought into the house early in the year. Deutzias, Roses, and other flowering shrubs should be potted a month later, and introduced to the house at once, standing them beneath the bench for three or four weeks before full exposure to light. The same plan could be followed with Spiræas. Then we have several very ornamental plants of the same class, as Araucaria excelsa, Aspidistras, Aralia japonica, and Latania borbonica, all of which would do in an unheated house.

Several of the Echeverias and Cactus might be used, also the Myrtle, with such climbers as Clematises, Passion-flowers, and Ceanothuses. The main points are to select half-hardy subjects, or else those of the Deutzia gracilis type, that will bear a slight frost, and yet will come on well with only a little protection. Ventilation and the avoidance of a damp atmosphere are the chief drawbacks to unheated houses. Our aim should be to keep the inmates as hardy as possible from now on to the end of February, or they run a great risk of frost during one week and comparatively warm atmosphere the next. Most of our hardy bulbs will give a gay winter display, and these will last for colour until such as the Zonal Pelargoniums, Primulas, and Fuchsias are again in flower. The Tuberous-rooted Begonias can be potted in March, and would give a good summer and autumn display. We should not lose sight of the fact that we cannot safely force subjects without artificial heat, and that it is only as a protection that we can depend upon such a house.

GLADIOLUS "THE BRIDE."

This is one of the most useful of all the early-flowering kinds, and is grown for market by the thousand. Those who live on the south or west coast should lose no time in getting their bulbs planted in outdoor beds, for, if kept until the danger of frost is over in spring, all the virtue is dried out of them, and the growth will, of necessity, be of a very weakly character. It is far better to plant now, placing the bulbs 5 inches or 6 inches below the surface of the soil, and then, as soon as severe frost sets in, cover the surface of the beds with litter, so as to exclude the frost. If mild weather follows, and the young growth pushes right through the covering, it is better to let it remain, for even if the tips of the leaves get cut off by succeeding frosts no harm will ensue. They will soon outgrow the check in spring, and flower magnificently. Those who require white flowers early in spring will find this one of the best bulbs for growing in pots or boxes, sheltering them from severe weather by a covering of cocoa-nut-fibre or ashes until the growth pushes through the soil, when they must be transferred to a cold-house or pit, and kept free from frost. By bringing a few at a time into gentle heat, a very long season of this useful flower may be ensured, and for any of the purposes for which white flowers are in such great request it cannot be surpassed, even by much more expensive bulbs. I have had some clumps out-of-doors that occupied the position for several years, and spread out into large masses. These always pushed up their leaves in September, but by placing some litter around them they always pulled through even severe frosts, and soon outgrew their weather-beaten look in spring. They gave by far the finest spikes of bloom that I had; in fact, they are much hardier than is generally supposed.

J. G., *Gosport.*

KEEPING BEDDING PLANTS DURING WINTER.

In reply to "A. E. G." and others.

Many try to save their bedding plants for a second season, and in most cases there is little reason why they should not succeed. The Zonal Pelargonium or "Geranium" seems the subject most generally tried. Simply lift when a slight frost has appeared, trim off coarse, sappy growth and a few of the outer leaves, pot into a sandy compost, using small pots, or place several round a larger pot or into a small box. Give a fairly good watering and stand them in the cool greenhouse. A few days later pick off decaying matter, but never keep them wet at the roots, and where possible let them be upon a shelf or as close to the glass as you can. Fuchsias may be lifted and treated the same, but when the leaf is off these will stand beneath the greenhouse bench until early next February, and will bear keeping even drier than the "Geranium." Lobelias are best if a few are lifted and a little sandy soil placed around them after cutting down to within a couple of inches. A few weeks later pull the plant to pieces and prick each little portion with roots into boxes or pans. You will not want many, as these can be parted again into half-a-dozen or more early next spring.

The Heliotrope or Cherry-pie can be lifted and treated to a little warmer position than the "Geranium," and with a very little more water. A few of these are ample, as they can be so readily increased in the following spring. Calceolarias should have been attended to ere this, and can be best kept by taking off cuttings of soft growth, and inserting these in a cold-frame or pit just previous to frost. All they need is protection from sharp frost and a sandy compost of good loam. Verbenas should also be rooted in the same way, except to give these a greenhouse temperature from early in October. Ageratums and several more may be kept in the same manner, and are not only less trouble, but keep better and take up much less of our valuable winter room. Burn the old stems of these. Pansies may be classed with the Calceolarias; so, too, can the half-hardy Sedums and Echeverias, which only need their offsets taken and placed in a cool frame of very sandy compost, giving air upon all favourable occasions.

We now come to a few tubers, such as Begonias. These must be lifted, allowed to lie upon a bench until the growth comes away readily, and then stored in sand beneath the greenhouse bench, but not allowed to get wet. Dahlias and other half-hardy roots, such as Salvia patens and Lobelia cardinalis, may be stored in a cellar or frost-proof shed, and there is no better material to store them in than finely-sifted ashes.

Winter-flowering Begonias.—In your issue of October 2 is an interesting note and a capital illustration of Gloire de Sceaux, but as no other winter-blooming variety is mentioned I thought the following list of twelve might be appreciated by some readers: Polyantha, soft pink; Paul Bruant, light pink; Carrieri, pure white; Dregei, syn. Caffra, white; fuchsioides, syn. miniata, bright red; multiflora, bright coral-red; Gloire de Lorraine, rose; insignis, lilac and pink; odoratissima, bright rose and sweet scented; semperflorens rubra, white, edged with red; semperflorens and Dr. Chassagny, large carmine-rose. They are all very easy to grow in the ordinary greenhouse, and make very pretty, useful winter plants.—P. U.

Treatment of Violets in frames.—I am under the conviction that a large quantity of frame Violets come to grief through being mismanaged in autumn. Many growers treat these as if they were tender plants—*i. e.*, by keeping them close when first lifted and placed in the frame. No greater mistake could be made. By so doing the leafage gets tender and soft, and when the severe frost sets in this suffers. Should the winter be mild the plants damp off. My method is to lift the plants, placing them on spent hot-beds, giving them a thorough soaking of water, and keeping the lights off as long as possible. At the end of October the plants will be full of bloom, and the light has never been put over them. It is a mistake to give much water in winter.—J. Crook, *Forde Abbey Gardens, Chard.*

HARDY ARUMS.

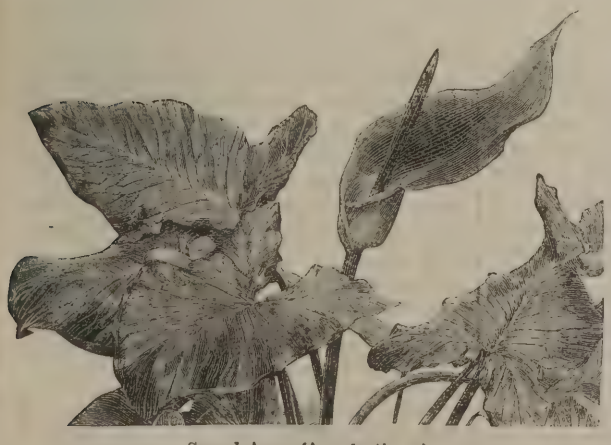
Though not beautiful in the true sense of the word, the various species of Arum that are either perfectly hardy or, with a slight protection, may be grown in the open garden are undoubtedly striking in their general aspect as

Italian Arum (A italicum).

well as singular and interesting. The "Lords and Ladies" or "Cuckoo Pint" of our hedgerow or copses is familiar to everyone who knows anything at all of country life. Indeed,

The British Cuckoo Pint (A. maculatum).

this very plant is not without its attractive side when the scarlet fruit has attained its full colour. Taken as a whole, the best positions in the garden for these things are the margin of



Sacred Arum (A. palæstinum).

the shrubbery, the woodland in such parts where the Ivy carpets the ground, or in any spare nook in the hardy fernery. In any of these positions the plants will be at home, especially if the soil be a sandy loam. The plants are usually increased by division of the root, though seeds will also be found useful when it is desired to freely naturalise any of the species in the woodland or shrubbery. The following are among the most useful of the hardy kinds :—

A. crinitum is one of the most grotesque of the hardy species, and of its remarkable bearing a good idea may be gathered from the picture. This species should always be planted in warm and sheltered positions where some natural protection may be afforded it, as it is not perfectly hardy in all winters. One of the most distinct features of this species is the great size of the spathe and the remarkable way it is mottled or freckled. A native of Syria, Mesopotamia, and other parts.

Dragon's-mouth (Arum crinitum).

Dragon Arum (A. Dracunculus).—This species is of taller growth, attaining to 2½ feet high when in good, deep soil and a suitable position. It is a very curious plant, the stem heavily marbled with black, as are also the leaf-stalks, the growth more erect, the spathe ovate and pointed at the tip, and of a purple-brown colour. South Europe, etc.

Italian Arum (A. italicum) is a useful and pretty kind by reason of its variegated leaves, that each attain a foot or more high. In greater part the cordate, hastate leaves are dark, shiny green, and occasionally blotched with white. The spathe is of a greenish-yellow hue, the club-shaped spadix yellow. This species is also very pretty in the autumn when its clusters of berries are fully matured, when they are of a bright scarlet hue, and for this reason it is one of the most useful for naturalising in rather moist spots. There is a variety of this plant called A. i. marmoratum in which the marbling of the foliage is more clearly defined.

Lords and Ladies or Cuckoo Pint (A. maculatum).—A British species with arrow-shaped leaves, the spathe nearly erect and spotted with dull purple, the spadix somewhat similar in colour. The species is scarcely a foot high and well adapted for the wild garden.

Green Dragon Arum (A. Dracontium .—This grows freely in the moist and swampy districts of Virginia and New England. Its much-divided leaves, held on foot-stalks about 2 feet long, are veined and tinted deep purple. The spathe is of a greenish colour, trumpet-shaped below, with a slightly hooked limb ; the termination of the spadix is extended into a long, gradually

Dragon Arum (A. Dracunculus).

narrowing point, exceeding the spathe in length. This is a handsome species for a warm corner.

A. TENUIFOLIUM, A. GRAMINEUM, and A. SPIRALE are three species that form a group by themselves. The first is an Italian plant, the second North African, and the third a native of China. All have narrow Grass-like leaves, with parallel venation. The flowers are not by any means showy, nor do we deem it necessary to record more than their names as forming a very distinct section of the family.

THREE-LEAVED ARUM (A. triphyllum) is a native of North America, and may be taken as typical of the group, in which the leaves are divided into separate lobes. Here, as the name indicates, they are three in number; the spathe is trumpet-shaped below, the limb terminated by an acute point, which gracefully bends downwards over the mouth and is of a purplish colour. The terminal portion of the spadix is club-shaped and deep purple. As regards the hardiness of this plant, Mr. Wood, of Kirkstall, Leeds, writes in his book, "Hardy Perennials," page 133, that—"There is a doubt with some as to the hardiness of this plant; in my mind there is none whatever. It is no stranger to frosts in its habitats, but I do not found my conviction on anything but my experience of it. It has been grown freely exposed for two winters. Sometimes the frosts must have gone as far down as the roots!" A. triphyllum zebrinum is a handsome variety. In single—indeed, I do not think we had a double one then—the sepals red and well reflexed, and the corolla broad and of a bluish colour. That was the exoniensis of half-a-century since. That, too, was the day when the pretty Venus victrix was a commonly grown variety and Dr. Jephson one of the finest of the whites. It was the great days of fulgens, Dominiana, corymbosa, etc. I do not see any mention of F. magellanica, a fine hardy variety that used to grow well in Middlesex.—A. D. *** In the Kew list F. exoniensis is given as the same as F. corallina. F. magellanica is a synonym of F. macrostemma.

THE GERMAN IRIS AND ITS VARIETIES.

AMONGST the most splendid of garden flowers is the German Iris, and our illustration shows how well it succeeds near such a large city as London. The plant seems impervious to smoke, and many clumps in suburban gardens reveal its usefulness for massing in gardens in which few things so rich in colour and handsome in growth as this will succeed. It is by boldly massing it that the richest effects are obtained.

This type of Iris is not grown well in gardens—at least, poorly represented, as there are many beautiful kinds besides the ordinary blue species. This is a charming flower, but it is well to have as much variety as possible, especially of such bold, handsome things. A few varieties worth growing largely are the following, and may be

Group of the Purple Iris. From a photograph by Miss Clara Wardlow, Enmore Park, South Norwood.

it the purple colour is clearly defined into stripes alternating with white.

A. ORIENTALE.—A native of the Crimea, is a singular plant, with fresh green leaves, and a tall spathe, ivory-white, delicately tinted with soft green near its twisted apex. A variety of it is named albispathum.

SACRED ARUM (A. palæstinum), as the name suggests, comes from Palestine, and was introduced in 1864. It is usually grown in the greenhouse, and is the least hardy of the group. It is a striking curiosity when in bloom, the dark chocolate spathes rising above the dark green leaves, whilst the club-shaped spadix itself is of an interesting colour, shining as if black-leaded. In general habit the plant is not unlike the wild Arum of Italy. When growing it in the greenhouse, the usual routine of greenhouse culture, as adopted in the successful growth of Richardias (Arums), is suitable to this sombre-hued species from the Holy Land.

Fuchsias.—In the description of hardy Fuchsias given on page 482 I notice that Fuchsias corallina and exoniensis are given as identical. That is very different from my knowledge, when in a large garden in the South of England almost fifty years ago we had growing as specimens in tubs both corallina, a very long-leaved, distinct variety, and exoniensis, distinct from the other, forming a handsome specimen, having lighter and broader leafage, flowers accepted as the finest in a long list, many of them poor in colour: Queen of May is a delightful flower. It has been described as a "Red Germanica," not inappropriate, but the colour is not red. The falls are rose-lilac, and the standards of similar shade, but with yellow veins. It is distinct and in every way a good garden Iris. A noble yellow is Aurea, which must not be confounded with the species of the same name. Both standards and falls are of the same golden hue, very effective and rich when seen in a mass. More popular than either of these is Mme. Chereau, grown largely for the market. The flowers are distinctly coloured, both standards and falls white, feathered at the margin with a delicate violet hue. It is useful for decoration, and grows freely. Victorine, deep purple and white, is a splendid kind too. L'Innocence may be recommended, the standards white, also the falls, but they have a veining of yellow. Darius completes this small section. This has yellow standards and the falls are purple, with a margin of yellow and white reticulation. Those who intend growing the germanica Irises should select these, not forgetting also I. pallida and the beautiful variety dalmatica. Irises like a good rich soil, open position, and plenty of sunshine. When in a thoroughly well-prepared staple they will succeed well in the hottest places, and provide plenty of flowers for the house. It is a mistake to disturb the roots often, and few plants resent interference more than this class of Iris, and when transplanted through overcrowding it is quite two years before they commence to bloom again satisfactorily. The best time to plant is immediately after flowering. In gathering Iris flowers always cut them when not quite fully expanded. They open fresh and clean in water, but, owing to the frailty of the segments, get much damaged when cut quite open.

THE KITCHEN GARDEN.

WINTERING SEED POTATOES.

ALTHOUGH there is a common belief that seed Potatoes obtained from diverse soils or places produce, when planted, better crops, I have much greater faith in the utility of keeping the tubers in a thoroughly healthy and restful condition during the winter, as in that way alone are the best features of the sets retained until planting time. It is too little the rule to set aside the seed tubers in the autumn, when crops are lifted, although there is for that purpose no better or more convenient time. Those who have not taken that precaution should at once go over their stocks and select their seed tubers, putting them into boxes of shallow construction, or else laid out thinly on shelves in a cool, airy place. Whilst Potatoes to be eaten need to be kept from light and air, those to be used for planting, on the contrary, need exposure to light and air to harden and thoroughly mature them. So hardened, these tubers will withstand a low temperature much better than will those not exposed; but, in any case, it would be unwise to allow them to be left to the tender mercies of frost. A temperature, that in winter ranges from 35 degs, the lowest, to 45 degs., the highest, until spring approaches, is best, as being most restful and little subject to variation. When Potatoes are kept in a store where the temperature goes down materially below freezing-point, the tubers being saved from harm by covering up, and then with thaw it goes up to 50 degs., the variation is exceedingly trying, and produces what is called sweating, or a waste of sap, which has a weakening effect. In the same way, if the temperature be too high—say, ranging from 40 to 50 degs, —not only is growth premature, but the dry air induces early shrivelling. Ordinarily, a north room in a house affords capital storage, as there is an even temperature, and should severe weather come, the whole of the tubers, especially if in boxes, may be stacked against an inner wall, and be covered up securely so long as danger exists. My own practice is to keep them in handy, cheap, yetstout boxes exclusively. These are some 14 inches by 12 inches inside, and 5 inches deep. The side strips are less in depth, thus allowing quite ¾ inch space for light and air to enter top and bottom, at the sides, when the boxes are stood on each other. The ends are of ¾-inch wood, and into the tops, so as to form a neat yet serviceable handle for each box, is let in a stout strip from end to end. Such boxes cost a mere trifle, will endure many years, can be used as baskets for planting from, may be in hard weather stacked closely one on the other, or in open weather be quickly stood out thinly, and each one will easily hold 14 lb. of seed tubers. Amateurs and cottagers would find such boxes of great service in severe weather, as if kept in a shed or outhouse during temperate weather, they could be carried into the house for security in a few moments in hard weather. Under any conditions of storing seed tubers, even the later ones, will throw shoots. When the tubers are kept in the dark and close these shoots are blanched and elongated, and are therefore useless, having to be rubbed off prior to planting. When the tubers are exposed to ample light and air the premature growths then are stout, green, and vigorous, and do not elongate; but when carefully preserved in planting cause much quicker and more even growth to result. But to avoid harm from frosts it is always wise to plant rather late—say, the third to end week of April—rather than too soon, as Potatoes, being very tender, suffer greatly when cut down by frost. That is a danger which rather later planting invariably helps to avoid. A. D.

Trenching, &c.—For trenching and double digging much time can but seldom be spared, but the wise gardener will certainly have a

portion, small or great, of the garden under his charge treated in one of these ways, whichever is best suited to the depth of fertile soil in the garden. It is only by doing such work piecemeal, a little each winter, that one can keep pace with other work and still gradually improve the soil at the same time. Cautions are frequently being given as to the dangers of bringing up, by trenching, the crude subsoil to the surface, but this is still being done by many who have only half learned the value of deep cultivation and who ruin the surface-soil in consequence. On the whole, and for the vast majority of gardens, double digging or bastard trenching is the best method to adopt, as by this the subsoil is broken and enriched without injury to the surface-soil. Trenching, however, is a valuable operation where it can be carried out with safety, and when the brain as well as the spade are brought to bear on the work. Another method—viz., ridging up for the winter—is beneficial to some peculiarly constituted, heavy soils, but no soil should be ridged while wet, and I think that for most old gardens ridging may well be dispensed with entirely with advantage. The nature of a soil is only to be learnt by experience and I would strongly urge any young gardener, who has taken charge of a garden on a soil to which he has not been accustomed to adopt at first the methods which have been applied customarily to the soil, rather than to rush to other methods which may, or may not, be satisfactory, leaving these for future experiment, or carrying them out on a small scale at first, for soils vary immensely, and some may be easily and quickly spoiled for the time being.—W.

GARDEN PESTS.

Carnations diseased *(H. J. G.)*.—The Carnation plant you sent was infested by quite a number of different creatures, consisting of a few minute beetles, small worms, a number of one of the Poduridæ (Lipura ambulans), of the bulb-mite (Rhizoglyphus echinopus), and of the grubs of a fly, probably (Hylemia nigrescens). Of these the last two are those which have the greater share in the mischief. The question of how to destroy these two pests is a most difficult one. It is very certain that they cannot be reached while they are within the stems without injuring the plants. The fly, no doubt, lays its eggs on the stems near the ground, and the grubs, as soon as they are hatched, make their way into the stems. Perhaps earthing up the stems with sand, well mixed with soot or paraffin-oil, might keep the flies from depositing their eggs on the plants, but I am not at all sure how this might suit the Carnations. As regards the mites, the only thing that I can suggest is to carefully burn the affected plants, and remove all the earth that has been at their roots and burn it or bury it deeply where there are no plants near.—G. S. S.

Leaf-spot on Carnations *(E. Zwahlen)*. Your Carnations are attacked by the Carnation leaf-spot fungus (Septoria dianthi). Pull up and burn any of the plants that are badly attacked, to prevent the disease spreading. Syringe or spray the others, having picked off the affected leaves, with ammoniacal carbonate of copper, made thus: Dissolve 1 oz. of carbonate of copper in a pint—or more, if required—of ammonia, and before using it dilute with 9 gallons of water; or use Bordeaux-mixture, made by dissolving ¾ lb. of carbonate of copper in a little warm water, and slake ½ lb. of freshly burnt lime in enough water to make it about as thick as cream, then strain it through coarse canvas into the copper solution. Add 5 gallons of water, and mix it very thoroughly, and keep it well stirred.—G. S. S.

"Geranium"-leaves diseased *(R. D.)*.—From what we can see, your "Geranium"-leaves have been attacked by thrips, but there were none on the leaves when they reached me, the black specks being the droppings of the insects. Examine the leaves from time to time with a pocket-lense and see if this is not the case. If it is, spray or syringe the plant with the juice from ½ oz. of Tobacco, ½ lb. of soft-soap, and 3 tablespoonfuls of turpentine, well mixed in 1 gallon of water; or Gishurst compound according to the directions given with it. Repeat the dose in the course of 10 days or so, as these insecticides will not kill the eggs.

Carnations attacked *(Rotherham)*.—The creatures you sent were no doubt the culprits that destroyed your Carnations. They are one of the most destructive pests in gardens, and are most difficult to destroy. They are one of the snake-millipedes (Julus terrestris). Their skins are so thick and hard that, living among the roots of plants as they so frequently do, it is almost impossible to make any insecticide reach them so as to kill them without injuring the plants; in fact, few insecticides have any effect on them; but a strong solution of salt or nitrate of soda will kill them if it can be made to reach them. Small pieces of Mangolds or cotton-cake buried near the plants make good traps. Pieces of slate, board, bricks, or tiles laid about are very useful, as the millipedes hide under such things.

Vine-leaf diseased *(P. L. Appleton)*.—The Vine-leaf that you sent me appears to be infested by one of the gall-mites; but I must admit that I was unable to find the mites, even though I made a very careful search for them under a microscope. You cannot do wrong, however, by picking off the infested leaves and burning them, and when all the leaves are down collecting them and treating them in the same manner. Then dress the stems and canes with 1 lb. of flowers of sulphur, 1 lb. of soft-soap, and half-a-wineglassful of turpentine, made into a paste with a little warm water. Boil ½ lb. of Tobacco in a covered saucepan in 3 quarts of water, and mix the liquor with the paste, and add water to make 2½ gallons. Or to one part of tar add three parts of clay, and make it into a thick paint with water. Before using either of these mixtures scrape off all the loose bark with a blunt knife. Do not scrape the stems too closely, for if the tender bark is exposed it may be injured by the insecticide, which should be worked into all cracks and crevices with a brush.—G. S. S.

Killing earwigs *(A Discomfited One)*.—I never heard of rat poison being used for killing earwigs, and I do not think that they would touch it. I cannot suggest any better way than providing them suitable places to hide in, such as the hollow stems of various plants, small garden pots filled with dry Moss or crumpled paper, or balls of paper crumpled up. Lay these things about in the haunts of the insects and examine them every morning, and shake the insects into a bowl of water with a few drops of paraffin-oil on the top, so as to form a thin film.—G. S. S.

Christmas Roses *(F. L. P.)*.—I was unable to find any of the small white insects you mention, but as you say you find wireworms near your plants, I have no doubt but that they are the cause of the injuries to the plants, and that while there are any of these about your plants will not grow satisfactorily. You had better trap them by burying small slices of Mangold, Turnip, Potato, or Carrot near the plants. Stick a small wooden skewer into each so they may be more easily found and handled. They should be buried about an inch below the surface, and examined every morning.—G. S. S.

Hollyhocks *(Insignis)*.—I am sorry to have to tell you that your Hollyhock-leaves are attacked by the Hollyhock disease (Puccinia malvacearum). Hitherto no really satisfactory remedy has been found, but spraying with Bordeaux-mixture, or washing the affected parts with two tablespoonfuls of a saturated solution of permanganate of potash in a quart of water, has been found very useful when applied as soon as the disease makes its appearance. The diseased leaves are of no use to the plant, so it can do no harm to remove them.—G. S. S.

Apples diseased *(Stelling Fleet)*.—Your Apple-trees are evidently attacked by the American-blight (Schizoneura lanigera). The trees should be kept well pruned, and all gnarled, rough branches that are not growing vigorously cut off. The trees should then have all the rough, loose bark scraped off; it is well to lay sacking or something of that kind at the base of the tree so as to catch what is scraped off. The stems and branches should then be scrubbed with one of the following mixtures, taking care to well work it into cracks, etc: 1 lb. of soft-soap, the extract from ½ lb. of Quassia-chips, in 4 gallons of water; or ½ lb. soft-soap, 1 pint of paraffin-oil, thoroughly mixed together and added to 7 gallons of water. This mixture must be kept very well stirred so as not to allow the oil to float on the top; or the trees may be washed with a lime-wash made from very quick lime. If the roots are attacked they should be uncovered and dressed with one of the above mixtures.

Lily bulbs *(Mrs. H. Hodson)*.—I am sorry to say that when the Lily bulbs reached me I could not find any of the small insects resembling white gnats, though I examined them very carefully with a lense, but I found a considerable number of the spotted snake-millipede (Blaniulus guttatus) among the scales, and their presence is quite enough to account for the injury to the bulbs. These millipedes are very difficult to kill at any time, and it is quite hopeless to try to do so in their present position. If the bulbs you propose planting in fresh ground are not infested with these millipedes they ought to do well, but if they are I am afraid you will not be any better off. By far the best thing to do is to burn the infested bulbs. These millipedes may often be trapped by burying small slices of Mangolds, Turnips, Potatoes, or cotton-cake, near the plants, about an inch below the surface; or by laying pieces of turf, slate, brick, or board, near the plants, as the millipedes are fond of hiding under such things.—G. S. S.

Diseased Apples *(C. J. Marshall)*.—The Apples you sent were attacked by a fungus (Fusicladium dendriticum), and I fancy by another fungus as well, but of this I am not quite sure. Next season, as soon as you see any signs of this pest, spray with Bordeaux-mixture or with ammoniacal carbonate of copper. See reply to "E. Zwahlen" in this number.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2116—**Is the Virginian Creeper poisonous?**—I recently heard of a case in which two gardeners, who had been pruning two separate plants, suffered from great irritation in their arms for several days after. I believe the variety was Ampelopsis Hoggi.—A. M.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2117—**Physalis and Gypsophila paniculata** *(W.)*.—Perennials, and quite hardy.

2118—**Dahlias** *(F. E. B)*.—Do not divide your tubers, and give a rich soil; the Dahlia is a very gross feeder.

2119—**Gladiolus brenchleyensis** *(W. C. B)*.—The proper characters are not fully developed until they are two or three years old.

2120—**Chrysanthemum showing** *(Doubtful)*.—Certainly not. Such a procedure would be dishonest in the extreme.

2121—**Cutting down Clematis** *(O. F.)*.—No Clematis growth or blossom has reached us, so we are at a loss to reply.

2122—**Ten-week Stock** *(Othello)*.—The Ten-week Stock is only a half-hardy annual, and it would need a very mild winter to preserve seedlings in the open. Collect the seed and sow next April.

2123—**Chrysanthemum mildewed** *(New Beginner)*.—We have received no leaves such as you say have been sent in your letter. When we receive them we shall be pleased to help you.

2124—**Bread Fruit** *(Siberian)*.—You are not likely to do much with the Bread Fruit-tree, nor is it ornamental. It needs much the same treatment as the Elæis, with a higher and moister atmosphere.

2125—**Narcissus Polyanthus in water** *(M. P.)*.—Yes; the Polyanthus Narcissus can be grown in water, but does not thrive quite so well as the Joss Lily; however, we have seen some very pleasing examples, and it is worth trying.

2126—**Prickly-leaved Solanum** (*Buckleroe*).—So far as we can judge from the single leaf sent, the name is Solanum marginatum. It is a very handsome, tender annual, and is used for sub-tropical bedding.

2127—**Vines unsatisfactory** (*James Hill*).—The Grapes have shanked, due either to a too heavy cropping—the most likely cause—or insufficient fire-heat. The roots may also have got down into bad soil. It would be well to examine them.

2128—**Boiler for greenhouse** (*Girvan, Scotland*).—A very simple and ingenious idea, but we should say one of the other boilers advertised in our pages would give you far more heat at the same expense. It is clearly an original contrivance.

2129—**Camellias in Northamptonshire** (*Camellia*).—There are only one or two species and varieties of Camellias that grow in the open in this country, and these in the most favourable southern positions. You would certainly fail upon a north wall in Northampton.

2130—**Getting rid of leaves** (*Nervous*).—To allow the leaves to remain on the ground would give the garden an untidy appearance. Why not get a boy—or boys—to sweep or rake them up and carry them to an out-of the-way corner, or arrange with someone in the district likely to want leaves for putting down for leaf-mould.

2131—**Mesembryanthemum mutabile** (Syn. M. glaucinum) (*H. B. Bellew*).—This needs full exposure to sun if it is to flower well. Perhaps yours would do better in a less rich soil, and that is what we should try. M. edule also requires a very dry and sunny spot, and will need some slight winter protection unless so situated.

2132—**Manure for bowling-green** (*Lowest Scorer*).—You might either dress with coal-soot two or three times, or a mixture of loam or freshly-slaked lime; either would be a check to worms. Do not use farmyard-manure for a season or two, and keep the green well rolled during winter.

2133—**Flowers in greenhouse all the year round** (*Y. M. F., St. Ives*).—We would recommend a good collection of Bouvardias, Cyclamens, Ivy-leaf Pelargoniums, and Primulas, as being likely to do well with you. We do not think your accommodation suitable for exotics.

2134—**Elæis guineensis** (*Siberian*).—These make very pretty table plants while young. Sow the seeds in a temperature of 70 degs., pot on into a rich but rather light compost, and see that they never suffer from want of water. The valuable Palm-oil of commerce is got from these seeds.

2135—**Begonia Rex** (*Sarah Dun*).—An ordinary greenhouse temperature will grow these through the winter, after which a warm window is as good as any. Your plant seems to be kept too moist, and probably it is moisture at the edges which has caused the leaves to turn brown. They need very little water at any season.

2136—**Fruit-trees against trellis** (*J. D. C.*).—As you give us no idea of the length of the trellis, nature and depth of the soil, we are unable to say definitely what kind of tree or trees would suit you. However, we should think that Cherries, Gage Plums, Pear Louise Bonne of Jersey, and P. Marie Louise would do well.

2137—**Coleus and Pelargoniums** (*Amateur*).—We imagine your plants are infested with mealy-bug, and not mildew. They must be cleansed, but you will do little good with Coleus during winter. Throw them away and purchase again in spring. Once attacked seriously with mealy-bug they are of little further use.

2138—**Stove-house** (*M. I. N. A.*).—Your idea and plan are excellent; but do not run the pipes through the tank. That would cause too much moisture. The foot of fibre is ample, and you will find 70 feet of 4-inch piping give you a heat ranging from 70 degs. to 85 degs. with little trouble, and you will need keep a close guard against overheating.

2139—**Climbers for north wall** (*J. D. C.*).—It is a very difficult matter to say which is the best climber for a wall. The following are very good: Jasminum officinale, J. nudiflorum, Bignonia radicans, Berberidopsis corallina, Hedera atro-purpurea, Ampelopsis Veitchi, Akebia quinata, Cotoneaster microphylla, and the evergreen Pyracantha.

2140—**Lily of the Valley too thick** (*N. F. D.*).—We would lift the Lily of the Valley, select the best crowns, and replant into a rich, deep loam. A partially shaded position is most suitable. You could have no better time for the operation than the present. Your bed is so crowded that few of the crowns can mature themselves sufficiently to flower.

2141—**Asparagus roots** (*J. T. C.*).—You may lift your four-year-old Asparagus roots at once. Do so very carefully to preserve all the roots. Have the new bed of soil trenched and well manured ready. Open out with a shovel broad furrows 6 inches deep and 2 feet apart. Plant the roots in these 20 inches apart, cover fully over, and tread them down. They should suffer little if the work is carefully done.

2142—**Climbers** (*J. D. C.*).—The undermentioned are suitable: Indigofera Gerardiana, Passiflora cœrulea Constance Elliot, Bridgesia spicata, Jasminums, Escallonia macrantha, Pyracantha Lælandi, Bignonia radicans, Lonicera aureo reticulata, and Cotoneaster microphylla. Amongst Roses W. A. Richardson, Gloire de Dijon, and Aimée Vibert are three of the best varieties for your purpose.

2143—**Plants in house** (*Beginner, Edinburgh*).—We do not think you could make much use of your building, except for keeping "Geraniums," Fuchsias, Dahlia-tubers, Chrysanthemum-stools, and such subjects as Salvia patens, Lobelia cardinalis, and half-hardy Ferns, through the winter. You have too little light to grow plants, but might forward Hyacinths, Tulips, and Narcissus to advantage.

2144—**Opinion of manure** (*R. Neelson*).—From the analysis we should say the manure is probably one of the so-called corporation manures. If the quantity of nitrogen mentioned is correct, the addition of nitrate of soda is unnecessary. The content of phosphoric acid and poison is low, and the addition of some phosphatic manure and Kainit might be advisable, but unless you give further particulars as to nature of soil and crops to be grown it is impossible to give any useful advice.

2145—**Climbers inside greenhouse** (*Miss O.*).—Why not try a few climbing Roses? Your present position is good, but a William Allen Richardson Rose would be a complete change. Lift the Begonias, pot into a light and sandy compost, and keep them rather dry in a temperature of 60 degs. to 65 degs.

2146—**Making wreaths, etc.** (*Constant Reader*).—We fear we cannot help you in this, as it is more a question of practice and natural gift than many imagine. Could you not get some friendly head gardener or a local florist to let you be present a few times when such floral designs are being made? We know of no book likely to suit you, and it is a difficult subject to instruct upon without a few practical lessons.

2147—**Grapes shanking** (*Wallingford*).—Your Grapes are both shanking and cracking. Possibly you have given water too freely, and thus have generated excessive sap production, and bursting the thin skins. With respect to the shanking, see course of treatment for "Subscriber," and treat yours in the same way. There is no remedy other than in getting the roots out of sour into sweet and well-aired soil.

2148—**Bedding plants in greenhouse** (*G. G.*).—Your house is too small to produce many bedding plants, unless it be such as the half-hardy annuals that can be pricked out from the seed pans. You could grow the Zonal Pelargoniums, and similar cool greenhouse subjects, and also make use of the house for renovating room and window plants. The worst of such small houses is their liability to fluctations of temperature.

2149—**Celery culture** (*R. A.*).—Sow the seed in March in pans under glass; prick out as soon as they can be handled, placing them 3 inches apart each way, and giving a light compost. In July, as soon as the earliest Potatoes come off, plant in trenches about 9 inches deep, previously enriching the soil. Six inches apart is a good distance unless you want extra good heads. Water well, and earth up as the plants progress. If you look through our "Week's Work" it will help you much.

2150—**Growing Asparagus "Ferns"** (*St. John's, Jersey*).—The African Asparagus, which we suppose will always be called a Fern, is one of the easiest and most graceful plants to grow. You can treat it the same as other plants, so long as the temperature ranges between 50 degs. and 70 degs. We would not give salt: this is dangerous in pots, and no doubt the idea of its requiring such arose from the use of salt in the case of our edible Asparagus.

2151—**Preparing Pampas Grass** (*M. S.*).—The whole secret lies in cutting the plumes immediately they have developed. Cut carefully, and hang them up, plumes downwards, in a dry atmosphere away from bright sunshine. When they clog, as they will do after dull weather and damp air, simply dry them steadily over a fire, and shake out the plumes gently. Your stalks bent over either from weight of clogged plumes, or because they were not hung head downwards until quite dry and hard.

2152—**Hand plough** (*J. O. B.*).—You had better apply to some of the agricultural implement makers with respect to getting a hand-plough for earthing up Potatoes. Small stirring, as well as moulding ploughs for ponies and donkeys, we have seen, and are exceeding useful, but such implements to be worked by hand need a giant's strength behind them if the work done is to be of any service. We should be pleased to hear of any reader who has used a hand moulding plough with satisfaction.

2153—**Ampelopsis for building** (*N. A.*)—We should select the kind named muralis, and plant now in well-prepared soil. Put them about 4 feet apart, or closer, if you wish, and then the building will be more quickly covered. It is not necessary to mulch with manure afterwards, as the Virginian Creeper is very robust in growth. No; the rain-water would not hurt the plants, we should think, but if cattle eat their leaves they will suffer for it, as the Ampelopsis is not a wholesome food.

2154—**Culture of Persian Cyclamens** (*C. V. A*)—We have had more than one exhaustive article upon these. Please refer to index. The seed is generally sown in June, potted off the same autumn, and shifted on twice during summer, when they flower well the following winter and early spring. A light and rather rich compost with a little old mortar rubble added is a good one. Do not dry them off. Give a moist atmosphere ranging from 45 degs. to 65 degs., and keep them near the glass.

2155—**Ladder for nailing creepers** (*Nervous*).—There are several kinds of Ladders in gardens, but the one that finds most favour with men who have a great deal of nailing to do is similar to the common ladder, with the exception that the steps are broader and a thin piece of iron tubing about 10 inches long is fastened to the sides at the top. These rest against the wall and keep the ladder from damaging the trees; the workman is also in a better position to nail the trees. Any local carpenter can make one.

2156—**Selaginella** (*Selaginella*).—We believe your Selaginella to be the variety denticulata, but would preferred a larger piece, or some hint as to its habit. A warm and moist greenhouse atmosphere, with a well-drained compost of peat, loam, and sand, with a few pieces of crushed brick is all it needs. An occasional overhead sprinkle in dry weather helps it. Let your hard water stand in the house for a few hours before using. The water is probably the cause of grey portions. It is not suitable for a window-plant.

2157—**Lettuces** (*Economist*).—If your Lettuce-plants that you wish to protect from frost are in a frame, the throwing of some loose straw-litter over the glass lights when they are on should suffice to ward off frost. If the plants are out in the open they should be lifted with balls of soil and be planted very close together, then have erected over them a rough framework of wood, just high enough so that you could lay over the top some sheep or wattle hurdles; on to those throw litter, Fern, or any cheap covering. Lettuces want no protection until frosts come; if they be covered up in damp weather they suffer more from the damp than from frost. If you have a spare frame, that is the best place in which to put them. A very useful way is to plant thickly close under a south wall or fence, so that some light litter or Fern may be laid over the plants, and thus some temporary protection is furnished.

2158—**Winter Cherry** (*C. J.*).—So many call the Solanum Capsicastrum the Winter Cherry, that we imagine this to be the plant you mean. They are raised from seed early in the year, grown on in small pots all the first season, potted on into 5-inch and 6-inch sizes the following summer, and grown outside upon a cool, moist bottom from June until September, when they are housed and kept well watered until the beauty of their berries is past, after which stand on one side until March or April, when prune back, shake away the old soil, and repot into a rich, loamy compost, growing them on again.

2159—**"Horn Bean"** (*St. John's, Jersey*).—Your "Horn Bean" is evidently the Trapa natans, often called Water Chestnut, Jesuit's Nut, Ling, etc. It is not of much use, except as a curiosity, here, but a valuable food in the East. There is no appreciable distinction between this and the two-spined species. All you need do is to place it in a glass of soft water, and stand it in a warm living-room. It will soon sprout, and throw out trailing growth, but the flower is insignificant. We know of many amusing swindles that have been imposed upon amateurs by glowing descriptions of these Nuts or Beans.

2160—**Lifting Lilium speciosum** (*Speciosum*).—We should recommend you to lift your Lily bulbs and plant in a different part of the garden. If they are allowed to occupy the same ground undisturbed for any great length of time they become crowded, the spikes of bloom slender, the flowers small, and the constitution is considerably weakened. It is at this period that they are liable to fall victims to the much-dreaded Lily disease. To keep the plants in good health rich soil, perfect drainage, and plenty of moisture are necessary. Bulbs may be planted now or early in spring. Plant deep, and allow from 6 inches to 10 inches between each bulb.

2161—**Manure for lawn** (*Paris*).—Bone-meal is essentially a phosphate, and exercises most effective service in the formation of fruits, roots, or other solid products. Grass is more in need of nitrogen, although that, as with most other products, thrives best on a manure mixture that includes phosphate, potash, and nitrogen: the latter, however, should be in the ascendant. If bone-meal alone be used of these minerals, add an equal quantity of soot and some fine ash, wood-ash in preference. Sow this dressing liberally over the lawn in February and let it be well washed in. A second dressing may be applied in April, and if the lawn be not then satisfactory, give a third a month later.

2162—**Iris Pavonia major** (Peacock Iris) (*J. B. W.*).—This is now more generally known as Vieusseuxia glaucopis. It is a beautiful bulbous plant, 9 inches to 15 inches high. The flowers, which appear in early summer, are about 2 inches across, pure white, with a beautiful porcelain-blue stain nearly one-third of an inch broad at the base of each of the three larger divisions; the spot is margined with dark purple teeth, and is of a fine deep violet at the base. It should be grown on warm, sheltered borders in sandy peat or sandy loam and leaf-mould; the bulbs should be planted rather deep, say with 4 inches of firm soil above the crest. Propagation is effected by separation of the bulbs in autumn. It comes from the Cape of Good Hope.

2163—**Grub-infested soil** (*J. B.*).—You cannot well do better than give your soil, when all the crops are off, a good dressing of gas-lime. Get this fresh and strew it over the soil at once, at the rate of 2 bushels to 3 rods area. Let it be strewn as evenly as possible; allow it to lie for a month, then again with a coarse rake give it a fresh strewing and dig it in deeply. If you cannot get gas-lime then give a dressing of fresh lime thickly, and dig it in at once, or, failing that, then of fresh soot. In digging the soil many grubs may be got rid of, and also in occasionally forking it up through the winter and exposing eggs and insects to birds, a great deal of vermin is thus got rid of. It is only possible by persistence in this way that foul ground can ultimately be cleansed.

2164—**Fruits under glass** (*B.*).—David Thompson's "Handy Book of Fruit Culture Under Glass," price 7s. 6d. (W. Blackwood & Sons, Edinburgh), should satisfy your requirements, as it is a recognised standard work by a first-class Scotch gardener. To heat a lean-to Peach-house and vinery fairly well, so as to have the fruits started earlier, if desired, a small saddle boiler would be best, with two 4-inch flows and one 4-inch return, should meet your requirements. Even a slow combustion stove would help materially. You want some extra fire-heat when the trees and Vines are breaking and blooming, and later to help the Grapes to ripen. Peaches would, on a south aspect, need none other than sun-heat to ripen the fruit.

2165—**Maincrop Potatoes** (*Constant Reader*)—If your mistress was instructed to allow main-crop or any other Potatoes to remain in the ground as grown all the winter, the advice was that of a lunatic. Potato-tubers are tender, and very susceptible to injury from frost. If we had hard frost, as may be expected in mid-winter, you would probably in February find you had to lift, not sound Potatoes, but a mass of rotten pulp. Get up your tubers at once while the weather is dry, and store them in a cool place, where light and air are excluded. Put the large or eating tubers in one heap and cover them with straw, and what you require for seed in a cool, airy, light place for them to harden. But, all the same, keep safe from frost.

2166—**Worms on lawn** (*Constant*).—The most effective, yet otherwise harmless, destroyer of worms on a lawn is either strong soot or lime-water. In both cases the solid ingredient should be fresh, and the solution applied as soon as ready by the aid of a large water-pot at night. When the worms are near the surface, use at the rate of a pound of soot or slacked lime to a gallon of water. A large tub or cistern is needed. Place the soot into a bag made of coarse canvas, and let it well soak, keeping it mixed occasionally. The lime is best fresh in lumps, gently pulverised with a little water first until quite powdered, then saturated and well stirred, then allowed to settle. If the first dose does not seem strong enough, follow a week later with one doubly strong.

2167—**Nectarines under glass** (*Renex*)—You do not say whether your house, 50 feet by 15 feet, is a lean-to or a span. It is important to know that in advising as to planting. If a span, plant flat-trained trees along on either side, the entire floor being well broken up and prepared as a border. You might plant six trees on either side. Put them in as near to the side as you can, and have wires run

along 10 inches from the glass to which to train the trees by tying. You could grow Tomatoes in pots in the house until the trees occupied all the roof. If yours is a lean-to house then plant along the front, for training up under the roof, six trees, and as many on the wall behind. The front trees should not be carried more than two-thirds up the roof, that light may get to the trees on the back wall. You could in both cases grow Tomatoes in pots for three years at least. Good varieties: Rivers' Early, Lord Napier, Etruge, and Victoria for succession. If you buy three year trained trees they should fruit the second year of planting.

2168—**Lawn-dressing** (*McP.*).—It seems as if your lawn had become so impoverished that the Grass was dying out and foul, coarse weeds taking its place. So far as we can determine you will have to remove all these coarse weeds, getting out roots, too, as well as you can; then give the entire lawn a top-dressing of fine, gritty soil, and sow fresh and suitable Grass-seed, which you can obtain from some good seed firm. Tell them the area and soil, and they will give you the needful quantity and variety. To feed the Grass, get a mixture of soot and Kainit, mix it with very fine-sifted soil, and strew it well over the surface after the seed is sown. Then rake and roll well, keeping off birds. An occasional light dressing of guano, natural guano, or any artificial manure, strewn over the Grass, will help it wonderfully.

2169—**Diseased Grapes** (*Subscriber*).—Your Grape sample, as sent, presents a pitiable aspect. Beyond shanking, as seen in the withered stems, the berries are largely failing to mature and ripen. It is evident the root-action is at fault. Your border, has, no doubt, become damp and sour, especially if, as you say, over-saturated with a leakage of water. That should be stopped. Then the surface of the border should be carefully forked off, roots lifted, the bottom soil deeply broken up, and have wood-ashes and lime-refuse freely worked into it; then the roots relaid, using about them some fresh soil, and adding lime-rubbish or wood-ashes to the top soil. Spread that over the roots again, but they must not be buried more than a few inches. Some bone-meal and potash may be strewn over the surface and well scratched in after growth has begun.

2170—**Summer Cos Lettuces** (*Winchester*).—There is no description of Cos Lettuce so tractable generally in all soils, or so tender and crisp when well grown, as is the Paris White Cos. Green and Brown Cos Lettuces are rather hardier, and, indeed, are best for winter use. There is a tall white variety named Champion, but it would not do for a bad, chalky soil. We suggest that to obtain good Lettuces a trench, say 6 feet long and 2 feet wide, be opened on one side of the garden, that the top and well-worked soil be thrown out; then the next 12 inches of chalky sub-soil taken out and removed. The next top spit from a trench be thrown into the first trench, and this process be repeated until the entire strip, 6 feet wide, is done. Then add well-decayed manure, garden-refuse, and other spare soil; well mix it with the trenched soil, and plant portions with Lettuce in the summer for succession as needed.

2171—**Vine in greenhouse** (*F. E.*).—It would hardly be wise to make a soil border for a Vine on a corrugated iron roof, as suggested, lest you cause injury to the supports. Preferably, we should have made a stout box 3 feet square and 12 inches in depth. Make holes first in the bottom for drainage, then place in the bottom some coarse pieces of turf, on that a compost of turfy-loam three-fourths, the other fourth consisting of old lime-rubbish, crushed bones, and well-decayed old hot-bed manure. Failing lime-rubbish, put in sharp sand and wood-ashes. Fill the box nearly full and plant the Vine into it. Another year you could add a top-dressing of soil, and in succeeding years give dressings of sulphate of ammonia, superphosphates, and potash in equal parts, at the rate of a mere sprinkle once a month. The box should rest on stout pieces of quartering.

2172—**Catiliac Pears** (*A. M. G.*)—There seems to be no doubt but that the premature falling of both Apples and Pears so much remarked this season has largely been due to imperfect fertilisation of the flowers in the spring. The previous very wet autumn and the cold spring were the chief causes of lack of pollen or weakened pollen. Next year, owing to the present drier autumn and the splendid ripening the wood has received, should conduce to better results next year. All the same, if you can through the winter, and even now, give your tree occasional waterings of house-slops, liquid-sewage, or give the roots the help of a top-dressing of manure lightly forked in, you will find the benefit in finer and sounder fruit next season. A fresh mulch of manure over the roots in the summer will also do great good.

2173—**Broccoli-plants and Seakale** (*J. T. Bird*).—Broccoli-plants that are quite young should, as a rule, stand a hard winter better than very strong, coarse plants; still, you must not expect to get other than small heads from them. They may, so long as the weather keeps open, make new growth. Until Seakale has quite cast its leaves it had best be left alone. When the leaves are ripe they may be collected and set aside with other refuse to decay. Covering it up, to blanch it, may commence in January or February, if you have time, but it is hardly worth commencing too early. Place proper pots over the crowns, failing these, then heaps of sifted ashes, covering all with a thick coat of long manure and leaves to exclude air and give a gentle warmth. Your Sunflower is not at all of unusual height.

2174—**Fruit-trees** (*J. T. S.*).—It is generally held wisest before planting fruit-trees, to take note what varieties generally thrive best in the locality. We can but tell you of varieties that are fairly hardy, as you seem to need such up in the Midlands in a bleak situation. Standard Apples: Worcester Pearmain and King of Pippins, eating; Lord Grosvenor, Blenheim Pippin, Bramley's Seedling, and New Northern Greening, cooking. Four bush Apples: Potts' Seedling, Warner's King, Lane's Prince Albert, and Lord Derby. Four standard Plums: Rivers' Early Prolific, Victoria, Gisborne, and Monarch. Two bush Plums: Czar and Archduke. Two standard Damsons: Farleigh Prolific and Prune; and two bush Pears: William's Bon Chrétien and Durondeau. Get planted soon. Have the soil well worked and clean. Plant shallow, and have each tree securely supported by means of stakes to prevent blowing over.

2175—**Planting small garden** (*W. D.*).—Your proposed arrangement of planting dwarf fruit-trees on Grass beside gravel walks, seems very good. Much depends on the width of your Grass plot in the centre, which may be 6 yards, as shown in the plan. The trees should be fully 3 feet from the path, and be 9 feet apart in the row. Make broad holes, at least 2 feet across, first renewing the turf, deeply break up the soil, and replace some, and in planting add a little fine stuff about the roots, such as leaf-soil. Do not plant deeply, but tread the soil firmly. Get a few Apples on the Paradise-stock, in bush form, and a few Pyramid Pears on the Quince-stock, also some bush Plums. Plant them alternately; you can cover your wall with climbing Roses, if you wish, and have such soft fruits as Raspberries, Currants, and Gooseberries, with, for a year or two, some Strawberries round the borders.

2176—**Rotten Pears** (*W. D.*).—The early decaying of Pears in the middle is a common complaint this year, due, we believe, to imperfect fertilisation of the flowers in the spring, and equally imperfect formation of the seed-producing organs in the fruit. Whilst in all edible fruits the portion most acceptable to man is the outer soft, sweet pulp, nature is most concerned with the seed-bearing or reproductive organs, which she endeavours to perfect to secure reproduction. Last spring, owing to various causes, cold and frost especially, bloom was very imperfectly fertilised, hence the comparative smallness of the fruit crop. Then with this failure of the fertile organs was doubtless some fungoid creation, which in due course spread to the fruit and produced the premature internal decay of which you and so many others have this year cause to complain. Your Pears for naming were, unfortunately, too far gone to be recognised.

2177—**Fruit-trees against a fence** (*F. C.*)—If your south fence is a close one of board, it is a rather warm aspect for Apples, but against such fences such varieties as Cox's Orange Pippin, Ribston Pippin, and Sturmer Pippin for eating, and Lord Derby, Bismarck, and Lane's Prince Albert, as flat trained trees, should do well. The best form of trees would be horizontal or espalier fashion, if your fence is only of moderate height. Plant such trees from 8 feet to 9 feet apart, and get them in as soon as you can. With respect to time for sowing Tomato-seed to have the plants fruiting under glass early, all depends on what heat you can furnish. Seeds sown in January in a shallow pan and stood in a temperature of 60 degs. would soon germinate, and should make strong plants 9 inches in height in about six weeks. Conference, Duke of York, Excelsior, or Regina are good varieties.

2178—**Heating greenhouse** (*W. L. H.*).—If you wished solely to keep out frost from your greenhouse your present heating power of two 4-inch pipes running the length of the house might suffice, especially if the pipes are fixed towards the front. If, however, you want bulbs and other things to bloom early, then you need a temperature ranging from 55 degs. at night to 65 degs. in the day. For that purpose more piping is needed; indeed, what you at present have should be doubled. We fear an oil-stove would be of little service, as at the most it would in hard weather hardly do more than raise the temperature 2 degs. or 3 degs. Those are poor contrivances when hard weather prevails. If you can have additions to your hot water piping made, then do so.

2179—**Closed conservatory** (*Subscriber*).—The words to which you take exception—"and the house, except on frosty nights, be altogether closed"—are, of course, incorrect, but evidently result from a typographical error. What the writer intended to convey evidently was "especially on foggy nights the house should be altogether closed," which is a very different thing. So long as the temperature of a Chrysanthemum-house can be kept up to 50 degs. with ventilation the air is dry, and blooms would keep well, but on damp, foggy nights, or days either, ventilators may well be closed to exclude damp, although it is even in such case better to give some top air rather than to have moisture settling all over the glass inside and damping the blooms.

2180—**Kitchen garden** (*Rex*).—Almost any ordinary vegetables should grow in your stiff soil if you will have it deeply broken up, but not bringing the bottom to the top, giving a light dressing of stable-manure, leaf-soil, road manure, wood-ashes, soot, or town street sweepings. Get the ground well broken up rough at once, let it be exposed to frost for a couple of months, then get the dressing on to it and fork it in, and it will be fit for practically any ordinary garden vegetables. As to fruit-trees, plant some bush Apples on Paradise-stocks, a few Pears, and some Plums. All depends on the ground. Plant trees and bushes so soon as the ground can be prepared. Red Currants will do well on your low walls, so too will single cordon Pears and flat-trained Plums, root-pruning them if they become too gross later.

2181—**Propagating Figs** (*S. O. F.*).—Cuttings of Figs from stout, well-ripened shoots of the previous year, and about 6 inches in length, taken off in January or February and set into pots of sandy soil, watered, and stood in bottom-heat, soon root and make nice plants the same year. Also you may make similar cuttings now. Set them under a south wall outdoors and cover for the winter with a few leaves when hard weather begins. These will probably root very well during the summer. Another excellent way is to select young growths near the ground, to fork up the soil round them, then to layer these shoots by tonguing them, as for Carnations, pegging them into the soil, placing some sand about them, and covering up. These are certain to make good rooted plants.

2182—**Lifting Dahlias** (*Pelsall*).—Although your Dahlia plants are still growing and blooming, you had better not leave them to be cut down by a sharp frost, but do it yourself at once. Cut off the stems 9 inches from the ground, clear them away, then with a long fork lift the roots carefully, not breaking the fleshy tubers. Shake out some of the soil or remove it with the aid of a pointed stick, turn the roots bottom upwards to allow any sap or liquid that may be in the hollow stems to run out, and when the roots are fairly dry place them into shallow boxes as close together as they can be stored, and cover them up with fine dry soil or ashes, well shaken in, and then place them where the temperature does not fall to freezing point, and where it is fairly dry, not under drip. So cared for the roots should keep well all the winter.

2183—**Tomatoes under glass** (*A Reader*).—If your 50-feet-long house is a span and has borders on either side of a centre walk, you can plant Tomatoes out on each border crosswise, 3 feet apart, the plants in the rows being 18 inches. Of course, such plants having free root-run produce rather gross leafage and crowd somewhat, yet by this method market growers produce immense quantities of fruit. The plants are tied up to long stakes, each plant being hard pinched to one main stem only. Very little manure need be added to the soil, but that should be well broken up and sweetened. As to getting three crops a year, that is out of the question. If you sow seed in a good warmth—say, 65 degs.—early in January, you may expect to have stout, sturdy plants singly in pots to plant out middle of March. Such plants should fruit well up to end of July at least, and if doing well much later. Your best chance for a second crop would be to have a fine lot of plants ready in 9-inch pots outdoors to bring inside and stand on the borders, not to plant out, in August, and fruit them up to Christmas. Conference, Ham Green, Duke of York, and Regina are good.

2184—**Hardiness of the Lyre-flower.**—Is the Dielytra spectabilis hardy? Should I leave it outside during the winter?—Urmston.

*** *This is hardy, except in very cold districts. The flowers are, however, apt to get nipped by late frosts, so plant it in a sheltered spot where the soil is warm and not too heavy.*

2185—**Plants for greenhouse rockery.**—Will you kindly give me the names of three good creeping Ferns for rockery in greenhouse? Also something variegated or otherwise to plant in front of pots on the opposite side of house to hang over the bricks of wall?—I. M. F.

*** *Davallia bullata, D. canariensis, and Lygodium scandens might suit you. You could have no better variegated creeper than the Panicum variegatum and Tradescantias.*

2186—**Pansies and Carnations in greenhouse.**—As I am thoroughly digging and manuring my outside garden during this winter, can I keep border Carnations (seedling) and Pansies (seedling) in greenhouse, heated to 40 degs. at night? Have prepared small place for Antirrhinums and Michaelmas Daisies outside. Must I do the same with above to be successful?—Amateur.

*** *It would be better to place the plants in a cold-frame than a greenhouse. Even a fairly sheltered spot in the open would keep them all safe; the whole of the plants you name are quite hardy.*

2187—**"Geraniums" unsatisfactory.**—I recently took up and potted some "Geraniums" (Zonal Pelargoniums), and all new growth since turns brown and drops off. Same thing occurs with the cuttings I took of same plants. I have them in a spare room, close to window, and water them (so as to keep them moist) twice a week.—Othello.

*** *Probably the repotting and root disturbance is the cause of your plants throwing their leaves. They will soon get over this.*

2188—**Bowling-green.**—Would any reader tell me how to put a bowling-green into thorough condition for next season which, at present, is generally impoverished? I may say that the turf itself is of good quality though impoverished. It has been in former years top dressed with sea sand about this time.—D. D. P.

*** *If you will refer to our opening article for September 25th issue, you will find full advice upon this matter.*

2189—**The hardiest Cordyline.**—Which is the hardiest of the Dracænas (Cordyline) for outdoor planting? Would Dracæna australis be sufficiently hardy to stand the winter out-of-doors in North Hampshire if planted in a sheltered corner, protected by two walls?—F. W.

*** *Dracæna australis and D. indivisa are natives of Australia, and the hardiest of the Dracænas. We are afraid they would not survive a winter of ordinary severity in North Hampshire unless they are, as you say, planted in a very sheltered corner. If you try the experiment let readers of* Gardening *know the result.*

2190—**Pink Larkspur.**—The seed of this Larkspur was sent me from San Francisco last March. I would be glad to know its name, and whether it is hardy out-of-doors in the midlands? The inclosed is still in bloom in a shady border.—Buchelroc.

*** *It is an annual, and the proper name is Delphinium Ajacis.*

2191—**Renewing Box-edging.**—Can you tell me when and how to renew Box-edging to my flower garden? I have a great quantity that has been growing for years, and in many places has got destroyed, whilst that remaining is rather large and stalky. I have several books on gardening, but they are not clear about it.—Novice.

*** *Box-edging requires trimming yearly. This operation is generally performed during the months of August and September. The edging is then made neat and tidy for the winter. The bare places or gaps should be filled up with suitable plants now. The old plants divide well, so you need not be afraid of destroying them.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor of Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants.—*W. Anderson.*—Ampelopsis Veitchi (a very variable plant).——*R. R. E., Dymchurch.*—Asclepias var.——*Lizzie.*—1, Sericographis Ghiesbreghtiana; 2, Not sufficiently developed; 3, Cassia corymbosa.——*E. Sealy.*—The red flower is Clerodendron fœtidum; the other Abelia uniflora.——*Ailegin.*—The plant you regard as a Holly is Osmanthus illicifolius; the other plant is Genista hispanica (Spanish Broom).——*M. E, Wallington.*—Impossible to name from the small scrap sent, which is quite out of character. See "Tree and Shrub" columns for other reply.——*J. W. D.*—The specimen of frond and also the photo of the Fern sent are those of one of the most beautiful of the very numerous forms of Polystichum angulare, named P. a. Kitsoniæ of Moore (syn. Multicristatum of Wollaston), and one which, although very old, is seldom met with, and worthy of a more general cultivation. May we use the photograph?——*M. B.*—Rose Safrano.——*M. Barrow.*—Looks like an annual Saponaria, but the flower was so small and crushed that we cannot be certain as to the name.——*A Sharp.*—Helenium pumilum.——

Utica.—1, Variegated Parlour Palm (Aspidistra lurida variegata); 2 Please send in flower; 3, We have not seen; 4, Pandanus Veitchi.——*H. D. G.*—1, Veronica speciosa; 2, Please send in flower; 3, Gesnera of some kind, but should like to see a flower; 4, Farfugium grande; 5, Fittonia argyroneura; 6, Acalypha musaica; 7, Todea superba apparently, but the frond was a very poor bit; 8, Pteris tremula; 9, Maiden's Wreath (Francoa ramosa).——*R. S.*—The "big showy plant" is the Cotton Thistle (Onopordon Acanthium), the other an Acanthus.——*X.*—1, Evidently one of the annual Coreopsis, but it is not easy to tell from the flowers sent; 2, Cosmos bipinnatus; 3, Please send in flower; 4, Bird's Nest Fern (Asplenium Nidus); 5, Pteris cretica; 6, Anthericum variegatum.——*J. P. P.*—Thorn Apple (Datura Stramonium).——*Constant Reader.*—The Aster was too faded to name.——*West Meath.*—1, Mme. Cornillisson; 2, F. Riccartoni; 4, F. globosa; 6, Venus Victrix. Of greenhouse kinds: 1, F. splendens; 2, F. procumbens; 3, F. fulgens; 4, F. dependens. Others were too faded. Of course we have done the best we can, but the flowers were in several instances much crushed.——*G. Hagston.*—Annual Scabious. Sow seed in the spring. You will see notes upon them long before seed sowing time comes.——*Ilex.*—William Allen Richardson Rose.——*F. A.*—Nerine undulata.

Naming fruit.—*Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name six varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of* GARDENING ILLUSTRATED, *37, Southampton street, Strand, London, W.C.*

Names of fruits.—*George.*—Pear Beurré de Capiaumont.——*Essex.*—The fruits were too poor to name We have seldom seen more wretched samples. Evidently the trees require thorough overhauling.——*H. Gill.*—Cox's Orange Pippin, but your soil is evidently not kindly.——*Hill*—1, Beurré Diel; 2, Pear Vicar of Winkfield; Apple is Beauty of Hants.——*J. H. D.*—You are quite right about the poorness of the Apples. 1, It is impossible to name; 2, King of the Pippins. We should think your trees require attention.——*F. Pool.*—1 and 3, Marie Louise; 2, Autumn Bergamot. We can see no distinction in flavour or otherwise between 1 and 3.——*F.*—Blenheim Orange.——*H. L. E. H.*—Apple Wellington, also called Dumelow's Seedling.——*E Shergold.*—1, Cox's Orange Pippin; 2, Too poor a specimen to name; might be any kind; 3, Hawthornden; 5, Kentish Fillbasket; 6, Cellini; 7, Scarlet Nonpareil—*William Warren*—1, Worcester Pearmain; 2, Cox's Orange Pippin; 3, Fearn's Pippin; 5, King of the Pippins.——*W. L.*—Ecklinville Seedling; 2, Alfriston; 3, Badly-shaped Ribston Pippin.——*J. A.*—Pear Beurré Bachelier.——*Otley.*—1, Lord Suffield; 2, Cellini; 3, Lady Henniker.——*Constant Reader.*—Rosemary Russet.——*L. Mitchell.*—You have sent too many kinds—four is the limit. 1, Warner's King; 2, Alfriston; 3, Golden Reinette; 4, Mère de Ménage; 5, Emperor Alexander; 6, Beauty of Bath; 7, Bad Cellini; 8, Dutch Codlin; 9, King of the Pippins; 10, Yellow Ingestrie; 11, Please send better specimen; 13, Fearn's. The Pear is Beurré Rance.——*Q. Q.*—Waltham Abbey Seedling. We do not know an Apple named George; it is probably a local variety.——*Melton.*—1, Norfolk Beaufin; 2, Old Nonpareil; 3, Herefordshire Beaufin.——*J. Helsby.*—Duchesse d'Angoulême, dessert Pear, ripe in early winter.——*W. W.*—1, Brown Beurré; 2, Beurré Diel; 3, Beurré Clairgeau; 4, Louise Bonne of Jersey. Apples: 1, Belle Dubois; 2, Golden Reinette; 3, Hollandbury.

POULTRY.

Cramming Turkeys *(S. R.).*—I regret I cannot advise you on this subject from my own experience, as I have never seen the cramming machine used for Turkeys. If I were about to employ a machine for this purpose, I should procure the one manufactured by Messrs. Hearson, which could doubtless be obtained for you by any implement agent. Full directions for working would be sent out with the machine, and you would soon be able to use it expeditiously. I should, perhaps, point out that the cramming machine is generally used in the large poultry-fattening establishments for chickens, the object being to insure a good feed being taken at each meal, at a time when the appetite begins to fail, and when it is just possible for the bird to fall off in condition instead of making good progress. By far the greater number of Turkeys fattened for Christmas in this country are fed in the natural way, and, on the whole, although I admit the machine has its advantages, I think you will obtain the best results by feeding on these lines. What you have to do is to take care that the Turkeys shall come to their meals twice a day with a really good appetite. Then, by the aid of good foods, and by throwing it down in small quantities, you encourage the birds to eat as much as possible, and this means that they are bound to make good progress. Probably the best staple foods are a mixture of some of the special fattening meals as advertised, with Barley-meal, ground Oats, and meat scraps, the whole made into a stiff, crumbly paste by the aid of warm water, or skim milk. This mixture may be fed for breakfast, whilst in the afternoon whole Wheat, Buckwheat, or Indian Corn may be used. Only sufficient food for the meal should be thrown down at once, and if the birds are confined during the fattening stage, the troughs should be removed after each feed. Three weeks' confinement are all that the birds will stand; but if they have their liberty they can be fed as many weeks as you wish.—DOULTING.

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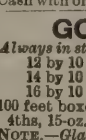

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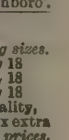

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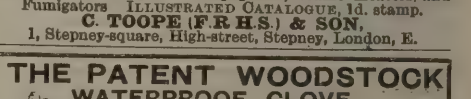

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ROSES.

SOME LITTLE-KNOWN ROSES.

Both among old and comparatively new Roses there are a few really good varieties that are by no means so generally known as they should be. Even several of our home-raised varieties are scarcely known. May Rivers (Tea) is one of these. It is a stout and dwarf grower, good for pots, and carries a bold, upright flower of a creamy-white colour, with pale lemon centre. Comtesse Dusy (Tea), although the result of a cross between Innocente Pirola and Anna Olivier, is scarcely known. The flowers are lemon-white, very large and double, and freely produced. Mme. Alfred de Rougemont is an old white (1863), flushed with rose at the edges, a good grower, and almost a Noisette in its freedom of blooming; a grand garden Rose. Charles Wood must not be confused with Mme. Charles Wood; both are Hybrid Perpetuals, the former scarcely ever seen, yet it is one of our very best dark Roses, with a distinct shade of purple. Gloire de Ducher is also a nearer approach to the purples than any of the more modern varieties, as is Marquis d'Hervey. Clotilde (syn., Bougère) is a very useful clear pink, especially under glass. Comte de Paris (a Tea sent out in 1839) is little known, yet it is almost always in bloom, and is as good a grower as Souvenir d'Elise Vardon or Cleopatra. This must not be confused with a Hybrid Perpetual of the same name. Coquette des Blanches is one of the hardiest and purest whites we have; it makes a grand pillar Rose, and is in flower all summer and late in autumn. Duc d'Orleans, although distributed by so noted and reliable a raiser as E. Verdier as long ago as 1889, is scarcely known outside of a few trade growers. It is a brighter form of Marie Baumann and a much better grower. Where else do we get the deep maroon found in Empereur de Maroc? It is a good grower and, if not large, each bud is perfect. Eugène Appert and Géant des Batailles are two more good old dark Roses of Camellia form, very lasting, and good for beds when planted thickly. G. Nabonnand and Dr. Grill are not so well known as should be the case with two such reliable Roses. Then there is Jeanne Nabonnand, one of the best chrome and chamois-yellows we have, and very sweetly scented. Le Pactole is a dwarf grower, but so profuse a bloomer as to almost hide its foliage with soft, pale yellow blossoms. Mme. des Tartas throws a quantity of large trusses, each bud of which is borne upon a stem sufficiently long to be useful when cut. It opens well, is exceptionally hardy, and bud is a grand late variety. A pretty little white Rose for bedding may be had in Mme. François Pittet. Mme. Vidot, Marguerite Boudet, Comte de Mortemart, and a few more are rather bad growers, but they are beautiful Roses. One of the hardiest and earliest blooming of our Teas is Pauline Labonté, sent out by Gradel as long ago as 1852, and now only found in a few old collections; yet it is a grand early and late Rose, carried boldly, and lasting well when cut. I have come across it once or twice under the name of Devonshire Souvenir d'Elise—not the Vardon variety. Souvenir de Charles Montault is among the first of the Hybrid Perpetuals to open, the colour bright scarlet, densely shaded with velvety-maroon. R.

ROSE MADAME FALCOT.

This is a useful kind to grow against a wall in the open air. It is doubtful if there is another Rose of the same colour that will give so many pretty buds as this. I am aware it is somewhat tender, but this is overcome by giving it a position in a sheltered spot. In our garden we have a plant growing against a stone wall with a south aspect. The border it is growing in does not get much assistance in the way of manure, as over its roots are growing Sternbergia lutea (which does well and blooms profusely) and Plumbago Larpentæ. But, despite all these disadvantages, this Rose blooms abundantly. I have noticed it is one of the first to commence to flower and the last over. At the present time, middle of October, it is giving us good, useful buds of a rich yellow colour.

It is worthy of note how long some of these reputedly tender Roses live when growing under favourable conditions. The plant under notice was old when I took charge here some nine years ago, and cannot be less than from twenty to twenty-five years of age, and it is still in a most healthy condition. Some seven years ago I took off the surface soil, replacing it with good rich material, and from that time till the present the only assistance it receives is an application of manure-water. It makes little growth. No doubt this is the reason it escapes the severe frost, seeing it thoroughly ripens its shoots. I am convinced a strong growth is not all gain to tender plants growing in the open.

John Crook.

PLANTING ROSES.

Simple as this operation is, so many do not carry it out in the right way that a few hints should be well followed by most amateurs. It is the same with Roses as other plants. A good start is half the battle towards successful cultivation. What can be the use of a plant having a quantity of roots if we cram them close together into one small hole? We do not find them growing thus. In a natural state they are spread around a considerable area. Nor do we get the whole of the fibre when lifting the plants, however careful this may be done. Always take out a hole large enough to allow of the roots being spread out as far as they will go, and let them be placed as nearly as possible in the position they naturally tend to take. Previous to planting trim off all coarse roots, and see that the broken edges of others are cut off clean. This opportunity should be taken advantage of to cut out all suckers and eyes that may be formed below the Rose growth. Let dwarfs be planted 2 inches deeper than the junction of Rose and stock, and standards some 3 inches to 4 inches below the old root left upon the Brier stem.

When planting a standard upon a lawn or near to the drive many do not take out sufficient soil simply because of the mess made upon the gravel or turf. Lay down a piece of matting or a couple of old sacks and this is avoided. Always see that the soil is moved fairly deep, and be careful to tread the Rose up firmly. If a standard, stake it at once, as any swaying will only cause a smooth and round hole at the bottom of the stem, and water will stay here. The smooth surface causes water to remain a considerable time, and frost at that stage is very harmful. Besides this, a plant which sways about is constantly breaking off the portions of new root that may be forming.

Never plant in a very dry soil without watering the plant in as you proceed. This is better than any amount of soaking after the work is complete. Having set the roots out, place a little of the finer soil upon them, and then gently lift the plant up and down a little and so run the soil among the roots. Add more soil and tread up a trifle, and again until the surface is almost level, then tread firmly and next cover with a little loose soil. If a package of Roses arrives during a frost, either take them direct to the cellar until frost disappears or unpack and bury in soil. Avoid leaving the roots out of the ground longer than can be helped, and, if dry, lay them in water for an hour or so. These are very simple details, but they are of great importance and influence upon the future welfare of your Roses. P. U.

ROSE LAMARQUE.

It is surprising that in these Rose-growing days, when even whole houses are devoted to the purpose in private places, mention should so very seldom be made of this grand old-fashioned but most useful variety. It belongs to the Noisette class, and for covering back walls and making a display early in the year it is certainly second to none. It is of a delicate lemon colour and a most profuse bloomer if properly treated. The finest specimen of it I ever saw covered the back wall of a lean-to Peach-house at Sundridge Park, in Kent. There was a sufficient space between the top of the Peach trellis and the wall to admit abundance of sun and light to the latter, and each year the wall was worth a long journey to see, the majority of the blooms being open during March. The great thing in the culture of Lamarque, as indeed it is in the case of all pillar or climbing Roses, is to secure annually plenty of young wood of a stout character, this being duly laid in at intervals as the season advances so as to get thoroughly ripened. No more was allowed at Sundridge than could be fully exposed, and as soon as the flowering season ended all the old wood that could be spared was removed. Some of the growths were many feet in length, such growths being characteristic of Lamarque. If wanted for button-holes or bouquets, the blooms must be secured in quite a young state, as they soon open, although in a fully expanded state the beautiful lemon centre is shown off to advantage and the flowers last well. The tree in question had its roots confined to a rather narrow border, but a limited root-run was atoned for by rich annual mulchings of farm-

yard manure and copious drenchings with diluted liquid when in full growth. These Roses when grown in moist fruit-houses should not be syringed, as they get sufficient moisture without, and too much is sure to produce mildew.

G.

Autumnal Roses —Those varieties which may be safely relied on, given a fairly mild season, for autumnal flowering might well be strengthened, and if there is no other place for them, any isolated beds on turf that have hitherto been devoted exclusively to summer bedding plants can be utilised. Such beds would naturally be in fairly good order, but if they are rather on the light side it will be found advisable to work in at planting time a mixture consisting of three parts stiff road-sidings to one of cow-manure; this, with a good annual surface mulching, should carry the Roses on satisfactorily for several seasons. The varieties that have produced the greatest amount of autumn flowers are the old Gloire de Dijon, La France, Souvenir de la Malmaison, Papa Gontier, and Homère (one of the freest, but, unfortunately, comparatively scentless), and of the Polyantha type, Gloire des Polyanths, Little Dot, and Perle d'Or. It is not that in any case specially good flowers are produced, but the bud display is very pleasing. If there is no objection to half standards, the Teas may be planted in this way, and bushes of the Polyanthas used to fill up the beds. In the spring the mulch can be broken down and a bit of Mignonette sown all over the bed. It will revel in the compost, and make a carpet for the Roses. So far as wall Roses are concerned, Safrano and Ophirie, in addition to Gloire de Dijon, seem to give us most autumn flowers. As this is, by the way, a subject of interest to all who want plenty of bloom through October and the early part of November, perhaps one or two readers who grow Roses rather largely will tell us what varieties they have found most serviceable.

GARDEN WORK.*

Conservatory.

When Tuberous Begonias lose their effectiveness, which in most cases will take place now, they should be gradually ripened off and then stored away in a cool-house, safe from frost, either in the pots as they are, or turned out of the pots and packed close together on the borders of the Peach-house or late vinery. One of the brightest winter-flowering subjects for covering walls or arches in the conservatory will be found in Habrothamnus elegans. H. fasciculatis is also a free-flowering variety. There are several free-growing and Ivy Zonal Pelargoniums which are useful in winter, especially when planted out and encouraged to grow freely. Perhaps Turtle's Surprise is one of the best. F. V. Raspail is also very bright in a temperature of 55 degs. or so. These plants are most useful for covering walls and pillars. The variegated variety of Cobæa scandens is a useful plant for winter effect for forming light drapery in a house lofty enough for festoons of the variegated foliage to hang about. The Camellia makes a very neat wall plant. Camellias and members of the Orange or Citron family were often used years ago for covering the walls of conservatories and other glass-houses with good effect, and some day they will be used for this and similar purposes again. In the meantime, we must make the best use of the materials at hand. Luculia gratissima, now showing flower, is a grand wall shrub where there is room and the position is fairly light. This plant also makes an effective bush planted in a bed of peat and good loam; should be pruned rather hard back after flowering when treated as a bush plant. Against a wall, with the growth trained in closely, the growth will not be so robust, and the need for hard pruning absent. The Chrysanthemums will now be at their best, and the ventilation should be as perfect as possible, as big flowers require careful management to keep them. A little air should be left on at night as well as day, and a little warmth in the pipes to ensure a rapid circulation. The water-pot must be used carefully, and no water thrown about unnecessarily.

Stove.

Try and keep down insects, especially mealy-bug. Vaporising with nicotine will kill the perfect insect, but I am doubtful about the eggs, and the insects creep into every nook and crevice, so that under any circumstances it will take time and much perseverance to get rid of them. They are very fond of Gardenias, Stephanotis, and Hoya carnosa. They are terrible pests any way, and no effort should be spared to clear them out. Give liquid-manure to Poinsettias, Eucharis Lilies, Gardenias in bud, and any other plant coming into flower which has a potful of roots. Hebeclinium ianthinum, a dwarf shrub with foliage and flowers somewhat resembling the Ageratum, though its parts are much larger in every way, is an easily grown plant, useful at this season and later. Jasminum gracillimum is nearly always in flower when planted out in the stoves, and it will also flower freely in pots, though when many flowers are wanted for cutting it is best planted out. Gesneras of the zebrina and cinnabarina section are very effective, and the new African Violet is, I think, destined to become popular in every stove. This is as easily grown as a Gloxinia, and flowers freely all winter. Night temperature, 65 degs, a little air to be given when the thermometer runs up to 80 degs. No shade will be required now, except over cuttings.

Forcing Vines in Pots.

If there are very strong, well-ripened canes and a convenient house or low pit suitable for forcing, pot-Vines may be started any time now. Plants strong enough for forcing will probably be in 12-inch pots, and as a top-dressing I have tried nothing in the way of stimulants equal to the Patent Silicate, and it may be used freely, as it does not sour the soil or spoil the colour of the Grapes if used too freely. It will be an advantage if the pots can be plunged in a leaf-bed where there is a genial warmth. Start with a night temperature of 50 degs No ventilation need be given till the buds burst. I have not space here to give details of the why and wherefore of this, but at this season of the year maintain a genial atmosphere, and get the Vines to break. Then begin to ventilate when the thermometer reaches 70 degs., and close early enough in the afternoon to run up to 90 degs., with saturated atmosphere. Bend the canes back to get them to break well.

The Orchard House.

Those intending to get young trees to start should bring in and pot them at once in the best loam obtainable, and stand outside on boards, or the pots partly plunged in ashes. The pots must be protected with dry Fern or litter before frost comes. The trees must be housed in January, and any little pruning, washing, etc., required should be done then.

Rose House.

Get the house ready for starting. Roses in pots break much more strongly if plunged in a leaf-bed. This is a great help to Roses newly potted. If there is a pit in the house, and the pots are plunged in the bed, no other heat but the leaf-bed will be required.

Window Gardening.

Keep succulents, especially Cactuses, dry through the winter. Newly-potted plants must be watered with care. Many plants, such as the Ficus, Palms, etc., potted in autumn are ruined by watering as freely as before the repotting took place. It is better to sponge the leaves more and water less during winter, and, above all things, do not leave plants standing in water in fancy vases or jars.

Outdoor Garden.

Those who are much engaged in laying out gardens plant both evergreen and deciduous trees in open weather from September till April. In such cases experienced planters do the work; the ground is well prepared by trenching, and in difficult situations a few loads of compost, consisting of leaf-mould, charred rubbish, and good loam, well blended, is prepared, and a few shovelfuls are placed round the roots of each plant to give them a start. Then, again, every newly-planted tree or shrub exposed to wind is securely staked and mulched as soon as planted, and in exposed situations some temporary shelter ought to be provided to break the winds till the things get established. If common things are planted as nurses they must not be permitted to remain too long, and their removal should be gradual. In difficult soils and bleak situations our native trees and shrubs should be used freely—at any rate, at first. Later on, when some shelter has been created and the soil improved, introduce other things—Hollies, Yews, Willows, Laburnums, Thorns, Syringas, Birches, Boxes, Berberis, Ivies in variety, especially all the varieties of Arborea, Junipers, including J. hibernica, Sabina, virginiana, and varieties. If the larger conifers are planted the most reliable are Cedar of Lebanon, C. atlantica, the Silver Firs in variety, and as much variety as possible of the Lawson Cypress, though this plant transplants badly; if not moved often it does well and makes a handsome tree when established.

Fruit Garden.

Begin pruning as soon as the leaves are down, and then the cuttings can be raked up and either burned on the ground and the ashes scattered among the trees or taken to the rubbish-yard and there charred or smother burned with any other rubbish. A good many pruners use the scissors instead of the knife. I like the knife best, because it makes cleaner and better work. No work which the gardener is called upon to do requires more thought than pruning. No one can learn pruning from reading about it; there must be much thought and study. Form an ideal tree in the mind and then create it. Whatever be the form of the tree, the head should be well balanced; a handsome, cleanly-grown tree is just as easy to make as the rough, unkempt trees commonly seen. A fertile tree is built up by guiding the growth into proper channels, repressing the rampant shoots, and encouraging those parts of the tree which are weakly. Wherever there is room for another branch leave a young shoot to fill the vacancy, but do not overcrowd. All gardening terms are capable of conveying different meanings to different minds, and overcrowding a young tree is not so injurious as it would be in an old one. As the branches lengthen the centre of the tree gets further from the sunshine, hence the necessity for keeping the centre open as the trees advance in growth. This refers to pretty well all fruit-trees and bushes.

Vegetable Garden.

All root-crops likely to be injured by frost should be secured. Turnips are best earthed up or taken up and the bulbs laid in a trench to be safe from frost. A stock of Horse-Radish should be lifted and laid in on the north side of a wall. Cauliflowers and Autumn Broccoli should also be placed in safety before frost comes. One can generally tell when a change of weather is coming. Forcing of such things as Asparagus and Seakale should begin as soon as the crowns are ready. Asparagus is ready any time now, but Seakale wants a little rest, and forces better after being exposed to frost. Where Seakale is taken up to force and is brought on in succession the roots may be lifted, the small thongs or side roots cut off, and the tap-roots shortened, and the main roots with the crown at the upper end should be laid in in a cool place and have some long litter placed over when frost sets in, so as to be able to move them at any time. Asparagus, with a like object in view, should be covered with long lit before frost sets in, so as to keep it in a movable conditi Keep some dry Fern or litter in stock to be ready sheltering anything when frost sets in. Fill up gaps Cabbage and Lettuce plantations. Dress land infest with slugs and snails with lime and soot, and fight w worms with gas-lime. Trench all vacant land.

E. Hobday

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 8th.—Moved Roses in pots under cov making alterations round the margin of lawn to ma room for groups of Roses of one kind, selecting th varieties distinct in colour and of vigorous habit. Finish pruning Peaches in early house; the trees will be wash and trained and the border top-dressed as soon as possi ready for starting the house next month. Moved Mignc ette in pots from pit to greenhouse on shelves near t glass. Sowed more Mignonette for early spring bloomi

November 9th.—Commenced pruning bush-fruits. Ma a new plantation of Raspberries. Top-dressed Asparag beds. Filled a frame with Asparagus roots for forcing hot-bed of leaves and stable-manure. Took up ea Rhubarb for forcing in Mushroom-house. Pricked seedling Cyclamens in boxes; shall keep them on shelv in warm greenhouse. Trenched vacant land as opp tunity served. Potted off cuttings of white and yell Marguerites. Shifted on Cinerarias. Transplanted ev green shrubs and trees.

November 10th.—Planted Roses of various kinds, c back partially the budded standard Briers, and furth loosened trees. Moved more Chrysanthemums to conse vatory; moved early kinds from which the flowers ha been cut to cold-pit to make room in house. Potted Deutzia gracilis and Hydrangea paniculata grandiflora f late blooming; the last-named are pruned back to thr buds. Placed under cover plants of Azalea pontica th have been standing outside.

November 11th.—Watered Mushroom-beds with we liquid-manure in which a small quantity of salt had be dissolved, using it at a temperature of 90 degs. To dressed Auriculas in pots in frames. Plunged a lot hardy Ferns in ashes in cold-frame. Commenced prunin Pear-trees on west wall. Trained specimen Azaleas a Heaths. Vaporised plant-house as a precautiona measure; there are sure to be a few flies on such plants Pelargoniums and Cinerarias.

November 12th.—Re-arranged a plantation of pyram Pears on Pear-stock; they want more room. Move young Peach and Nectarine-trees from wall to new hous and opened out trees on wall so as to fill up the spac Planted several beds of Pansies from cutting beds. Sowe Mustard and Cress in boxes under glass. Planted mo Lettuces on warm border to come in during spring.

November 13th.—Prepared a bed in sheltered part lawn for Tree Pæonies. Turned over heap of charre refuse and mixed burnt earth therewith to be ready f earthing up Tea Roses when frost comes. We shall wa till the crust is frozen, and then place a mound round ea plant; if very severe, a little dry Fern will be drawn among branches. Potted on young Ferns in warm-house

SPRING BEDDING.

Once again the season is at hand for deciding to how flower-beds and borders shall be plante for next spring's display. Spring flowers hav become almost as popular as those of th summer.

Bulbs, such as Tulips, Hyacinths, Narcissu etc., are extensively planted, and althoug their colours are often beautiful, there is a stif formal, naked appearance about the plants whe they are the only occupants of the beds. B adopting, however, something like the followin method of planting the beds this is avoided. I beds where it is intended to plant any of th bulbs previously mentioned, let such be plante with a dwarf-flowering or foliage plant to for a sort of carpet or groundwork. Then plant th bulbs at equal distances over the surface t within a foot or 15 inches from the outside the bed. In this space put some plants t give a good colour contrast as an edging. hardy ornamental foliage plant or shrub may b used as a centre to each bed. I have found suc beds to be very effective and much admired, a they are not flat in appearance, and each be becomes a pleasing, picturesque group in itself.

For example, let one bed have for a centre plant of Yucca gloriosa or recurvifolia; groun work Cerastium tomentosum, dotted over wit double scarlet Tulip Rex rubrorum, edged wit blue Pansy. In the centre of another be Cupressus aurea might be planted; groun work white Forget-me-not, dotted with Nar cissus Horsfieldi, purple Pansy being the edging In yet another bed put Retinospora plumos aurea; groundwork blue Forget-me-not, dotte with white Hyacinths, edged with pink Daisies The golden variegated Holly could be used a the centre plant in another bed; groundwor the white Rock Cress (Arabis albida), dotte with red Hyacinths, edged with white Daisies A silver variegated Holly also looks well in th centre, the groundwork Alyssum saxatile dotted with purple Tulips, and white Daisie

as the edging. Or the arrangement could be Cupressus Frazeri for the centre; groundwork purple Pansies, dotted with Narcissus poeticus, yellow Polyanthus forming the edging. Retinospora pisifera erecta is another good centre shrub; groundwork red Wallflowers, edged with white Polyanthus. Cupressus erecta viridis also makes a good centre plant; groundwork yellow Wallflower, edged with blue Pansies. Thujopsis borealis is a very good shrub too; groundwork Arabis albida, dotted with scarlet Tulip (Vermilion Brilliant), edged with yellow Pansies.

The above are a few pretty spring beds. The method of planting is capable of numerous combinations. H. Ellis.

ADAM'S NEEDLE (YUCCA GLORIOSA).

Yuccas are effective in gardens at all seasons, but the positions in which they are often planted are not always well chosen. As a rule, we find them dotted about singly; but they are most ineffective when thus treated. They are most striking when seen in irregular groups, the plants of various sizes—that is, a large, tall-stemmed plant in the centre, with others of various ages and heights surrounding this. Thus seen a group affords a succession of flowering plants and does not need disturbing for many years. Mr. T. H. Thomasset, Miramar, Lee, Ilfracombe, who sent the photograph from which the accompanying illustration was prepared, writes—

"I enclose a photograph of Yucca gloriosa, which may possibly suit you for reproduction. I photographed the spike here represented on June 24th last, and I may safely say it was a 'thing of beauty and of joy' for quite two months. It rarely blooms with us, even when well established; but Y. filamentosa blossoms regularly."

Adam's Needle (Yucca gloriosa). From a photograph by Mr. T. Thomasset, Miramar, Lee, Ilfracombe.

Single Dahlia Paragon—I consider this amongst the very best Single Dahlias, and one that everyone who needs single kinds should grow. The splendid colour, deep crimson with scarlet edging, gives it a distinct charm. It is a kind that should be grown to use for filling vases, etc., as the long stems lend themselves for this purpose. The late Mr. Wildsmith used to use it to good effect in the border in the kitchen garden at Heckfield. One of its faults is its tall growth. I find this is overcome by growing it in a long hardy plant border against the wall, and in this position it contrasts grandly with Sunflowers and tall Asters.—J. Crook.

FERNS.

EASILY-GROWN FERNS.

Now that decorative plants are used so extensively for house, and especially table, decoration, a great strain is put on gardens with a limited extent of glass, and plants that can be easily renovated, or replaced altogether, after a long spell of killing work in the house, are of the highest importance. As green foliage plants, and Ferns in particular, play such an important part in house decoration, everyone ought to grow the following sorts in quantity:—

Pteris tremula is probably the most extensively grown of any Fern in cultivation, for it increases readily from spores and makes a very pretty little plant in a short time. They are grown by thousands in the smallest thumb-pots specially for fitting into Chica vases for the table, and when they get too large for this work they must have a good shift into larger pots, and grown on for large vase decoration.

Pteris longifolia (the long-leaved Ribbon Fern) is still one of the most popular and useful of Ferns for small pots.

Pteris magnifica is a fine, bold, broad-leaved Ribbon Fern, very effective in a small state, and makes handsome specimens when potted on into larger pots.

Pteris cristata, or the crested form of Ribbon Fern, is extensively used for table decoration, as the crested or tasselled end of the fronds gives a very elegant and graceful look to these little plants. They are real gems.

Pteris cretica variegata is one of the best of all Ferns for the work, as it keeps very dwarf and compact, and lasts a long time in good condition in very small pots.

Asplenium diversifolium is a very dark green-leaved Fern with gracefully-arching fronds that vary considerably on the same plant, hence its name. It is readily increased by tiny little plants that form on the old fronds.

Lomaria gibba is, when in a young state, one of the prettiest of Ferns, and even in tiny thumb-pots has a distinct Tree-Fern habit of growth. The thorough moistening of the tiny ball of roots every few days by soaking is absolutely necessary.

Gosport. James Groom.

TREES AND SHRUBS.

Shrubs for house front and trees by the sea—What are the best shrubs for front of house, and what trees should be planted close to the sea?—J. D. C.

*** The undermentioned evergreen shrubs are suitable for planting in front of a house. They are all hardy and very free flowering. Olearia Haasti forms a nice bush of even, regular growth, flowers white and very fragrant; Rhododendrons of sorts; Genista virgata thrives well in dry, sandy soil, its yellow, pea-shaped flowers are very pretty; Andromeda floribunda delights in a peaty soil; Ligustrum lucidum and Laurustinus (Viburnum Tinus) are by no means particular with regard to soil; Berberis Darwini and B. stenophylla are quick growers, and very ornamental when in flower; Escallonia Philippiana and E. macrantha, Kalmias, Raphiolepis japonica, and Daphne Cneorum also deserve a place. Amongst deciduous shrubs Kerria japonica fl.-pl., Viburnum plicatum, Lilacs, and Magnolia stellata are very useful. The shrubby Honeysuckles, Philadelphus of sorts, Spiræas, Cydonias, Prunus triloba, Daphne Mezereum, Deutzias, Berberis Thunbergi (very beautiful), Hibiscus, Forsythia Fortunei, Chimonanthus fragrans, and Jasminums would suit you. The following trees would also thrive near the sea: Flowering Cherries, Pyrus spectabilis floribunda, Ornus (Flowering Ash), Acacias, Laburnums, Snowy Mespilus, Arbutus (Strawberry-tree), Thorns, Almonds, and Cotoneasters.

Propagating Hydrangea paniculata.—Can you tell me how to propagate Hydrangea paniculata from old plants that have done flowering?—Veritas.

*** It is too late to attempt to strike Hydrangea paniculata grandiflora from cuttings this season, as the wood is much too hard. It does not root very freely at the best of times; but the very best time to take cuttings is when the growths are a few inches long and the wood moderately firm. If a heel of the old wood can be attached, so much the better. The soil in which the cuttings do best is sandy loam. It is very important that the base of each cutting should be made quite firm. The pots should be plunged in a brisk bottom-heat.

Hibiscus.—Is there a white or red Hibiscus sufficiently hardy for Lancashire?—Springmorne.

*** All the Hibiscus syriacus (Althæa frutex) varieties are quite hardy. They are very accommodating plants, growing well in nearly all kinds of soil. If the ground is properly drained and in an open sunny position they will flower freely every year. The following are a few good varieties: alba plena, flowers double, white blotched with magenta; Celeste, flowers single, blue blotched and streaked with crimson; Duchess Brabant, flowers double, white streaked with lilac; rosea plena, flowers large, double red; Totus albus is very fine. The flowers are large, pure white, and borne very liberally.

Winter and spring-flowering shrubs.—We are anxious to have some winter and spring-flowering shrubs, notably Mezereum, Jasmine, and Azalea mollis. Will they grow from cuttings struck now in heat? If not, when should plants be bought and set?—Practical.

*** July is the best month to take cuttings of the shrubs mentioned. Daphne Mezereum and Azalea mollis are readily increased by seeds. All shrubs may be planted now. In addition to the shrubs you name, the following also flower during the winter and early spring: Chimonanthus fragrans is the most fragrant of all winter-flowering shrubs. It should always be planted in a moderately rich, well-drained soil, and, if possible, against a sunny wall. Lonicera Standishi and L. fragrantissima are a couple of sweet-scented Honeysuckles. Hamamelis arborea forms quite a small tree, and in January, when its leafless twigs are carrying its richly-coloured flowers, it stands out as the most distinct of all

winter-flowering trees. Cornus mas also makes a fine display about a month later. In a well-sheltered corner Garrya elliptica would flourish. Its long catkins hang in graceful profusion. It is a very handsome shrub. The flowering Cherries and Almonds are very beautiful spring-flowering trees. Pyrus Malus floribunda is a small-growing tree, which never fails to produce an abundance of its pretty blossoms every spring. Prunus triloba and P. sinensis fl.-pl. are very charming free-flowering shrubs. Both are very hardy, and grow well in all kinds of soil. They merit wider cultivation.

THE HYDRANGEA IN THE ISLE OF WIGHT.

THE accompanying illustration shows the Hydrangea Hortensia in the Isle of Wight. The photograph was taken by Miss Blanche Thorneycroft, in her father's garden at The Steyne, Bembridge, and is more than ten years old, and about 6 feet in height. It is protected by the house from the south-west winds, and a group of Pines affords partial protection on the east, but on the north it is rather exposed. Few places are more favourable for the growth of rather tender shrubs than the Isle of Wight, and of the many kinds that succeed well in such a genial climate as this the Hydrangea is as showy and handsome as any.

The Hydrangea in the Isle of Wight.

Planting Yew-hedge.—I would like to plant an English Yew-hedge along the front of my house. There are a few large trees growing along the front—do you think they will interfere, as they will be growing under them? This is a cold part of the country—do you think a Yew-hedge will grow here, and, if so, when is the proper time to plant, and what distance apart?—AIRDRIE.

*** The English Yew grows well under the shade of trees. It is quite hardy in Scotland. Plant now, and allow about 18 inches to 2 feet between the plants.

The Blue Gum-tree (Eucalyptus globulus) in Ireland.—My attention having been called to an account of the Eucalyptus grown in Staffordshire by a correspondent in GARDENING, of October 16th instant, I may mention that there is a fine specimen growing in the gardens at Garron Tower, County Antrim, of which I will give you the dimensions. The tree, 1 foot from the ground, is 12 feet in circumference. Four feet from the ground the trunk divides into three stems, one of them measuring 6 feet 6 inches in circumference, the second 5 feet 7 inches, and the third 4 feet 5 inches. The tree is 60 feet high. I raised it from seed some forty or more years ago. It commenced to flower and seed freely ten or twelve years ago, from which I have raised numerous seedlings. The tree casts the old bark every year. The severe frost we had three years ago killed the points of some of the branches for 5 feet or 6 feet, but it has now quite recovered, and growing as luxuriantly as ever. The situation is about 250 feet above sea-level, adjoining the coast.—GEO. PORTEOUS.

*** With this note were sent two pieces of bark, which show how robust the tree is.

Hedge for Hampstead garden.—I shall be much obliged if you would advise me as to what kind of a hedge I should plant inside an Oak-fence facing the public road? The soil is clay. I wish it to grow quickly so as to shelter my garden.—J. B. S.

*** The following plants are suitable for hedges: Thuja Menziesi (Lobbi) and the American Arbor-vitæ (T. occidentalis) are good quick growers and of good habit. Cupressus Lawsoniana is equally suitable. Darwin's Barberry (Berberis Darwini) and the vigorous forms of Laurels are also well adapted for planting in clay soil. The common English Yew (Taxus baccata) and the gold and silver-leaved varieties also make capital hedge plants. The same may also be said of the evergreen oval-leaved Privet (Ligustrum ovalifolium), Hazel, Hornbeam, and Cherry Plum (Prunus Myrobalana). The common Thorn and the green-leaved Holly are well known and very handsome when well established.

Clematises on their own roots.—Clematises, like Roses, are so universally grown as grafted plants, using the roots of C. Vitalba or Viticella for the stock, that very few ever give a thought to growing them in any other way. They can easily be increased by cuttings or layers, for I have rooted a good many of various kinds, especially of that old well-known kind C. Jackmani and that universally grown early white C. montana. As some readers may like to try striking cuttings, allow me to say that the best time is now close at hand. As the Clematis starts into growth very early in the new year, on sunny walls, the young shoots will be found pushing freely. When they are from 4 inches to 6 inches long take them off with the heel or bud intact and insert them round the edges of small pots in fine sandy soil, and treat them like any other soft-wooded cuttings. The majority of them will make good plants during the season. As they are very brittle they require careful handling.—J. G.

Cutting down herbaceous plants.—At this time of year, when flower-beds and borders are receiving a general clear-up, hardy plants are stripped of their old leaves on the plea of tidiness just as the most inclement period of the year is at hand. If one remonstrates with the gardener, you are sure to be met with the remark, "Well, they are dead, and of no more use. Why not cut them off?" As far as appearance goes, the advocates of cutting down get the best of the argument. The old drooping leaves of Pæonies, Irises, Delphiniums, and a host of others not only look sered and weather-beaten, but they collect and hold in their embrace all the loose tree leaves that are flying before the autumn gales, and collectively they form a very effectual screen against the winter's cold, and above all it must be remembered that where the leaves are cut off the hollow stems let the rain down right into the heart of the plant, while the bending stem keeps the heart dry, and therefore able to resist much more cold. I have often been struck with the luxuriant growth of plants left in old totally neglected gardens, where the old foliage of one year dies down and forms a top-dressing for the roots during the next. Although the strongest growers in these cases soon overgrow the weaker ones, I cannot but think that a lesson may be learnt that may make us pause before we shear off even the withered leaves of our hardy plants at the approach of winter, and leave them to face it without any artificial protection. No wonder that many a plant that would prove hardy if left alone dies outright, the victim of misdirected zeal.—J.

OUTDOOR PLANTS.

SNOWDROPS.

The common Snowdrops in the accompanying illustration will give our readers some idea of the charming natural effect that may be produced in the wild garden. The idea of a wild garden as the phrase is now understood is by no means a new one, and must not be confused with the so-called wilderness which our attention has been especially drawn to in gardens, and which was nothing less than a confused mass without shape or form, and entirely devoid of interest. In the wild garden plants with a little assistance may be grouped in a perfectly natural way and allowed to develop without the cutting, trimming, and staking necessary to make plants in the trim border look respectable. The number of plants at our command for a purpose like this is innumerable, including among others Snowdrops, Aconites, Daffodils, Bluebells, Squills, Crocuses, Tulips, Fritillaries, Lilies of various kinds, Snowflakes, and numerous other bulbs. The idea can be carried further, however, and with the aid of Spiræas, Globe Flowers, Poppies, Day Lilies, Hydrangeas, Cyclamens, Pelargoniums, Pæonies, Larkspurs, American Daisies, many of the finer umbelliferous plants, etc., the interest could be kept up all through the year with half the expense attending the carpet-bedding system. The place of the scarlet Pelargonium could be taken by many of our hardier plants, and the blazes of colour such as may be had by planting large stretches of Anemones, etc., are certainly not surpassed by any of the exotic plants we have seen bedded out.

The common Snowdrop (G. nivalis) is a true native of our copses, and in many places it may be found even now growing wild, though the avaricious would-be botanists have almost extinguished it from easily accessible stations. Although a fairly common bulb in gardens, it might with advantage be greatly increased. Its usefulness as an early spring flower can hardly be overrated, and its beauty in a semi-wild condition is delightful. Associated, as we have seen it, with Winter Aconites, Scillas, Crocuses, and early Daffodils, all peeping through the "long and pleasant Grass," it leaves nothing to be desired, and as the flowers only die to come again with renewed vigour, labour is reduced to a minimum.

G. corcyrensis, or præcox, as it is often called, is one of the earliest, as its usual flowering time is December. It was introduced to this country by the late Harpur Crewe, who received the bulbs from Mr. Hughes, late chaplain at Corfu, and differs little from the type except in the time of blooming.

G. octobrensis always flowers during the month of October. That this is a precocious variety of G. nivalis there can be no doubt, but it is an extremely useful addition to the autumn bulb garden.

G. Sharlocki is more curious than beautiful, having two long spathes exceeding the green-tipped flowers by an inch or so.

G. poculiformis is one of the most beautiful of the spring Snowdrops. The inner segments, instead of taking the usual form of a tube or cup, are produced to about the same length as the outer, making a fine regular flower. All the segments are pure white. It is of garden origin.

G. reflexus has smaller flowers than the type, with narrow segments.

G. lutescens has the inner segments tipped with yellow instead of green; otherwise it is identical with the type. It seems to have a very delicate constitution and wants care. There is a double variety, but I believe it is as yet very rare.

G. Imperati differs from G. nivalis in having broader leaves and much larger flowers, and is a native of Naples and Genoa. G. Melvillei is a garden variety very nearly allied.

G. caucasicus has also broader leaves than the type, eventually 8 inches to 10 inches long and about 1 inch broad; flowers larger and later than in the type. Native of the Caucasus. Redoutei major and Caspius are hardly distinct.

G. virescens. — This was introduced by Max Leichtlin, who received the bulb from Vienna, but its origin is somewhat obscure. It comes nearest to forms of G. caucasicus; the outer segments flushed on the outside with green.

Elwes's Snowdrop (G. Elwesi) —This is a glorious Snowdrop. It is a native of mountains of Asia Minor, 2,000 feet to 5,000 feet elevation, and was first gathered by Balansa in 1854, although not considered distinct until individualised by Mr. Elwes in 1875. There seems to be two strains in cultivation at present, one in which the flowers are smaller than in the other. The flowers of this species increase in size from the opening of the flower onward, and it is not unusual to see them three times larger when fully developed than when first open. G. globosus is a variety of Elwesi with globose, usually two, flowers. Everyone who cares for Snowdrops should get G. Elwesi, so strong, tall, and free.

Broad-leaved Snowdrop (G. latifolius).—This species is usually found in gardens under the name of Redoutei. It is very distinct, with broad bright green leaves and rather small green-tipped flowers. Native of the Caucasus; flowering February and March.

Snowdrops naturalised in the Grass.

The Crimean Snowdrop (G. plicatus).—A useful and distinct species from the mountains of the Crimea and Dobrudscha, flowering with us near London in March and April. The leaves are very glaucous, growing to a foot or more long, and usually an inch broad with reduplicate edges; flowers large, outer segments white, inner green on the upper half, with a white edge.

Several new Snowdrops have been introduced lately, Galanthus Ikarise and G. Fosteri amongst the number, but I want to know more about them before recommending them strongly to your readers. R. T.

Plants for a long, narrow border *(G. P.).*—Having had some experience of planting a border, backed by a Laurel-hedge, I thought a few notes as to the results might help your correspondent. Five years ago, when this garden first came into my possession, the border was planted with Strawberries, so had been well worked. It is backed by a Laurel-hedge fully 8 feet in height, and is on a gentle slope. I had it well dug, the soil cleared of roots as much as possible, and well manured. I planted Pentstemon barbatus, Geum coccineum, Iceland Poppies, several kinds of Michaelmas Daisies, and at the back a row of double Hollyhocks. Two years after I had the plants lifted, the border again manured, and replanted with the same plants. Since then it has not been touched, and the whole of this summer and last was a blaze of colour. Once or twice in the month I give a good soaking of liquid-manure from the farmyard, besides watering it thoroughly every week in dry weather. All the plants have grown into strong clumps, especially the Michaelmas Daisies. I may say the border faces due south, the soil being Hertfordshire clay. —C. E. W.

PLANTING CLEMATISES.

One is often disappointed with these lovely flowers, from their refusing to thrive so well as others that are apparently in a similar position. This may be caused from drip during a spell of wet weather—a cause, by the way, that many do not sufficiently look into, especially during winter. The Clematis is often placed against a wall or building, and it frequently happens that a large quantity of water drops upon the plants.

Some varieties object to foster roots, and swell very much at the junction of graft and stock, when the canker or undue constriction may be the cause of failure. It is an excellent plan to partially layer the young plants when planting by making a tongue for an inch or so a foot above the base of growth. Bend this down and layer in the usual way. The advantage lies in the choice offered to the plant to grow upon its own roots instead of the foster roots or to make use of both. If a few growths are layered from time to time, we get a dwarfer or, at any rate, a better clothed creeper at the bottom, besides imparting fresh vigour to the plant. Clematises are quite hardy, but as snails are so fond of the young growths, and will eat them almost before they appear through the ground, I advise a little coal-soot to be placed around the crown at this season, then a few ashes, and finally a second dusting of soot. In the spring I give a slight dusting of freshly slaked lime or soot once more, and am seldom troubled with slugs. P. U.

AUTUMN PLANTING.

It seems to me that the majority of gardeners (and I write personally, for the thought has only lately occurred to me) fail to realise that in nearly all hardy plants a mixture of varieties (not species) is invariably in good taste. The blending of colours that is seen either from a distance or close at hand produces nothing objectionable. I noticed this particularly this season first with a mixed border of Polyanthuses, and later with one of Carnations. Naturally, if seed is required of the former, or if the Carnations are to be layered where they have flowered, it is advisable to plant in blocks of selected colours or in separate varieties, but if in neither case this is desired, then a general mixture may be safely adopted with the very best results. We have, too, in such planting a variation in the height that has nothing of the severe regularity about it inseparable with the other style, but every plant varies as much in height as in colour. Perhaps in the Carnations a pronounced yellow would not look at home side by side with, say, Ketton Rose, but I have never yet found a yellow that is at once perfectly hardy and free, and so have nothing of that shade among the border varieties. The same rule holds good with things of larger growth—Pyrethrums, Phloxes, and Starworts, for example. One can hardly in either case pick out a variety and say that it will not from a colour standpoint associate well with its fellows, and so it comes that the practice of grouping species in great variety can always, if space permits, be successfully adopted. Whilst on the subject of hardy plants I should like to add a word at this season on increasing by division and the best means of performing the same. This with many, perhaps the majority of things, is the mode of propagation most in vogue in private places where a large stock of any one particular species or variety is not required, and it possesses the merit of giving very little trouble —no storing away in nursery or prepared beds for the time, simply lifting, dividing, and replanting where required. Now the particular

point to which I want to draw attention is the advisability of care in such division. Even with the Pyrethrums, close and matted together as they are, it is worth consideration, but very much more where the crowns are at all loose, and rough handling means not dividing them into three, four, or half-a-dozen compact pieces as their size may admit, but splitting up into fragments, which are then sometimes huddled together and crammed into a small hole to try and hide the careless work. The right way in dealing with these things is to shake the soil away gently from the crowns, then to run the fingers lightly both through these and the roots to find where the place of separation can most easily be effected, and to perform the operation with a sharp knife, taking care neither to bruise nor mutilate crown or root more than is absolutely necessary. It is only reasonable to infer that plants so treated will feel the division least and come away much more quickly in the following spring. B.

Saxifraga cuscutæformis. — This is another of the less common Saxifrages, which goes on flowering in a cold-frame to near Christmas. It belongs to the sarmentose section, and is sometimes called the Dodder Saxifrage from its numerous thin stolons. The least plant of its section, it has the biggest flowers, and these of purest whiteness and of moth-like shape, combined with the charming wedge-shaped foliage, mottled and netted with delicate white lines, all go to make this plant of the utmost interest and beauty. As it can be kept in sheltered nooks in the warmer parts of our country, in cold-frames, greenhouses, or even dwelling-room windows, it should be more often seen. Many complain they lose it. It may not be generally known that well-established plants develop crowds of minute tubers or granules, and once you get a strong plant of this character it is not easily lost.

Gold-laced Polyanthuses.—A grower of a very high-class strain of the gold-laced section recently stated that there was very little call for seed, very few persons caring to grow these old florists' forms. There can be no doubt that these have found in the fine free-growing border section very formidable rivals, and those who grow Polyanthuses for garden decoration only and not for exhibition greatly prefer them. And yet there can be no doubt that there is much that is very attractive in a really good strain of the gold-laced section, for the markings are charmingly defined and interest in them increases as the florist's points in them are understood. Nine-tenths of those who grow these hardy spring flowers outdoors not only do not understand what are the properties of a good flower, or indeed, except cursorily at some spring show, have ever seen good ones. A bad strain usually comprises the veriest rubbish Polyanthuses can produce. It would be gratifying did a few more persons who fancy hardy flowers, but become attached to the gold-laced forms, study them, improve them, and thus once more bring them into popularity. With regard to the border section, although far less grown for show than they deserve, yet they have in them merits it is but needful to understand to realise. The pips should be borne in good even trusses on stout, erect stems, and should be of good size, though not unduly large, have good clear colours or markings, pure yellow or lemon eyes or centres, well defined, and have perfect thrum eyes. These are points any amateur can easily comprehend, and should try specially to secure. Selection will do much and some careful intercrossing will help also.—A.

ARCHES IN GARDENS.

We see in the accompanying illustration an arch which we hope those who disfigure their gardens with galvanised iron erections, ugly in colour and design, will copy. This is a simple and strong support around which Roses and Clematis cling, and thrive also, which is not the case when they are attached to galvanised iron. We think a fruitful source of failure with climbing plants is through being attached to those erections which are not congenial to them. In the illustration strong supports of wood from the place probably are joined together, and the arch is not obtrusive. It adds beauty to the charming border in the background. One can understand how thoroughly anything of the galvanised iron character would spoil such a picture.

Arch across border at Fillingham Castle covered with Clematis and Gloire de Dijon Roses.

Treatment of Lilies *(An Amateur).*—Lilium excelsum and L. umbellatum are two very fine hardy Lilies. The first-named grows to a height of between 4 feet and 5 feet, succeeds well in ordinary garden soil, and bears very freely its beautiful nankeen-yellow flowers. L. umbellatum is a very early, free-flowering variety. It produces large heads of flowers, and, like L. excelsum, its cultural requirements are very simple. Both Lilies deserve to be planted with a very free hand. Vallota purpurea is a different kind of Lily. It is much more exacting, not only with regard to soil, but also to position. A very warm, well-drained border suits it well. Soil composed of two-parts fibrous-loam to one of peat, with a little silver-sand added, will be found a suitable compost for planting the bulbs in. They may also be grown in pots and kept in a conservatory. The bulbs should be disturbed as little as possible.

FRIENDS OF THE GARDENER.

EARTHWORMS IN GARDENS.

Among all the different creatures that inhabit our gardens there are few, if any, that are more numerous or better known than the earthworms. Few realise the enormous numbers of these worms there are in gardens unless they have examined the beds and lawn with a lantern at night, or driven a spade well into the ground and then worked it sharply backwards and forwards several times. This generally brings all the worms in the immediate neighbourhood to the surface in a great hurry. It has been calculated that there are probably no less than 53,800 on an average in an acre of garden ground, weighing about 356 lb. It is therefore fortunate that these creatures are so harmless in gardens; in fact, harmless is not the proper term to use, as they are doubtless beneficial, and it is only under particular circumstances that they are in any way a nuisance. Of course, if they are allowed to find their way into pots they are decidedly out of place, but even then they do not injure the plant, except indirectly by interfering with the drainage of the earth, so that when the plant is watered the water all runs through quicker than it ought. At times also worms are troublesome by drawing young seedlings into the ground, and some persons object to the casts on their lawns. They certainly do not add to the appearance of a lawn, but they are easily swept away, and are very useful as a top dressing to the Grass when so broken up. There are no less than nineteen different British species. I do not propose to give any description of them; they all resemble one another very much in general appearance, and are much of the same colour. They differ considerably in size when full grown. The different species are distinguished from one another by the position of the "clitellum" (the thickened part of the body, which is commonly supposed to be the joint where, when a worm has been cut in two, the two parts have joined together again). This clitellum is associated with the reproductive functions, and does not always occupy the same number of joints, nor is it always placed at the same distance from the head. It may be situated on the twenty-sixth and six following joints, or it may be on the thirty-fifth and three following joints, or on the intermediate ones. It, of course, stands to reason that if a worm had been really cut in two that nothing short of a miracle could join the parts together again so that the creature could live. It is difficult to imagine what could have given rise to such an idea. Until within

comparatively a few years ago no one except anglers took any interest in worms, and they only cared for them as baits. Isaac Walton, indeed, gave instructions that they should be treated tenderly as if one loved them, but that, I imagine, was more with the idea that they should remain longer alive and useful as a bait than out of any compassion to the creature.

It was not until Darwin wrote his memorable book on worms that they were much thought about, and till then very few, if any, persons had the slightest idea of the very important part that earthworms play in the economy of nature. Earthworms are comparatively low down in the scale of animal life. They belong to that division of the animal kingdom known as the "Annelida," which is placed between the "Rotifers" or "Wheel animalcules," and the "Crustacea," the class that contains the lobsters, crabs, shrimps, etc. As is well known, they have no limbs: eyes and ears are also wanting. It seems, however, that they are not insensible to light, and appear to be able to distinguish night from day. They have no organs of hearing, and are apparently perfectly deaf. Their sense of smell is very limited, and seems to be confined to the odours of substances that may be of use to them as food. Their sense of touch, however, is strongly developed, and they are keenly alive to a current of air, and to any vibrations in the soil. Though worms have no limbs they are able to move about with considerable rapidity, and if one be found with only just the end of its tail in its hole, the slightest touch will make it withdraw into the hole like a flash of lightning. Their powers of crawling are mainly dependent on each joint being provided with eight bristles arranged in pairs on its lower surface. These bristles give the worms a hold on the surface that they are passing over, and are in most cases shaped like a very elongated S The only organ that these creatures have at their disposal with which to procure their food, make and line their burrows, is their mouth, which one would imagine, under the circumstances, would be a complicated structure, or at any rate a powerful, well-developed organ. On the contrary, however, it is merely a soft, fleshy opening leading into the throat, entirely devoid of teeth or jaws, but a small lobe overhangs the mouth which, to a certain extent, forms a prehensile organ, and with this the worm has to make its burrows and feed itself. Worms are hemaphrodite creatures—that is to say, each worm is both a male and female, but they cannot fertilise themselves. They lay their eggs in a capsule containing several, but, as a rule, only a few (generally only one) is fertile. The young worm when it is hatched feeds on the other eggs and the contents of the capsule. These capsules at first are nearly transparent and white; afterwards they become of a yellowish-brown colour. They are about ¼ inch long (at least, those I have met with are), but no doubt they vary in size according to the species. They are slightly oval. At one end is a small tube by which two are sometimes joined together. At the opposite end is a small projection. When the young worm is nearly ready to leave the capsule, the pulse in one of its large blood-vessels can easily be seen with a pocket-lense. The different species of earthworms vary very much in size. Some are no thicker than a pack-thread, and are only ¼ inch in length, whereas in Australia there is a giant species said to be as thick as a man's wrist, and to measure from 6 feet to 8 feet in length. Fancy what consternation there would be in a garden if such worms as these made their appearance when the gardener began to dig! Earthworms seem to be very generally distributed over the world. They occur as far north as Siberia and Nova Zembla, and are also found in the tropics. The burrows of worms are often much deeper than is generally imagined, being no less than 5 feet or 6 feet in depth, which are formed partly by the worms forcing their way through the earth and partly by their swallowing it and passing it through their bodies. Mr. Darwin shows by his figures that each worm annually ejects 1½ lb. of earth. The food of worms consists of leaves, which they drag into their holes, and any nutritious matter that may happen to be in the soil they swallow, so that except for a few seedlings they drag into their holes worms do not injure plants in any way. Some further remarks on the habits of worms I must defer to another occasion. G. S. S.

THE PYRENEAN ROCKFOIL.

Saxifraga longifolia has appropriately been styled the "Queen of Rockfoils." Of this plant there are almost endless forms, obviously the result of seed, which in many plants is the only way of perpetuating them, as they never produce offsets. The varieties which are prone to do this usually produce fine rosettes and fine spikes of flowers also. The seed of these should be carefully collected, so as to keep up the stock. Some varieties again produce offsets freely, and by this means are kept going. Raising seedlings of this plant is very interesting work, for among them may be found varieties with long linear and gracefully recurved leaves, others having a cupped centre till maturity is reached, and others still with broader leaves. If alpine collectors would take the precaution of obtaining seeds of this plant from the largest spikes, we might grow it in hundreds where only dozens now exist, and if sown as soon as received and grown quickly without a check, would make excellent subjects for pot culture or for massing in beds or on the rock garden. S. longifolia forms large rosettes of linear crusted leaves and always grows best on the face of perpendicular rocks. An old brick wall answers admirably, and a good plan I find is to sow the seeds in the crevices. It may be described as a biennial; the plants, at any rate, die after flowering, the only means of propagation being by seeds, which

The Pyrenean Rockfoil in the rock garden. Engraved from a photograph by Mr. J. H. Bland, Tobarsocran, Carnmoney, Co. Antrim, Ireland.

ripen freely in this country. Other and equally interesting species or varieties are splendens, mutata, pectinata, etc. K.

Veronica Purple Queen.—This shrubby variety of Veronica is very useful at this season of the year for conservatory decoration or in the milder parts of the country as a shrub in the open ground. It is of a compact, freely-branched habit of growth. The different varieties of Veronica which have originated from the intercrossing of two or three species are all very pretty and useful from their autumn-flowering qualities, while there are now several distinct shades of colour among them. One of them-imperialis, is very effective by reason of its con, spicuous clusters of rich reddish amaranth-coloured blossoms, while other good kinds are Jardin Fleuri, carmine-red; Celestial, pale blue; Reine des Blanches, white; Blue Gem, a very dwarf variety, with pale blue blossoms; Bolide, reddish; Eveline, rosy-lilac; and Crême et Violet, pink. The readiness with which these Veronicas can be increased from cuttings, their naturally bushy growth, and their profusion of blossoms which are spread over such a lengthened period, render them, in conjunction with their robust constitution, a very desirable class of autumn-flowering plants. Among other features, they hold their own better than many other subjects in smoky districts; hence in towns, where there are so many small conservatories, they are extremely useful, and in London as window plants they are very general, for though in many instances, from the absence of direct sunshine, they do not flower well, yet the foliage is always bright and cheerful, despite the hardships they have to contend with.

FRUIT.

THE BEST APPLE.

Which is it? A question often asked, and perhaps a discussion in Gardening might help some of us in finding the answer. The definition is easy: The best Apple tastes like a Ribston, looks like a Queen, bears like a Suffield, keeps like a French Crab, and does all this every year in every situation. And its name is the "Don't-you-wish-you-may-get-it."

But perhaps an easier definition is that Apple which everyone would have in his garden if he were limited to one tree, and in that case probably the one selected would be the tree which would, with the greatest certainty, provide good Apple-tart and occasional dessert fruit more days in every year than any other kind. No doubt even this ideal tree would not be the same in every county in England; but for those not favourably situated for fruit-growing, who must consequently be contented with something less than the top quality, the accompanying branch comes as near the desired thing as we are likely to have at present. It is an excellent cooking Apple, when ripe fairly good to eat uncooked, keeps till Easter, is frost-proof and wind-proof, and for the last nine years has never failed to bear heavily, except 1894, which was a light crop.

The tree has no name, being a self-sown seedling, and, of course, on its own roots. It is too big (about 35 feet high) to control, or no doubt by thinning the size of Apples might be improved. Soil fairly good, sub-soil clay and red sandstone. Situation cold, damp, exposed, 800 feet above sea, in extremely unfavourable fruit-growing country, North Staffordshire. In packing three of the Apples unfortunately got broken off, but enough remain to show the curious rope-of-Onion style in which they grow. The tree has long, pendulous branches, and the fruits reproduced along twigs of 3 feet to 4 feet in length. The most severe storms occasionally blow a few off, but the long branches swing gently before the breeze, and never allow it to give the sudden jerk which snaps the Apples from their hold. If not gathered they remain on the tree until the spring. The crop has never been accurately weighed, but a rough estimate of an average year is about half-a-ton. Being on its own roots, it is supposed that the Apple should be reproduced by cuttings, not grafts. I have this year succeeded in getting several cuttings to grow, but at present none large enough to bear. J. A. L.

*** Thanks for interesting letter and Apples, which, in colour, look like French Crabs, very tart and excellent in flavour. We think the fertility and good behaviour of the tree are, to some extent, due to its being on its own roots, as those who observe the state of our orchards will often notice grafted trees cankering and decaying long before they attain that age. We think it would be well if more people would raise seedling Apples from the pips of the very best kinds. In the case of getting a good variety in that way, there would, we think, be no trouble whatever in increasing it from the root as well as in the ordinary way of grafting, and cuttings, too, should succeed—certainly layers. —Ed.

FRENCH STRAWBERRIES.

I have been hoping that some of your correspondents would have given us their experience, both from north and south, in regard to the new French Strawberry Louis Gautier. If (as it professes to do) it really not only produces but ripens fruit on its runners end of August or beginning of September, it will be a valued kind. One of the late Dr. Roden's seedlings, Excelsior, was said to possess this character, but I never saw a ripe fruit on it. My experience is not worth much, as will be seen by what I say; but such as it is I give it, as it may be a guide to others. I only got my plants late last May, very poor, weak, spindly specimens. The most I expected was to keep them alive, so as to do something next year. Under good treatment, however, they flourished wonderfully, grew into fine large strong plants, and gave lots

ot runners. Of these I only allowed two to each plant. Several of these threw up flower-stalks. I nipped off all except on one runner. This one bloomed about the 10th of September. It is described as being a pinky-white in colour; and on the 16th of October I gathered the first fruit, as I thought it was no use leaving it on longer so late in the year. It was a very good size—about as large as an ordinary Keene's Seedling—and was transparent and white, the seeds pink. This day—November 1st—I have another fruit a little more advanced and nearly as large. I consider this as full of hope. Of course, it did not have fair play. The plants were put in extremely late, and we had an unusually bad summer and autumn. I have every expectation that next year it will be a success. If any of your readers have had a more extended experience than mine I should feel grateful if they would give it. I shall also like to know whether the autumn fruit-bearing runners are good for a summer crop the following year? Also whether they think it would be a good plan in a bad climate—such as mine is—to lift the bearing runners and plant them in a frame, so as to give them the advantage of glass covering. It would also be satisfactory to hear something about the flavour of the fruit from the runners. I may mention that some of my runners are now 15 inches in diameter. This shows that the Strawberry is a vigorous grower.

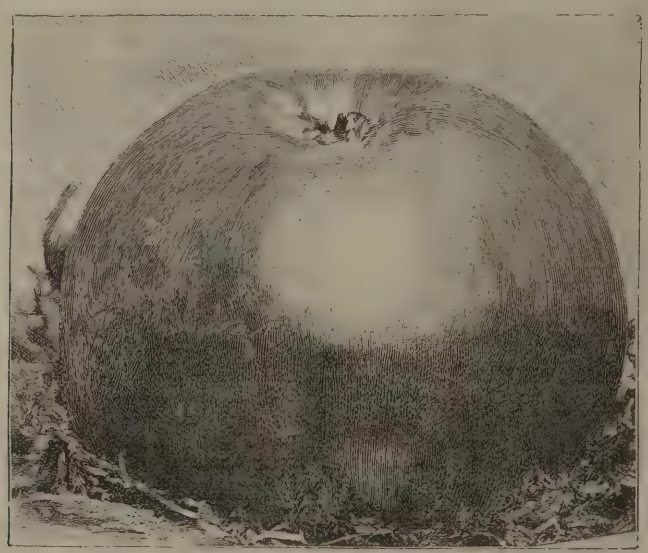
Ireland. D. K.

DESSERT APPLES.

WE have in season, at this time, the two best dessert Apples anyone can grow, as, fortunately, they are valued. In advising varieties, it is only fair to add the various kinds differ greatly in certain soils, but, fortunately, less so than Pears, and Apples will give a better return and in a shorter time, so that they are more suited for the amateur's garden if a little attention be given to stock, variety, and planting as advised. For early fruit it is difficult to omit some of the older varieties, as they crop so well and are not inferior in quality. On the other hand, a few of more recent introduction are more pleasing to the eye and sell better.

LADY SUDELEY does well in any soil. I give it a high place amongst early Apples, being in season in the southern parts of the British Isles in August, and keeps well into September. It is a very pretty fruit, rather large, and rich and spicy in flavour. The fruits are perfect in shape, striped with crimson on a golden skin, and are best when gathered from the trees. I do not advise storing. It should be grown in bush form on the Paradise-stock, though it does grandly as a standard, as it fruits on the points of the shoots. Hard pruning is not advisable, so that I do not recommend it for orchard culture. This may be classed as one of the most profitable introductions of late years.

WORCESTER PEARMAIN, also a September fruit, is a splendid kind for amateurs on account of its rarely failing to fruit. I admit it is not a first quality variety, but gathered from the trees it is not inferior, and as it succeeds in any form is very valuable. The tree is of upright growth, and bush-trees on the Paradise-stock fruit grandly. The fruits colour well, and few Apples command so ready a sale. I do not advise storing or growing many trees if only for



Apple Blenheim Orange.

the trees can be got specially grown on suitable stocks. Grown thus, in a dwarf form, they soon fruit and become profitable. The varieties I allude to are Cox's Orange and Ribston Pippin; the latter, as most Apple growers know, does not thrive in all soils, being addicted to canker. On the other hand, if it is now grown on a suitable stock in a dwarf form, excellent results are obtained. These varieties and the one illustrated, Blenheim Orange, I will describe more fully in a list of suitable varieties; but, it is only just to add, the Blenheim must not be expected to fruit so quickly as the others named. On the other hand, when it has attained age, it must be given front rank amongst dessert or cooking kinds, as for the latter purpose it is esteemed. Another important point in culture is autumn planting. The amateur will find the best results are secured by planting before the end of the year, and not, as is often done, in March, as should dry, easterly winds follow on a dry, hot summer, trees planted late make poor progress and are difficult to keep growing. They droop and require much moisture. In advising varieties I will take the fruits in their season, not according to their value, as some of the latest or mid-season fruits are much better than the early ones. On the other hand, amateurs need early kinds, and as it is not necessary to store them, home supplies, but it is a variety which should be in all gardens, and may be grown as a bush. It makes a handsome pyramid, and in standard form a profitable market fruit. To show its quality it is equal to any of the first earlies if not too ripe when gathered.

KERRY PIPPIN is one of the best flavoured of the early Apples, a small and firm fruit. The best fruits are produced on the Paradise-stock in bush form, and fruits should not be stored, but allowed to ripen on the trees. It does well in espalier form, but on heavy clay soil does not give such fine fruits but later; its season is September. It is a medium cropper, not so prolific as those named above, but well worth a place. The small

SUMMER GOLDEN PIPPIN OR YELLOW INGESTRE is a beautiful, small fruit, but its size is atoned for by quantity of crop and quality. The tree is a compact grower, does well in any form, but is well worth growing as a bush on the Paradise-stock. Grown thus the fruits colour well and are fine.

KING OF PIPPINS is a sure and heavy cropper. It is a nice-looking, medium-sized fruit, good in quality; in fact, handsome for table, and not fastidious as to soils or locality. It will keep for months in a cool store, but is in season during October till Christmas. The fruit has a firm flesh, and the tree is an upright grower, being valuable for the market. In bush form it makes compact growth. It is a variety that should be in all collections, however limited, on account of its keeping and good cropping qualities.

RIBSTON PIPPIN.—This is often described as the finest of dessert Apples in its season, but in my opinion it must come second to Cox's Orange. For many years this variety was grown in standard form, with the result that in unsuitable soil it cankered badly. The trees did not give a heavy return, but grown in bush form on the Paradise-stock it thrives grandly. The quality in many cases is equal to Cox's Orange. This is not so good in standard form, and does best in warm, well-drained soils, splendid as a cordon or espalier, and in the north well worthy of a west or east wall.

COX'S ORANGE PIPPIN is in season the same time as the last-named, or it may follow it if kept cool. Indeed, by allowing the fruit to hang late on the trees I have had good fruit well into March. Its season is November to January, and it is best grown on the Paradise-stock as a bush or pyramid, bears freely, and in addition to its good eating qualities it crops well. It is rightly termed the best of all dessert Apples. I do not advise standard trees for amateurs unless the soil is warm and the garden sheltered. This variety is never beaten in any class where quality is considered.

BLENHEIM ORANGE is noted for its good table qualities, and it cooks and keeps well. If grown as an espalier, or in bush form on the Paradise-stock, it fruits much earlier and is a good bearer. In standard form it is very prolific when the tree is old or of a good size. For dessert on the Paradise-stock the fruits mature quickly and colour grandly. In pyramid form it is rather spreading and requires space. It is a variety every amateur should possess, and it commands the best sales of the mid-season varieties.

SCARLET NONPAREIL is a splendid winter fruit, in season from December to March, not large, but good, handsome in shape, colour, and of delicious flavour. The fruit is not good in standard form, but well suited for bush or dwarf pyramids. It is a slender grower and prolific when grown on the Paradise-stock and a very late fruit.

BAUMANN'S REINETTE is an excellent late fruit grown in a dwarf form on the Paradise-stock. It is in season from December to March, and is a very pretty fruit, rich in colour, and a great bearer. It lacks the good qualities of some of those named above, but its value is its crop, colour, and keeping. As a market fruit it sells well, and keeps better than the Blenheim. Like the last-named it cooks well, in addition to its free-bearing qualities.

ROSEMARY RUSSET is a free grower, and though not always so free as the kinds named above it should find a place on account of its keeping qualities, flavour, and appearance. With me Royal Russet is superior, but I think this is a matter of soil or stock. The Rosemary Russet on the Paradise in bush form is excellent, and keeps well into the spring.

STURMER PIPPIN is one of the latest Apples grown. It is in season from March to June. A medium-sized fruit with Ribston flavour, it does grandly on the Paradise-stock in bush form, and also succeeds in warm localities as a standard. Amateurs who like late fruits should not omit this variety, as if gathered late, and given a cool store, it is one of our best keepers, the quality being always good. W.

Pear Swan's-egg.—With so many handsome Pears, cultivators are apt to overlook some old kinds that still have merit, and Swan's egg is one of them. It is not pretty, but for flavour it is a long way before many fine-looking kinds. I have a bush-tree of it which generally gives us a crop more or less. The fruit this year was of good size and more free from spot than usual. I allowed them to hang on the tree as long as possible, and now at the end of October they are fit to use and the flavour is good. I remember this kind some forty years ago growing on standard-trees in orchards in Somerset, and there the flavour was good.—J. CROOK.

Lilium candidum. — From queries received it is evident many readers have a difficulty in flowering this beautiful Lily, often

spoken of as the Madonna Lily. Some have transplanted their bulbs several times in the attempt to give them a more suitable soil or position; others have manured heavily. We see this Lily in numerous cottage gardens and in varied soils and positions doing exceedingly well, and yet undisturbed from decade to decade. I am inclined to the opinion that such treatment suits it best, and have often found no little difficulty in establishing it; it has also thrived better in a rather heavy loam than in light soils, although the latter were well manured. I would advise readers not to be hasty in condemning a clump that does not flower well, but to give it another season or two. Nor does it need a lot of manure and winter protection, being quite hardy. A little soot sprinkled in the crown during late autumn, and again early in the year, will keep slugs away, and prevent the destruction of several points of new growth.—P. U.

DOUBLE WHITE DAFFODIL (NARCISSUS CERNUUS PLENUS).

This beautiful Daffodil, with which I understand many people do not succeed, has thrived with me in Devonshire during the last seven years. In 1890 I had about twenty bulbs given me, which I found on establishing them in June last had increased to about 240. From the accompanying photograph, which I took this spring, you will find they flowered rather freely; I think there were about 160 blooms. The centre of the bed is the ordinary Campernelle Jonquil. For four years the Narcissus was planted round some young Apple-trees in very rough ground; since then, though lifted every June and replanted in August, they have occupied the bed in which they appear in the photograph, in gravelly soil, perfectly exposed, and very well drained. I am careful to give no manure. The flowers, when first open, seem shaded with pale citron, but gradually become nearly pure white. They are rather dwarf in habit.

H. W. B. Scholfield.

Hele, Cullompton, N. Devon.

The Double White Trumpet Daffodil (Narcissus cernuus plenus). From a photograph by Mr. W. Scholfield, Strathalyn, Hele, Cullompton, North Devon.

Pæonies.—Anyone contemplating a rather extensive planting of Pæonies must remember and study their requirements a little, or the result will hardly be satisfactory. There are some hardy plants that will do fairly well in almost any situation, but this cannot be said of Pæonies. Here, for instance, if just planted in the natural soil and left without further attention, the flowering season in summers when the heat is above and the rainfall below the average would be of the briefest character. It is absolutely necessary to work in a liberal dose of a stiffer compost than is naturally available, to add cow-manure in the ratio of one to three or four of soil, and to mulch heavily. Bearing in mind, even with the best culture, the comparatively short season, it is hardly advisable to group them in quantity alone, although a selection of both singles and doubles would give a display through the greater part of May and June. The better plan, however, is to plant at a distance that will allow for working in other things, choosing in preference something that will take up the flowering after the Pæonies are over, and continue more or less till the end of season.

CHRYSANTHEMUMS.

HAIRY CHRYSANTHEMUMS.

Although somewhat early in the season, and having only paid a few visits to places where Chrysanthemums are grown, I have not failed to notice a number of interesting novelties in the hairy section. At Messrs. Veitchs' nursery at Chelsea there were some capital blooms of the new Leocadie Gentils, Mrs. Dr. Ward, a silky golden-bronze Japanese-incurved, Louis Bœhmer, and several others. In the Swanley collection Messrs. Cannell also had some interesting examples, and at Battersea-park Mrs. Alpheus Hardy, the forerunner of the entire section, was in very good form. The probabilities are that hairy Chrysanthemums will never rank high as show flowers; but they offer certain attractions in large groups, such as we see in the parks, at the trade displays, and in the conservatories of the well-to-do amateurs. This year several new forms have been introduced, and just a brief mention of them may be of interest to those to whom the subject has any charm.

Hairy Wonder is one of the most valuable, although not new. Its size and deep golden-bronze colour will always recommend it.

Mrs. C. B. Freeman, like many others, a sport from Louis Bœhmer, is of a dull purple colour, shaded golden-yellow, and of good size.

White Swan is a large Japanese, with very long florets, well covered with hairs, and curly at the tips. Colour pure white, faintly tinted in the centre.

Mme. J. Chaure. — A very deeply-built flower of the Japanese type; florets rather narrow, and sharply pointed, long, and drooping. Colour deep reddish-carmine, with reverse of gold.

Piquemal de Rozeville.—Florets sharply pointed. Colour dull crimson, with reverse of golden-bronze, tipped gold; an effective variety.

Belle des Gordes.—A Japanese-incurved, with rather narrow grooved florets, very close and compact in build. Colour very pretty pale pink, tinted yellow.

Fleur Lyonnaise.—Japanese-incurved, with flattish florets. Colour dull rosy-carmine; reverse golden.

Mrs. Leslie D. Ward.—Japanese, with long, drooping florets, and rather broad. Colour a delicate shade of bright gold, cinnamon, or buff; reverse bright golden-yellow.

Proviseur Poirier.—Japanese-incurved, dull carmine-crimson, with golden-bronze reverse; tips golden. One of Calvat's new seedlings.

Mme. Sekareck —Japanese-incurved, with very narrow grooved florets, very silky in appearance, pale blush, with yellow shade in the centre.

Mlle. Henriette Berloz.—A very large Japanese-incurved, but thin. Florets narrow and curly at the tips.

Abbe Pierre Arthur. — Japanese, with medium-sized florets, loosely incurving. Colour a glistening bronze.

Beaute Lyonnaise.—Like most of the section, a decided Japanese-incurved, but having narrow florets and ball-like in build. Colour dull crimson; centre golden.

Duvet Blanc.—Japanese, and, as its name implies, white.

Gloire Lyonnaise.—A Japanese, with very long florets, good size. Colour rosy-pink.

Amaranthe.—Japanese, with narrow florets. Colour indicated by the name, very rich and deep in tone; reverse silvery.

Hairy White.—Japanese, with tips of pointed florets incurving, rather close and compact, and a large flower. Colour white, tinted yellow.

Mme. X. Rey Jouvin.—A very pretty Japanese-incurved, with broad grooved florets. Blooms of good size and very globular. Pretty shade of deep rosy-pink.

Acajon.—Japanese-incurved. Colour, inside, deep crimson-chestnut; reverse of golden-bronze. This and the six preceding will probably not be put into commerce till 1898.

Raphael Collin.—Japanese-incurved, florets of medium width, and grooved. Colour a beautiful shade of golden-bronze; reverse silky-yellow.

Rachais.—Japanese-incurved, a very attractive variety. Colour rich reddish-golden-bronze; reverse very bright gold.

Maurice Boissard.—Japanese-incurved, with rather broad florets deeply grooved, and blooms very solid. Pure golden-yellow.

Leocadie Gentils, a bright, pale lemon-yellow sport from Enfant des Deux Mondes. Large and good.

Frere Jovinis.—Japanese-incurved, florets very narrow and grooved, and having a peculiar lustre. Colour golden-chestnut-bronze.

Dragon. — Crimson and gold; might be described as a hairy form of E. Molyneux, only the florets are much narrower.

Beauty of Truro.—Purple-bronze, tinted yellow.

C. Harman Payne.

Treatment of early Chrysanthemums.—My summer-flowering Chrysanthemums, such as Mme. Desgrange and a self yellow, 3-year-old plants, have been in great beauty for the last six weeks. Younger plants of M. M. Masse, Roi du Precoces, Vice. P. Hardy, hardly out yet. I must move all this autumn. Had I better cut the stems right down and divide the large ones, or replant as they are? I want them to flower as early as possible next year.—SABRINA.

*** Cut the old plants down and place them in a cold frame or house for the winter. We should recommend you to raise a stock of young plants, as better results are obtained than continually growing on the old plants. Remove the small growths at the base of the plants, and place them round the sides of 3-inch pots or singly in the centre of small thumb pots, and stand them in a cold frame. Water sparingly, aud protect from the sun for a time. When rooted pot on into 3-inch pots. In May they will be of a nice size for planting out.

Chrysanthemum sport. — A white Chrysanthemum plant in my garden has this year gone in for colours—a kind of silvery-pink, if there is such a colour! I send by same post a little box containing a white and the new "sport," if that is the correct term to use. I shall be much obliged if you will inform me in the columns of GARDENING (1) if it is possible to perpetuate this "sport" by cuttings or otherwise? (2) Is it worth doing? It seems rather a pretty colour, but plenty of this colour may be already abundant.—GRIFFITH JONES.

*** Varieties of this kind are certainly abundant, but there is no harm in growing on the plant again for a year, at any rate, from cuttings.

Chrysanthemums—the proper way to take cuttings *(S. Fletcher).*—It was the custom years ago to detach from the base of old Chrysanthemum plants rooted suckers and shoots with a heel on, as you describe. This is very rarely practised now with those who grow their plants for producing blooms of high quality. Rooted suckers and small pieces, as you describe, with a heel on would be very likely to upset your calculations when attempting to accurately time the buds, as they have been known to completely upset one's system of timing altogether. It is far better to take cuttings of nice young growths, which invariably spring up from the base of the old plants soon after they have been cut down. Plants which have been injudiciously fed during the autumn often develop weak and sickly cuttings, so that to commence well it is very necessary that the old plants should be quite healthy. Some growers plant their stock for producing cuttings in the open, and this is lifted and potted up. As a rule, grand cuttings can be obtained in this way, and from plants rested in this way too the best results are generally got. Cuttings should be 2½ inches to 3 inches in length, growth of medium size, and of a sturdy kind; cuttings of a sappy or those of a long-jointed kind often damp off, while those of medium stoutness and short-jointed, if afforded proper conditions to root under, make the best plants. The cuttings should be cut straight across with a sharp knife, just below a joint made by the junction of the leaves with the stem. December is a good time to commence taking cuttings, as this gives the plants a long season of growth.

Twelve Japanese Chrysanthemums for cottagers' exhibition *(F. O. S.).*—We append the names of twelve first-class sorts of easy culture, as without proper accommodation and a knowledge of the more difficult kinds you would very probably be out-classed with well-developed blooms of easier grown varieties. Those suited to your requirements are Viviand Morel, mauve-pink; Charles Davis, bronzy-yellow; W. Seward, rich deep crimson; Emily Silsbury, pure white, slightly early; Louise, white, tinted soft lilac; Mons. Chas. Molin, rich bronzy-yellow; Col. W. B. Smith, old gold, shaded terra-cotta; Phœbus, rich yellow: Mrs. C. Harman Payne, rosy-blush; Mrs. W. S. Trafford, bronzy-rose; and William Tricker, delicate rose. There are many others that we might add, but the foregoing are inexpensive sorts, and within the reach of the poorest. Regarding the time for inserting the cuttings, any period between the early part of December till end of January will answer very well. Watch the directions given in GARDENING.

Chrysanthemums — plunging the plants in ashes during summer.—*(A. Fletcher).*—If you find it difficult to give your plants all the attention they need as regards watering during the summer months, plunging the pots in ashes is to some extent an advantage, although we cannot recommend the practice. It has this disadvantage. Although you may stand the pots on slates or something to answer the same purpose, the cooler conditions induce the roots to find their way out of the bottom of the pots, and although it may be all right while the plants are remaining outdoors, when they are lifted to be housed the damage to the roots is very severe and a check experienced at the most critical period of their growth. The better plan would be to stand the plants on boards, tiles, slates, etc., and then to shelter the pots from the sun's rays by placing boards, or anything to answer the same purpose, to rest on the sides of the pots. This would keep the pots much cooler, and would also lessen the need of so much attention. We know of a very successful grower, who usually sows a row of annuals on either side of his pots, in this way affording the protection that may be desirable.

Chrysanthemum Edwin Molyneux *(A. E. G.).*—This variety often produces blooms with an open eye, and the usual cause of such a defect is that the plant has not been grown strongly enough, or else the buds have been retained too late for the buds to develop the requisite number or quantity of petals. We know of one very successful method of growing this fine sort, which is as follows: The cuttings are inserted during November, and when rooted are kept growing on until the time for repotting in its various stages is finished, and the plants are finally potted into 9-inch pots. The wood is well ripened by full exposure to sun and air, and then by about the first few days in July the points are pinched out, and the strongest succeeding shoots selected and grown on. All being well, these should give crown-buds between August 12th and 18th, and from buds retained between these dates we have every reason to believe you would obtain blooms with full centres, and fit for exhibition.

Chrysanthemums — crown-buds *(S. A. B.).*—When a plant is "pinched" or cut back, no matter how early in the year this may be done, the buds which first appear on the resulting shoots are known as first "crown"-buds. When the plants are pinched or cut back it is the equivalent of the formation of the "break"-bud, so-called because the plant breaks into lateral growth from that stage in the plant's life. In the natural course of the life of a plant there is first the break-bud, then the first crown-buds, and, according to the peculiarities of the different varieties, the next may be terminal buds, or there may be one or two or more sets of crown-buds before the terminal-buds are developed. You will, therefore, see that so much depends upon the variety to be considered.

Chrysanthemum Ivy Stark.—Of the early sorts this is, perhaps, one of the best of recent introduction, and is deserving of more recognition than it has so far received. Some growers describe the flower as resembling the popular midseason variety Source d'Or, and this is to some extent correct. The colour may be described as pale orange-yellow, late flowers being richer in colouring than those produced earlier in the season. When grown without disbudding large sprays of flowers may be cut on each stem, and if disbudded to one flower to each shoot, a goodly number of handsome flowers may be had. The growth is strong, and the habit fairly dwarf and branching. The flower is of Japanese form.—C. B.

Etoile de Lyon as a bush plant.—This well-known Japanese variety is an excellent kind to grow in bush form. The plants may be had in flower at Christmas, and carry from eight to twelve good flowers, almost of exhibition size. The cuttings should be taken in February and struck in the usual way, selecting a cold-frame if possible, but keep secluded from severe frosts. When the plants are 6 inches high, pinch the top to encourage the shoots to break low down, and continue pinching till the end of May, when the growths are about the same length. A 10-inch pot is most suitable to flower them in unless required for exhibition. When the plants are rooted soot-water should be given them occasionally, but towards the end of July, and if the plants have made free growth, soot-water may be allowed three and four times a week. The crown-buds should be pinched out and the terminals selected, which will appear the second week in October. Thin them out to from eight to twelve buds, and feed liberally with artificial or cow-manure. This is a most useful variety for late flowering, and of easy culture.—W. J.

HOUSE AND WINDOW GARDENING.

WINTER CHERRIES FOR DECORATION.

ALTHOUGH many new flowers arrive each year it does not follow that they are always better than the old, especially for decoration. This applies particularly to the new Winter Cherry (Physalis Franchetti), which, although brilliant in colouring, yet is rather too heavy and dwarfed to give a really successful effect in jars. The smaller, Physalis Alkekengi, is better for the purpose, as it has a much lighter appearance, and is more slender in growth. A few sprays of the latter are really more effective than the same quantity of "Physalis Franchetti," in spite of the last-named being so much larger in size. It has, too, the great advantage of being more easily obtained, for there are few florists at which one cannot obtain the shoots of scarlet globes for a very reasonable price. A. E C.

Vase of flowers for wedding-cake.—It is now the custom, in the place of the old-fashioned artificial decoration of the wedding-cake, to place a vase of white flowers with appropriate foliage for embellishing it on the top of the cake, with a wreath of similar flowers fixed at the base. I saw one recently which had several novel elements in it, and this was also considered by those competent to judge a very beautiful piece of floral decoration. The vase was a silver one, and this was covered at its opening with a circular piece of wire network to assist in the arrangement of the flowers, and to keep them in position. The flowers were carried quite 2½ feet to 3 feet above the top of the vase, and were gradually worked down until the last few were made to overhang the sides. Each flower had to give an account of itself, so that there was no crowding, but instead a very light and elegant arrangement with pieces of foliage standing out here and there to give a finish and cover up any vacant space between the flowers. Pancratiums, Odontoglossums, Cattleyas, Francoa ramosa, Arum Lilies, Lilium longiflorum, Bouvardia (double form), White Chrysanthemums, Stephanotis, and other choice white flowers were pleasingly associated, and for further enriching the decoration long sprays of pale-green Asparagus, Eulalia japonica, Adiantums in variety, all pale-green, Panicum variegatum, and Caladium argyrites, each assisted to make one of the handsomest decorations it is possible to conceive.—D.

Poppy Anemones as cut flowers.—Although this handsome Windflower seems quite a spring flower, yet it flowers freely at this time in the southern counties, when it is very valuable for decoration, as its flowers, although of somewhat crude colours, show up well if they are massed together in a large bowl. They are very rich in colouring and effect. The practice of putting each colour by itself, although most important in flowers as a rule, seems to spoil the appearance of these, for in some way it intensifies the rather violent shades which the mixing of all tints together helps to neutralise. They are rather difficult flowers to arrange satisfactorily, their curved stems and heavy blossoms making it very difficult to keep them in a bowl at all. The best way to get over this is to choose a rather deep bowl and arrange the flowers so that each one helps to support the other. A warm room or a little sunlight helps the blossoms to expand and fill up any blank that may be created.—A. E C.

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ORCHIDS.

ORCHID NOTES.

CYPRIPEDIUMS.

CYPRIPEDIUM INSIGNE is an Orchid that is grown in almost every garden where indoor plants are cultivated. It is a vigorous and free-flowering plant that may be had in bloom for several months with little trouble. The flower-spikes are well adapted for cutting, and the plants when in bloom are useful for decorations generally. They will take no harm if placed in the drawing-room and allowed to remain there for weeks together, providing the roots are kept just moist. At the present time there are a great number of Cypripediums, both species and hybrids, in cultivation, but there are few if any of them that can equal the best form of C. insigne in the symmetry of its flowers. C. insigne and its numerous varieties may, during the summer, be grown in the Odontoglossum-house, but if about the middle of September the plants are placed in a little more warmth the growths become firmer, the flowers appear a little earlier, and are of larger size than if kept in the cool-house altogether. The best time to repot this species is a week or two after flowering. It is in no way particular as to compost, for it will grow and bloom just as well potted like an ordinary stove or greenhouse plant as if the best peat and Moss were used for it to root into. At all times the plant should be copiously watered and kept well shaded from strong sunshine. Other Cypripediums which are now coming into flower, and which brighten up the intermediate-house at this season, are C. Leeanum and its varieties superbum and giganteum, also C. Charlesworthi, C. Spicerianum, C. Arthurianum, and the pretty C. purpuratum. All of these are of easy cultivation, growing and flowering freely if deluged with water the whole year round. They should if necessary be repotted about the same time as advised for C. insigne. The long-tailed C. caudatum will grow best in the intermediate-house. It is just now growing vigorously, and should be well supplied with water. The same remarks apply also to such varieties as C. villosum, C. Boxalli, and C venustum. To grow these Cypripediums satisfactorily, and to keep them free from insect pests, as red-spider and thrips, their surroundings should be kept constantly moist. W., *B.*

Barkeria Lindleyana.—This is a delicately-coloured species, producing large erect spikes from the apex of the thin elongated pseudo-bulbs. Each flower is 2 inches across, the sepals lance-shaped, the broader undulate petals pale purple, the lip white with a blotch of purple in front. It does best in baskets of limited size in a light position at the cool end of the Cattleya-house. A great deal of moisture is necessary while growth is active both in the atmosphere and at the roots, and the syringe may be freely plied about the stems. After growth is finished and the leaves fall a cooler house and a greatly reduced winter supply must be allowed. It is a native of Costa Rica and was introduced in 1842.

Oncidium varicosum.—At this time of year few Orchids are more welcome than this fine Oncidium, with its large and elegant panicles of showy blossoms. They are useful in a great many ways for cutting, or the plants look well in groups, and I recently saw several fine pieces in a group at a local Chrysanthemum show. O. varicosum has rough-looking pseudo-bulbs and dark green foliage. From the base of the former the bloom-spikes rise, and these are often 30 inches or 36 inches in length, and closely studded with flowers. In the variety Rogersi the flowers are 2 inches across. This name is, unfortunately, often given to much poorer varieties. The showy lip is the principal part of the blossom, the small sepals and petals being hardly noticeable, though pretty in themselves. It is an easily-grown plant, thriving well in the Cattleya-house, and it may be well grown in shallow teak-baskets with good drainage and a compost of peat-fibre and Sphagnum. The growth commences in early spring, and care is necessary that this is made without a check of any sort, either from want of water or insufficient heat. The atmosphere must also be kept moist and the growths well matured by exposure to light and air. During winter less water will be needed, unless when the spikes are forming, as this constitutes a considerable drain upon the roots, and these must accordingly be well looked after.—R.

Bletia Shepherdi.—This is one of the freest-flowering and best of the Bletias, and by no means unattractive when well grown. The long branching scapes push up at various seasons and contain a large number of flowers of a pretty crimson-purple tint on the sepals and petals, the lip being deeper in front with a yellow centre. When the flowers are past the plants must be induced to rest by keeping them cool, and when signs of growth are apparent repotted into fairly large pots in a compost consisting of loam-fibre, leaf-soil, or peat, and a little chopped Sphagnum. The tubers should be kept about an inch under the surface, and the plants do best in quite a cool house where moisture is abundant and a free circulation of air kept up about them.

FOXGLOVES.

OUR illustration shows a Foxglove group against a wall, the handsome spikes standing out in bold relief. Although considerable care may be taken in raising plants from seed and putting them out into good soil, yet we often find the best

Foxgloves. From a photograph by Mr. J. H. Threlfall, Royal Exchange, Manchester.

specimens are produced by self-sown plants, which stealing up amidst other things are at some time found to be strong and left to bloom in due course. Such plants as these carrying from five to seven large spikes make very charming objects, and not less striking that they stand out individually. We have often found that plants dibbled out early to secure large spikes the following year suffer appreciably from damp, especially after snowfalls, in the winter, whilst late-sown plants have proved to be too small to bloom and have developed into huge tufts of leafage. Such troubles are not generally found where the soil is naturally light and porous. Foxgloves are pretty in woods or amidst natural surroundings, and there they find protection from excessive moisture. But a number of fine plants when in bloom are by no means to be despised in any garden. The prettiest hues in the Foxglove are pure white, pink, and deep red, all being richly spotted on the lower side of the flower. Some prefer pure self flowers, but, on the whole, the spotted flowers are handsome, and the blooms are finer as well as more varied.

THE KITCHEN GARDEN.

TIME TABLE WHEN TO SOW, VARIETY, AND WHEN READY.

What to sow.	*Time of sowing.*	*Season.*
Asparagus	April	April to July
Do. Plant	March and April	Do. the next year
Artichoke Globe	March and April	June to October
Do. Jerusalem	Plant in March	Winter
Beans, Dwarf	April to July	June to October
Beans, Runner	April and May	Do., do.
Beans, Broad	February to May	June to August
Broccoli	February to May	Sep. to June
Brussels Sprouts	March to May	Sep. to March
Beet	April to May (12 months)	June to June
Borecole or Kale	April and May	Oct. till April
Cabbage	February to July	All year
Carrot	February to July	All year
Cardoon	April	Oct. to Dec.
Cauliflower	February	June, July, Aug
Do.	August	May and June
Chicory	June	Oct. to March
Celery	February to May	Sep. to April
Cucumber	May	Summer
Endive	July	Sep. to Feb.
Leeks	March	Winter
Lettuce	February and monthly	May to August
Do.	August	Spring
Onions	February and March	August to April
Do.	August	June to August
Parsley	March to August	June to June
Parsnip	February to May	Oct. to April
Radish	February to August	April to Dec.
Rhubarb	April	April to June
Salsify	April and May	Winter
Scorzonera	Do., do.	Winter
Peas, earliest	February	May
Do.	Monthly to July	June to Oct.
Savoy	April and May	Oct. to Feb.
Seakale	April	March, not forced
Do., plants	April	Nov. to March
Spinach	March to June	May to August
Do.	July to August	Oct. to April
Tomatoes	March to June	Summer
Turnips	Feb. to Aug. monthly	May to March
Veg. Marrow	March to May	Summer
Potatoes	March to May	All year
Herbs	Spring	All year

In compiling this table it must be understood that the seasons for sowing are for earliest mid-season and success in crops, not merely one sowing. For instance, Turnips should be sown at least three times; it is much better to sow in small quantities than make one large sowing and not be able to use the vegetables. To get the finest Peas seed should be sown monthly from February to June, and the dates given allow for succession crops in all varieties.

Celeriac.—I find this perfectly hardy; at the same time, I like to earth up the majority of the roots in specially good condition during the spring. Planting at the distances I advised, there will not be room between the plants to allow of drawing the soil up over the crowns, but when drawing the roots for use I confine myself to alternate rows, and at this time of the year complete lifting such rows, laying in the roots for present use. This gives a chance to get plenty of soil for earthing the remainder, which is done with a heavy hoe, like that used for earthing Potatoes, and in this way the stock roots are buried with some 2 inches or 3 inches of soil.—T.

Treatment of Cardoons.—These are more tender than most of our winter vegetables, but they can, fortunately, be stored and kept in good condition for a long time, and I advise that as many as can be found room for in dry and cool, but frost-proof, quarters to be lifted when they can be caught dry and removed to such a place. An open shed even can be used as a store-house, for this will at least keep them dry, and they will not be subjected to alternate freezing and thawing, for frost may be kept from them by the use of any protective materials. Dry Bracken, which is light and convenient, suits as well as anything. I lift and stack the plants closely together without removing the hay bandages, and in an upright position, as I find that the plants keep better so than when laid down and packed one above the other. A few of the backward plants may be left in the open ground, as these will go on growing while the weather remains mild, and the experience of the past few seasons has been that no frost has come to hurt them up to Christmas, though no dependence can, of course, be placed on this. The growth is this year more tender than usual, but if frost does come, sharp enough to injure them, they could be used for present supplies and the stored ones kept.—T.

INDOOR PLANTS.

WINTER-FLOWERING "GERANIUMS."

As soon as summer flowers are cut off by the early frosts there is a demand on the glass structures for bright colours, as the great majority of late flowers, such as Chrysanthemums, Michaelmas Daisies, etc., are of either white or sombre colours. In floral decorations in the house some brilliant bits of colour are needed, especially when table decorations are the rule. No matter how much the owners may have called out against the brilliant scarlet "Geraniums" as common or vulgar, they are still glad to utilise them when other more fleeting flowers fail, and no flower that I have ever tried can be so surely relied on for giving bright scarlet flowers in abundance as the best varieties of Zonal "Geraniums"—that is, if they are grown specially for winter-flowering. Of course, one may get some good trusses of bloom from plants that have been used for decorations all the summer, as the "Geranium" is naturally of such a free-blooming habit that as long as it makes growth it continues to produce flowers. If really fine trusses of bloom in abundance are needed, the only way is to make a speciality of them, and treat them well. My plan, that produces plants that never fail to be full of flower-buds and blooms from October right through the winter, is to put in cuttings of all the varieties that are best suited for the work in March. As soon as rooted they are potted off in 3-inch pots and grown on until May in gentle heat. As soon as the pits and frames are cleared of bedding plants they are potted into 6 inch pots and set in the full sun, the lights only being used at night if cold or during heavy rains. The tops are pinched out to keep them dwarf and bushy, and all flower-spikes as they appear are pinched off. A rather stiff compost of loam and leaf-mould suits them well, and a little weak liquid-manure adds greatly to the size of the trusses of bloom. After trying varieties new and old, I find nothing to surpass Raspail Improved for scarlet and Queen of Whites for a pure white, but many of the pinks and salmon colours are very beautiful, and the Ivy-leaved section especially gives fine blooms. JAMES GROOM, *Gosport.*

GRASSES IN POTS.

SOME of the ornamental Grasses make very handsome subjects for conservatory decoration during summer, when allowed to form clumps or masses in 5-inch or 6 inch pots, the light and elegant habit of many of them serving to tone down any superabundance of colour which frequently prevails at that season. Not only are they well suited for this purpose, but in most arrangements of cut flowers they may be advantageously employed. For this latter purpose, however, it is only necessary with the majority of the kinds to sow them in the open ground early in spring, when they give no further trouble, and may be gathered when required. However, as those grown in pots are protected from the weather, they are often better adapted for storing for winter use than outside ones; indeed, after they have served their turn in the conservatory, all that is necessary is to cut the stems off just above the soil and hang the Grasses up, head downwards, to dry, where they will keep for an almost indefinite period. At first, in growing these different Grasses, I tried the plan of sowing them, and then pricking off the young seedlings thickly in pots, but the best results I have obtained to arise from sowing them directly in the pots in which they are to grow. The following are excellent kinds for the work: Agrostis nebulosa and A. pulchella, Briza major and B. minima (the large and small Dodder Grasses), Bromus brizæformis, Hordeum jubatum, the long Barley-like arms of which are of a purplish tint when young, and are then very pretty, but when matured they soon fall to pieces. Lagurus ovatus, with its whitish cottony-like heads, also does well in pots. These Grasses prefer a good holding soil, otherwise the foliage soon turns yellow and growth is arrested. A suitable compost is about three-parts loam to one of decayed manure, with—if the loam be very heavy—a slight admixture of sand. The pots must be filled with this to about half an inch from the top in the case of minute seeds, a little more space being left for larger ones. Sow the seeds thinly but evenly over the surface, and cover with light soil, and place them in a cold-frame and water with a fine-rosed pot to prevent washing the seeds to one side. As soon as the young plants are up give plenty of air, otherwise they will grow weak and thin, especially in the case of the Brizas. A slight support will be necessary, and if four sticks be inserted at equal distances apart, and a piece of stout thread secured from one to the other all round as soon as the plants require it, the foliage produced afterwards will almost hide both sticks and ties, and at the same time prevent the plants from becoming untidy. From the middle of February to the corresponding period in March, or even a little later, is the best time for sowing the seeds, as, if sown in the autumn, they do not come in earlier than the February ones. When the young plants are up, if any are too thick, thin them out at once, and on no account allow them to become dry after the pots are full of roots, otherwise most of the foliage will be ruined.

B. H.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2192—**Hollyhocks from seed** *(Practical)*—It is too late to sow seed now, unless you sow it under glass. You had better wait until the spring.

2193—**Carnation seedlings** *(North Lincolnshire).*—By no means of much merit. We have seen many much finer kinds; but you might keep No. 1 for future propagation.

2194—**Making leaf-soil** *(North Lincolnshire).*—Sycamore-leaves make very good leaf-mould. So also do Beech, Oak, Ash, and Hornbeam-leaves. Wood-ashes are of immense value for garden crops of all sorts.

2195—**Pruning Wistaria** *(L. F. B.).*—It is a mistake to use the knife too freely with this beautiful climber. Simply cut out the weak, unripened wood and shorten the more vigorous growths. This should be done after flowering.

2196—**The old double yellow Auricula** *(W. Thompson).*—This is not known to me. Yellow Prince is semi-double, and has slightly mealed foliage. Does anyone know where the old full double scentless variety is to be found? Foliage quite white.—J. DOUGLAS.

2197—**Dwarfing trees in Japan** *(J. Walker).*—The dwarfing of trees by the Japanese is an art practised for many years, and Pines and others are grown in this curious way and kept for 100 to 150 years or more. Our correspondent may find something in Conder's works or Siebold's.

2198—**Large-flowered Syringa** *(Rob Roy).*—The present is a suitable time to transplant your Syringa. It is perfectly hardy, and will flower freely in Lancashire. You must not cut it down now; but, if any cutting back is necessary, the proper time to do it is just after it has done flowering.

2199—**Broccoli** *(Ibid).*—You have no doubt got an autumn heading in Broccoli, or rather Cauliflower, in place of a late winter variety. Laying in the plants will not check heading now. You had better leave the plants to do their best; but if frosts come tie the leaves in a cone over the heads to give them protection.

2200—**Heliotropes in poor health** *(Dr. C. Callaway).*—Keep the plants in a temperate house, and reduce the supply of water. In the spring cut the plants back, and place them in a brisk heat. The old soil should be shaken away and yellow loam mixed with sand substituted. Use the syringe freely to encourage new growth.

2201—**Currant suckers** *(J. J.).*—If you cannot dig up the old roots or stocks of your Currant-bushes, as you say, then keep on hard cutting down the suckers with a sharp Dutch or push hoe. By following up that practice, so that only a few inches of growth is permitted each time, the roots must eventually die. That is a better method than attempting to kill with paraffin.

2202—**Celery** *(A Beginner).*—Two of the finest kinds are those commonly known in the trade as the Giant White and Giant Red. These are large and massive, and when well and rapidly grown are very solid. It is when plants are raised thickly, then allowed to get starved or stunted in the bed or pan before being pricked out thinly, that leads to the stems becoming soft and hollow.

2203—**Lilies failing** *(Simonside).*—Without knowing the conditions under which your Lilies have been grown, we cannot say definitely the cause of failure. It may be that the soil is sour, caused by imperfect drainage; or the plants may have been exposed to cold wind. Lilies should be regularly transplanted, always in rich, well-drained soil. During the growing period liberal supplies of water should be given.

2204—**Carnation seed** *(Dixie).*—The seed is generally ripe about the second week in August. It may be sown as soon as gathered. It is a very good plan to sow the seed in shallow pans or boxes of light, sandy soil, barely covering the seed with very fine soil, and placing it in a temperature of about 65 degs. When the seedlings are large enough to handle prick them off into boxes of rich soil, and later on they should be planted out in deeply-dug, well-manured soil.

2205—**Treatment of Hollyhocks** *(Eylad).*—You may transplant your Hollyhocks early in spring. The ground should be dug deeply and plenty of good rotten manure worked into it. Fresh, sweet soil is the best preventive against the dreadful Hollyhock disease. During the growing period a top-dressing of manure and copious supplies of water will be of great benefit in increasing the vigour of the plants and adding size and substance to the flowers.

2206—**Books on botany** *(L. Meadows).*—We do not quite understand your query. Do you mean merely for the study of botany? If so, get Dr. Cooke's shilling "Manual of Botany," to be got from any large bookseller. But we think you mean a British book of wild flowers, like Hooker's or Bentham's "British Flora," either of which denotes the time of flowering. This would not, however, be given in an ordinary botanical book, which would deal with genera, flower structure, etc.

2207—**Transplanting Roses** *(W. H. H.).*—If, as you say, your autumn-budded standard Roses have the buds perfectly united, and they must of necessity be transplanted, then transplant at once if you can, but if wet they may be safely removed in February. It is the rule to allow newly-budded stocks to remain the first year, as then the root action is so strong that vigorous growths result from the root action; then transplanting is done in the following autumn, as the budded head has become so well established.

2208—**Pipes in vinery** *(R. T.).*—Seeing that one half of your piping which is in the greenhouse works well and the other half in the vinery does not, the natural conclusion is that the valve which connects the pipes has become choked, and therefore the proper flow is stopped; that the return pipe should in such case get worn first is therefore natural. It is not possible to come to any other conclusion. We fear you will have to empty your pipes and have the valve cleansed or repaired ere your heating will be satisfactory.

2209—**Broccoli in spring** *(T. H.)*—Purple Sprouting Broccoli invariably turns in—that is, gives its purple-coloured sprouts—in March and April, though mostly in the latter month. Still, much depends on the nature of the weather. Probably you will find you can clear the stumps off by the end of April, and that is amply early so far north for summer crops. Adam's Early White should have headed in by the same time. The Green-leaved Sprouting Broccolis may be true, or they may be some Green Kale got in by mistake.

2210—**Gooseberries** *(Berry).*—For ordinary market purposes green berries being much required, and good-sized ripe fruits later, the following are first rate varieties: Lancashire Lad, Crown Bob, Whinham's Industry, Rifleman, Dan's Mistake, and Warrington are red; White Keith, white; Leader and Jeweller, yellow; Keepsake, Shiner, and Telegraph, green. These are all large-berried. If a few small high-flavoured ones are desired, Ironmonger and Champagne (red), yellow Champagne, and Golden Drop, and green Hedgehog, and Green Gage are excellent.

2211—**Book on fruit** *(Beginner).*—We have not heard of any County Council issuing any book on fruit culture. There are numerous books in commerce, one of the most suitable perhaps being "Fruit Growing for Profit," by G. Bunyard, which may be had post free, 2s 9d., from Messrs. G. Bunyard & Co., Old Nurseries, Maidstone, Kent; or you may like "Profitable Fruit Growing," also obtainable at Messrs. Bunyards'. A good book on Tomato culture is W. Iggulden's. Write to Mr. W. Iggulden, Frome, Somerset, for particulars. It is a cheap publication.

2212—**Raspberry canes** *(T. S.).*—We advise cutting back newly-planted Raspberry canes in the spring rather than immediately after planting, in the belief that the canes contain some store of sap on which the roots might draw in the formation of new ones. Still, your newly-planted canes should not materially suffer because cut down at once. Very probably your canes planted last year suffered most from the great heat and drought of the spring and summer of this year. As the ground is now really dry, a good soaking of water, if to be had, would do old and newly-planted canes much good.

2213—**Dressing Asparagus-beds** *(O. F.).*—Dead leaves would, if added to manure in making an Asparagus-bed, be rather harmful than otherwise, as the leaves, in decaying, would leave the soil very hollow and porous. The manure used should be half decayed and have been turned two or three times before it is used so as to have it all alike. Trench the soil fully 2 feet in depth, burying a good dressing of manure under the top spit. Planting is best done in the spring and before then. A further dressing of short manure should first be well dug into the top soil. April is the best time usually for transplanting Asparagus.

2214—**Earthworms** *(H. S. B.).*—Although earthworms render soil good service, they give a good deal of trouble in some cases. They are usually on the surface at night, and if you make up a solution of soot or lime at the rate of 1 bushel to 15 gallons of water, the soot being put into a coarse bag, the lime thoroughly dissolved and allowed to settle, then in both cases, after 24 hours' soaking,

the liquid may be poured through a rose water-pot over the beds, and as it will drive the worms into their holes and follow them there, it will either kill them or drive them away. A soaking of this nature should be given once a week so long as the trouble lasts. See article on "Earthworms" in the present issue.

2215—**Pruning Gooseberries, etc.** *(T. H.).*—In transplanting Gooseberry and Currant-bushes now it will be best to leave the pruning over until February or March, as by that time the soil will have well settled and the roots become attached to it. Also during the winter birds may attack the buds, and for that reason, if for no other, it will be best to leave the pruning later. Gooseberry-bushes chiefly need thinning, cutting out fairly hard all inner shoots and shortening a little the outer ones. Red Currants when pruned may have the young shoots hard shortened; whilst those of Black Currants should be retained, the points being just shortened and older branches cut clean out, practically thinning the bushes.

2216—**Seaweed** *(C. H. C.).*—Seaweed is an excellent natural manure, but it contains a big proportion of water, as may be evidenced when allowed to lie some time in a heap, as it shrinks exceedingly. It is best so treated, as otherwise, in a fresh state, salt is unduly present, and too much of saline matter renders the ground cold. That Seaweed, after lying in a heap for several weeks or longer, may be mixed with stable-manure and form excellent dressing, there can be no doubt, and when mixed it checks fermentation. Generally Seaweed is a nitrogenous manure and deficient in phosphoric acid and potash. These elements good stable-manure should supply. In very hot dry weather Seaweed is not at all a bad mulch for garden crops, as it helps to cool the soil.

2217—**Flowers** *(New Beginner).*—Securing outdoor flowers for cutting depends very much on what means you may have of raising them. If you can plant at once a quantity of Narcissi bulbs in variety you will have quantities of cutting flowers from them in April. Also Wallflowers, both red and yellow, cut well. Hardy Pinks, white and red, good crimson double Carnations, raised from seed, especially the Marguerites, sown in March. Violets, too, do well. Then yellow and blue Centaureas or Cornflowers, single and double Pyrethrums (the former from seed), good Giant Daisies from plants quite hardy, annual Sunflowers (especially the small-flowered ones), annual Chrysanthemums, Asters, Scabious from seed, and Pompon Dahlias from plants, are but a few suitable things.

2218—**Sulphate of ammonia** *(G. I.).*—This compound is a very excellent nitrogenous manure, and is usually regarded as better than nitrate of soda. It is very quickly dissolved, and should be applied to crops after growth has begun, being well trodden in. We shou'd not use for any one dressing more than about 3 lb. per rod, but give two or three such dressings during the period crops were growing. As it is almost entirely nitrogenous, however, and crops need other manure, a dressing of superphosphate and Kainit or potash, mixed at the rate of 3 lb. per rod, should be applied when crops are sown, or may be dressed over the ground when it is dug for the reception of crops. It is a good plan where stable-manure cannot be given to dig or fork in the Grass from a lawn or any material to furnish fibre.

2219—**Funkias** *(Hursley).*—Most of the Funkias, including the variety you mention, subcordata grandiflora, are quite hardy. The variety blooms finely in the summer when properly treated. Probably you have yours in a pot? It would do so much better were it planted out in a border in good soil, and would then grow into a big clump, having handsome green leaves, and carry a cluster of white flowers. If you prefer to keep in a pot, let it be stood in a frame or cool greenhouse for the winter, as plants in pots, even if ever so hardy, withstand frost worse than if in the open ground. In the spring, just as new leafage breaks up, give the plant a shift into a larger pot, as these things need ample root-room, and when in full growth plenty of moisture. Preferably we should in April plant it out into the open ground.

2220—**Mildewed Vines** *(Tommy).*—Although traces of mildew on your Vine-leaves sent had largely been rubbed off, yet there seems to be no doubt but that they are so affected. As the leaves fall gather them up and burn them. Also heat your pipes, if you have such, and when hot give them a liberal coating of sulphur-paste dissolved in water, or else pure sulphur mixed with soft-soap or milk, keeping up a good heat for 12 hours and shutting the house up close. Possible exposure of the Vines to cold draughts much too freely has promoted the mildew attack. A solution of sulphate of potassium and soft-soap, well washed into the Vine-stems after the pruning, which may be done at once, sparing the buds, will do great good. Should mildew appear next year apply the sulphur dressing to the pipes two or three times as advised.

2221—**Blood-manure** *(Flox).*—Raw blood is not at all a desirable manure for Vines, or hardly anything else; but if you wish to utilise it we advise, if you can, to get a heap of road-trimmings or any similar fibrous or gritty material, make of it a sort of circular basin, throwing the blood as obtained into it, and at once covering with some of the soil. Keep on doing so until all the soil seems to be full of the liquid; then get to mix with the heap some garden-refuse, wood-ashes, and some old mortar or lime-refuse, thoroughly mix, and turn the whole two or three times. So prepared, you may add a dressing of 1 inch thickness to your Vine-border, very lightly forking it in. Add such a dressing just before the Vines start into new growth. That will attract roots to the surface. Blood so mixed with soil may also be used, when sweetened, for ordinary garden crops.

2222—**Cordon Gooseberries** *(A. E. C.).*—We gather from your note that what you describe as cuttings of Gooseberries and Currants are rooted plants and planted out. If that be so, and are planted about 15 inches apart in a row, tied up to stakes, that is all right. But to lead to further height, keep the stems well covered with spurs, whilst you must cut back to about three buds in early August all side shoots. You must encourage good strong growth in the leading shoot, yet cutting it back fully one half its length in the winter to induce free breaking of the side buds to make spurs. If you allowed the leader to remain its entire length, probably you would create many bare places in the stems. Lengthen slowly but surely. The great object is to well furnish the stems with fruiting spurs. When your cordons are fruiting, help them by placing about the roots a good mulching of long manure.

2223—**Crimson Rambler Rose** *(England).*—The strong growths of this Rose may be shortened back one-third their length if desired, the stoutest parts of the tops being used to make cuttings of about 8 inches in length. If some be so made, set them at once one-half their depth in the ground, putting some sand at the bottom of the furrow. A sheltered place is best for this purpose. As you have three shoots, and would like the wall well furnished, why not shorten back the two outer ones one-half to induce lower breaking, leaving the centre one a third taller to break higher up? Bending the stems somewhat downwards, then bringing the tops more erect, is a good method of inducing growth. You had better prune back these flowering-shoots quite hard after they have done blooming in the early summer, and that will encourage the formation of new, strong growths low down to succeed. That method of pruning suits this brilliant Rose.

2224—**Tomato plants in a lean-to house** *(T. S.).*—If your lean-to house is 9 feet wide inside you should have a border in front 6 feet wide to plant with Tomatoes. You can in this space plant in short rows of four plants each, and have the rows 2 feet apart. The rows would, of course, run crosswise; then you would need behind these a footpath, say, 2 feet wide, leaving a border 12 inches wide for a row against the back wall. These may be planted 15 inches apart, and would be better if planted in boxes 11 inches wide and 8 inches deep inside; or you could perhaps fix along beside the inner edge of the path a stout board, 8 inches deep and 12 inches from the wall, and thus make a slightly elevated border. Fill this with good loamy soil, adding just a little well-decayed or old hot-bed manure; a little wood-ash or lime-refuse will be helpful. Stop the front plants at from 4 feet to 5 feet in height, and you will then get plenty of light for your back row plants, which may cover the wall. If they do well nothing can be more profitable.

2225—**Various** *(Grateful).*—A Fig-tree growing against a wall looking north and west has poor chance to ripen fruit. A warm aspect, south and west, would suit it better. The ordinary pruning is done now, cutting out here and there branches that seem to be fruitless to give room to nail in close to the wall, from 6 inches to 9 inches apart, the best young shoots of this season's growth. Closeness to the wall is essential as helping to ripen the wood. Cut hard away everything not otherwise needed. Endive-plants of the curled variety should now be large heads. They may be blanched white by covering them with plates, tiles, slates, boards, or anything to throw off rain and frost and exclude light. If hard weather comes some leaves or litter may be laid over the plants. If of the broad-leaved form the plants may be tied up, as Lettuces are, to blanch. A paraffin-stove, if properly trimmed and the best oil only be burnt, should materially help to exclude frost from your small greenhouse. Let it be lit early in the afternoon when frost prevails.

2226—**Plants in vinery** *(Practical).*—You can grow in a vinery during the winter, where the Vines are to be rested and not growing only, plants that need just enough warmth to keep out frost. If you keep up a temperature of from 45 degs. to 60 degs. night and day, which warmth is needful to keep such things as late Chrysanthemums, also Chinese Primroses, Cyclamen, Carnations, Callas, Roman Hyacinths, Genistas, Camellias, Azaleas, and similar flowering plants in bloom, then you will start your Vines into growth very early also. You should, in any case, first have your Vines hard pruned, the stems well cleansed with a solution of soft-soap and Tobacco-water, the glass and paint well washed, then have inside late-blooming Chrysanthemums and such other plants as you may have, putting on only just fire enough to keep out frost and damp. If to you starting the Vines early is of no consequence, then you can have all the plants named, with Palms, Ferns, Dracænas—indeed, anything that will thrive well in the temperature stated.

2227—**Planting Vines** *(Airdrie).*—Vines having canes 10 feet long and growing in 10-inch pots might be very well gently forced in the pots and so fruited. They could be stood on an elevated stage and trained up under the glass roof. If that were done the rods should be shortened to 7 feet, the old soil in the pot partially removed, and some good loam and old, decayed manure added for top-dressing, and an occasional sprinkling of some artificial manure given whilst the berries are swelling. Younger Vines having less of cane and more of fibrous roots would be better for planting. If, however, you prefer to plant those you have, you must prepare for them a good border, well broken up, 2 feet deep and 4 feet wide, and plant at once, shaking the roots quite out of the old soil, and disposing them evenly in the broad holes, not too deep, made to receive them. In planting, carefully carry the canes through holes in the house made for the purpose. In a month or so you will have to cut the cane hard back to a strong bud just within the house, and encourage the formation of entirely new strong rods, which, cut back one-half or so, will carry fruit the next year if they do well.

2228—**Virginian Creepers and Clematis unsatisfactory** *(Jeanie).*—The cold should not kill your Virginian Creeper at the corner, but it might the Clematis. We do not recommend a Wistaria for such a position. You will find Rêve d'Or and Emilie Dupuy Roses as hardy as any climbers, and, with the Jessamine, these will be sufficient. It is rather too late for Rose cuttings in your cold district; they should be inserted in September. Pruning is not done until March, when we shall probably be devoting an article to that operation. You can safely lift all the plants you mention now, but Dahlias, Carnations, and Chrysanthemums had better be sheltered in a frame and planted out next spring; the first-named would certainly not survive the winter. Yours is a very small piece of ground to turn into a "wild garden." To do this to any advantage a much larger area is needed. You might plant Michaelmas Daisies of various heights and colours, Primroses, Daffodils, Anemone japonica, Aquilegias, Delphiniums, Doronicums, Heleniums, Stobæa purpurea and Megasea cordifolia, placing the Michaelmas Daisies where you want the tallest plants in autumn, and the Delphiniums where such are wished for in summer. Remove the Gooseberries now, and prune next March.

2229—**Bulbs.**—Should all bulbs be put in the dark to make roots?—THORN.

*** *Yes, such bulbs as Tulips and Hyacinths, until the young growths appear.*

2230—**Geraniums in winter.**—Will you tell me how one can have Geraniums in profusion for cutting during the months of November and December?—IRELAND.

*** *We have recently given an article upon this subject. See* GARDENING, *October 30, 1897.*

2231—**Tomatoes—are they fruits?**—Could you kindly inform me in your valuable paper if Tomatoes can be classed as fruit in showing in a collection of fruit?—HOLLY LEAF.

*** *Certainly the Tomato may be shown as a fruit; but it does not count for much in a good judge's estimation. A cluster of Grapes, Figs, Peaches, etc., score many more points.*

2232—**Treatment of Clematis Flammula.**—"L. F. B" wishes to know if the Clematis Flammula should be cut down after flowering like Clematis Jackmani?

*** *This Clematis requires the same treatment as the Jackmani section. Prune early in November, cutting down the wood to within 9 inches of the soil. Mulch with well-rotted dung early in spring.*

2233—**Sweet Williams for next year.**—I am anxious to have some Sweet Williams in bloom next year. When should the seed be sown to accomplish this?—DIXIE.

*** *To ensure strong, healthy plants for flowering next year seeds ought to have been sown in the early part of May in a bed of prepared soil in the open air. During dry weather the surface-soil should be kept moist, in order to assist the germination of the seeds. When large enough the plants should be planted out in good soil, allowing about a foot or so between them.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants — *Arbor.*—1, Cyrtomium falcatum; 3, Selaginella Kraussiana; 8, Prickly Shield Fern (Polystichum angulare); 10, Probably Lomaria gibba. We cannot, unfortunately, name the others as the specimens were so poor. Please send some more fronds carefully packed.——*R. Henry.*—1, Adiantum rubellum; 2, Adiantum mundulum; 3, Gymnogramma spectabilis; 4, Nephrolepis Philippinensis; 5, Onychium japonicum; 6, Adiantum decorum; 7, Lastrea Filix-Mas (common Male Fern), grown under protection; 8, Asplenium syn. Neottopteris australasicum.——*An Old Subscriber.*—1, Polystichum capense; 2, Pteris tremula; 3, Microlepia hirta cristata; 4, Adiantum formosum; 5, Pteris longifolia; 6, Polypodium pustulatum.——*T.*—Cotoneaster rotundifolia. ——*Sabrina.*—It is unfortunate that you could only send us part of a leaf for identification. It might be Genista tinctoria var. If you can send us a proper specimen we shall be pleased to name it.——*S. Self.*—Very pretty Gladiolus, but we cannot name variety; there are so many of them.——*R. C. G.*—1, Double Tropæolum, but too faded to determine variety; 2, Salvia splendens; 4, Echeveria glauca; 5, Begonia Weltoniensis.——*Mrs. R. C.*—Erigeron multiradiatus.——*T. W. Alexander.*—We could not decipher your *nom de plume.* 1, Salvia splendens; 2, S. Bethelli.—— *Thorn.*—Apparently a Eupatorium, but very difficult to tell from a leaf only. If you could send a flower, we should be able to help you.——*Delta.*—Spindle-tree (Euonymus europæus).

Names of fruits.—*S. Self.*—The rosier Apple of the two is Hawthornden; the other King of the Pippins probably, rather out of character.——*M. S.*—1, Probably Napoleon, but fruit much out of character; 2, Vineuse, a good stewing kind; 3, Royal Russet; 4, Pear Autumn Bergamot; 6, Norfolk Beaufin; 7, Not recognised; 9, Golden Spire.——*J. F.*—Warner's King. —— *H. G.*—1, Lord Suffield, out of character; 2, Mère de Ménage; 3, Old Hawthornden; 4, Old Nonpareil.—— *Rev. Denis K.*—1, Hall Door; 2, Norfolk Beaufin; 3, Lord Suffield; but you labelled another Apple No. 3, also, which is Lady Henniker; 4, Pine Russet, but poor fruit. Yes, there is always a demand for good British-grown fruit.—*C. R.*—Certainly not Pear Fondante d'Automne; not good enough. It is Beurré Bachelier, a much inferior fruit.——*W. T., Roscrea.*—1, Small Hollandbury; 2, Queen Caroline; 3, Emperor Alexander probably, but poor fruit: 5, Lord Derby.

TO CORRESPONDENTS.

Dick.—We do not recommend individual traders, and always refer our readers to the advertisement columns. ——*R. E. T.*—H. B. May, Dyson's Lane Nursery, Upper Edmonton.——*T. H.*—There are eight or nine editions of "Miller's Gardener's Dictionary," folio size and in several volumes. The price is, we should say, about £1 at the outside. Mawe and Abercrombie's works are often to be picked up at second-hand booksellers'. We are not sure whether the work mentioned is identical with their "Every Man His Own Gardener." If so, we have seen copies at 1s. each. The other volumes could be disposed of easily.——*Constant Reader.*—You could get all the information you desire at the Post Office. It depends, of course, upon the quantity sent. A strong card-board box, such as is used generally for sending flowers in, would suffice, we should think.——*K. M. H.*—The plant can be obtained from any good hardy plant nursery. Look through our advertisement columns. If you fail to get it, write again.

Catalogues received.—*Trees.*—Little and Ballantyne, Carlisle.——*Roses, Shrubs, etc.*:—Wm. Clibran and Son, Oldfield Nurseries, Altrincham.——*Roses, Shrubs, and Fruit-trees.*—Sydney S. Marshall, Barnham Junction, Sussex.——*Roses, Hardy Plants, Shrubs, Fruit-trees.*—Jas. Cocker and Sons, Aberdeen, N.B.——*Forest and Ornamental Trees, Evergreens, etc.*—Dicksons, The Nurseries, Chester.——*Forest and Fruit-trees, Roses, Shrubs, etc.*—W. Smith and Son, Aberdeen.

LAW.

Amenities of adjoining property owners.—I had a mutual wall built around my garden, and, at his request, allowed the adjoining owner to erect a wash-house against the wall, reserving a similar right to myself. He has now built at his side of the wall an ashpit wall which is half the height of the wall of my garden, and thus forms a step to it. I have three times requested him to remove this low wall, but he does not comply. Can I compel its removal?—CONSTANT READER.

*** I do not quite understand what you mean by a "mutual wall," as it seems to have been built by yourself; but probably it is on the boundary of your property. Your neighbour may build where he likes upon his own land, and as near your wall as he chooses, but he may not connect his building to that wall without your consent. You cannot compel the removal of the low wall, for your neighbour has as much right to build a low wall as you have to build a high wall.—K. C. T.

Rateability of greenhouse.—I occupy a cottage for which I pay the rent of £3 a quarter, and which is assessed to the poor rate at £10 15s. I have just erected a greenhouse 18 feet by 9 feet at the end of my garden, and the parish authorities are about to raise my assessment. Can they legally do this, as the greenhouse stands on one course of bricks laid without mortar on the ground? My landlord has not raised my rent, nor does he intend to do so.—CARPENTER INQUIRES.

*** If the greenhouse in any way increases the letting value of the property the assessment may be properly raised. If the landlord could have obtained an extra rent by himself erecting the greenhouse, it must increase the letting value.

Gardening partnership.—We cultivate a garden for profit in our spare time. As my father is dead, my mother wishes me to do all the work, while she will find all the money required for expenses, and we divide the receipts. In the event of her death the garden and greenhouse to be mine. There are some younger children who do no work. If a written stamped agreement be necessary, will you give me a short form or advise me as to the best course?—W. H.

*** Perhaps the simplest and least expensive way of securing your purpose would be for you to become joint tenant with your mother, getting the landlord to insert your name in the agreement of tenancy if there be one, and the rent receipts should be made out in your joint names. Your mother should also make a will leaving to you all her interest in the garden and greenhouses and in their contents. You can scarcely secure your end by a simple agreement, and to effect it in any way other than that advised you should have recourse to a solicitor, who will draw up a proper deed of partnership. If care be not taken you may find that at your mother's death her other children would claim to share her interest.

Taking land on lease for market-garden purposes.—Two years ago I took 2 acres of land on a lease for ten years to cultivate as a market garden, but it was then very little better than moor-land and would grow nothing until manured, as it had been starved for many years. I have some lights, and I am about to erect a greenhouse, and also a forcing-shed for Rhubarb. When my lease expires shall I be entitled to compensation for these matters, and also for the general improvement of the land?—A YOUNG BEGINNER.

*** If you had, previous to January 1st, 1896, planted any fruit-trees or fruit-bushes in situations where these were intended to remain permanently, or if you had planted any Strawberry-plants, or planted Asparagus, or similar crops, or had erected any building, greenhouse, etc., for use in the cultivation of the garden, and the landlord had knowledge that the place was being cultivated as a market garden, you will be entitled on quitting to compensation for these matters as the Market Gardeners' Compensation Act will apply. You will be entitled to no compensation for what you call "general improvement," as you knew the state of the land when you took it, and it will be presumed you took it into account when fixing the rent to be paid. You will be entitled to compensation for the use of purchased manure, but from the amount of such compensation there would be deducted the manurial value of all roots, green crops, and similar produce sold off during the last two years.

Removing shrubs, etc. (*T. S.*).—Please read an article that will shortly appear upon this subject.

POULTRY.

Soaked hot corn for poultry (*O. F.*).—I believe the answer to this question must depend upon circumstances to a considerable extent. There can be no doubt whatever that the success connected with winter poultry-keeping depends upon a good supply of eggs, and to ensure these it is necessary that the Fowls should be kept warm both by day and by night. A warm house and run will certainly add to the comfort of the birds, but the animal heat is mostly raised by means of the food supplied. A flock of hens, for example, which are fed on meals mixed with boiling water during the continuance of frosty weather must be far more likely to lay than another lot which are supplied with meal mixed with cold water. The same may be said with regard to hard grain, but here the same conditions do not apply. The meal is received into the system almost immediately, and should be fed upon an empty stomach; the whole corn has to be ground up by the Fowl and thoroughly digested, whilst it is intended to serve as a source of heat through the long winter's night, and is, therefore, not desired to be used up at a rapid rate. Another point which deserves notice is the effect which the soaking process has upon the corn. It softens the grain, makes it swell, and thus may affect injuriously the digestive organs, which are more adapted for dealing with very hard matter than with soft substances. I believe, too, the use of soft corn is likely to cause impaction of the crop; at any rate, a Brahma hen of my own was injured in this way last autumn through feeding on soft Wheat. Under the circumstances, therefore, I would not use hot soaked corn as a food for Fowls—except Oats—and if the birds desired a warm feed at night I should use meal.—DOULTING.

BIRDS.

Teaching Ravens to talk (*Corvus*).—To enable them to become good talkers the instruction of these birds should commence when they are quite young, before they pick up a medley of words and sounds, which they will assuredly do if their teaching be delayed after they are fledged. We should say that your bird would now be too old to become a finished talker, however diligent you might be in endeavouring to impart instruction. In order to teach young birds thoroughly they require to be kept in a somewhat darkened room and in separate cages, and so placed that they cannot see each other, when the words or sentences it is wished them to learn must be constantly repeated in their hearing day after day. Each time an attempt is made on the part of the pupils to repeat after the teacher a little more light should be admitted into the room and a little food given. It is necessary to persevere in the teaching, otherwise the birds are liable to spoil the sentence it is desired they should learn by suppressing or displacing some of the words, and although some birds learn with greater readiness than others, it requires, as a rule, several months' continuous instruction before a bird acquires firmness in its vocal performances. Your bird will no doubt learn a few words (if it has not already done so) from casual conversation it may hear, but you must not expect much of it if it has arrived at the age of eighteen months without any schooling; you will, anyhow, find it a very interesting feathered companion and an intelligent and amusing pet.

CARNATIONS.—Surplus strong-rooted layers, H. K. Hales, Old Clove, Salisbury, Raby, Mrs. Muir, Redbraes, 2s.; Sinkins Pink, 1s. per doz. Free, cash with order. Satisfaction guaranteed. Must clear.—NORRIS, Malvern.

LILIES OF THE VALLEY. — Flowering crowns for pots or bedding, 1s. 6d. 100. Climbing Honeysuckles, 1s. 3d. doz., free.—A. SYMONDS, 65, East-street, Horncastle.

PLANTS IN SMALL LOTS

15TH SEASON. — Hardy Perennials. — GAILLARDIA grandiflora, crimson, edged orange; PENTSTEMON barbatus, coral-red; CHRYSANTHEMUM max. (large white Marguerite); ANCHUSA, bright blue; DELPHINIUMS, tall, blue; ditto, DWARF, gentian-blue colour; LYCHNIS, scarlet; GEUM, scarlet; HEUCHERA, coral-scarlet; MATRICARIA, double white; ERYNGIUM, blue, Thistle-like plant; Perennial Single SUNFLOWERS; ERIGERON glabellum (light purple Marguerite); Alpine ASTERS; Single PYRETHRUM (French Marguerites), in mixed colours; and Marguerite CARNATIONS. All strong plants, 3d. each; 6, any selection, 1s.; 12, 1s. 9d.; 24, 3s. 18d. orders free. List free.

ROSES. —— 6 Climbing Roses, including Red Gloire and W. A. Richardson, 2s. 6d., free.

8 CLIMBING ROSES, including Turner's Crimson Rambler, Red Gloire, Climbing Capt. Christy, and W. A. Richardson, 4s., free.

DWARF ROSES,—U. Brunner (cerise), Eugene Furst (crimson), Etoile de Lyon (sulphur), Miniature (white), Pierre Notting (dark red), La France (pink). White Moss. Also the climbers W. A. Richardson, Félicité Perpétuel, Red Gloire, William's Evergreen, Cramoisi-Superieur (crimson), and Dundee Rambler. One each of these 13, 6s., free; or 3, any selection, 2s.; 6, 3s. 6d.; 12, 5s. 9d.

CRIMSON RAMBLER and **PERSIAN YELLOW**, 1s. each, the 2, 1s. 9d. 18 l. orders free.

HARDY CREEPERS, etc.—CLEMATIS, white, scented; do., small purple; do., vitalba (Traveller's Joy); Var. HONEYSUCKLE; VIRGINIAN CREEPER, large leaf; do. Veitchi, self-clinging; KERRIA japonica, orange; PHILADELPHUS (Mock Orange); DEUTZIA crenata, double pink; JASMINUM nudiflorum, yellow. All the above 4d. each; 5, any selection, 1s. 6d.; 12, 3s. WISTARIA, mauve, rapid climber, 6d.; 3, 1s.

Safe arrival guaranteed. Postage extra on orders under 1s. 6d.

REV. C. BUCK, Belaugh Rectory, NORWICH.

CARNATIONS.—Queen of Bedders, salmon-rose; Elsie, yellow, marbled with white, rose, and peach; Leander, deep yellow self; Rose Celestial, silvery rose pink; General Boulanger, fine scarlet; Gloire de Nancy, large white, sweet-scented; Alice Ayres, white, carmine edged; Pride of Penshurst, fine sulphur; Mrs. Muir, white, dwarf, excellent; Mrs. Reynolds Hole, soft apricot; Mary Morris, rich deep rose; Mrs. Chas. Daniels, carmine-flesh, fragrant, 4s. Pinks, 12 vars., 2s. Violas, 12 vars., 1s. 3d. 12 Perennials, 2s. All car. free.—J. LANGFORD, Florist, Withington, Manchester.

4 AMPELOPSIS VEITCHI, true, self clinging, 2 year old plants, 1s. 6d.; 12 for 3s. 6d.; 100 for 20s., car. paid.—BATEMAN & CO., Rose Growers Axbridge.

BEACHEY'S VIOLETS for present flowering, 12 best doubles, in 4 varieties 3s.; 12 hardy, 3 varieties, 3s.; 12 clumps for pots or frames, 6s. Recent varieties: Avellan, California, Dybowsky, Princess de Galles. 4s. doz. plants.

BEACHEY'S ROSES.—H.P.'s, 5s. doz; Teas, 7s. 6d. doz., our selection. Free for cash.—Kingskerswell, Devon.

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HARDY PERENNIALS. — 200 varieties. Cheap. Catalogue free. Yellow perennial Foxgloves, 20, 1s. 3d. Montbretias, scarlet, orange, 20, 1s. Sulphur perennial Marguerite, also white, 12, 1s. 3d. Hardy crimson Afghan Lily, 15, 1s. Double white Primroses, 12, 1s. 6d. Gentiana acaulis, 15, 1s. 3d. Lobelia cardinalis, 4, 1s. 3d. Canterbury Bells (Sutton), best mixed, 30, 1s. 3d., free.—KATE, Harley Park, Callan, Ireland.

EARLY-FLOWERING PRIMROSES, 100, 1s. 6d. Small-leaved Ivy, rapid grower, 100, 1s. 4d. Perennial Phlox, 4 named varieties, 15, 1s. 4d. 40 Rockery Plants, 4 named varieties, 1s. 4d. 20 Perennial Sunflowers, 4 named varieties, 1s. 4d. 4 Christmas Roses, 1s. 4d. Auriculas, 12, 1s. 6d. Osterach Ferns, 20, 1s 3d. Rose of Sharon (St. John's-wort), 12, 1s. 6d., free.—KATE, Harley Park, Callan, Ireland.

IRIS FŒTIDISSIMA, coral-red berries, 4, 1s. 4d. Iris Pseud-Acorum (Yellow Flag), 20, 1s. 3d. Winter Heliotrope, Tussilago fragrans (Coltsfoot), 15, 1s. 3d.—KATE, Harley Park, Callan, Ireland.

CYCLAMEN, giant grandiflorum, without doubt the best strain in cultivation; extra stout, bushy plants out of 4-inch pots, fit for 40's, 6 for 3s. Primula sinensis, superb strain, strong plants ready for 5-inch pots, 1s. 6d. doz. Cinerarias, beautiful colours, strong plants, fit for 5-inch pots, 1s. 6d. doz. Ferns for cool greenhouse, 12, from pots, 2s.; smaller, 1s. Aralia Sieboldi, beautiful green foliage, stout plants for 4-inch pots, 1s. dozen. Ampelopsis Veitchi, the beautiful self-clinging, small-leaf Virginian Creeper, 3 strong plants from pots, 1s. Special F Collection of Bulbs, including Hyacinths, Tulips, Narcissi, &c., &c. 113 sound bulbs for 3s. 6d. ALL carriage paid for quantities named.—F. G. MILLER, Ocklynge Nurseries, Eastbourne.

PLANTS FOR AUTUMN PLANTING.—Very fine stuff, 144, free, 2s., containing 12 each of Canterbury Bells, S. Williams, Double Wallflower, Iceland Poppy, Myosotis, Cornflower, Lupins, 12 Blood and 12 Yellow Wallflowers, 36 Stocks in 3 varieties. Also Wallflowers, blood and yellow, fine bushy plants, 100, 1s. 6d., free. Stocks—Brompton, stiff bushy plants, white, scarlet, purple, and Queen, 1s. 6d. 100, free. Cabbage Plants, Ellam's and other varieties, fine picked plants, 1s. 100 free. Winter Lettuce Plants, 200, free, 1s. 3d. Musselburgh Leeks, 200, 1s. 6d.—J. DUCKER, Florist, Haxey, via Doncaster.

BRIERS AND ROSES.—Standard Briers, 25, 2s.; 50, 4s. 6d.; 100, 7s. 6d. 8 Hybrid, 4 Tea Roses, 6s., free.—JAJAMES, Brough, Yorks.

PINKS, double white, scented, extra strong, 100, 1s. 6d.; 1,000, 10s. Sweet Williams, Brompton Stocks, Wallflowers, strong plants, best strains, same prices. White Carnation, Mrs. Muir, strong plants, 3s. per doz.—NEWBROOK, Heswall, Cheshire.

CHEAP — CHEAP. — Grand Table Plants, Grevilleas, 2 feet high, in 5-inch pots, 5s. per dozen.—E. JOY Florist, Kingswood, Bristol.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

NEW FRENCH CHRYSANTHEMUMS.

While away on the Continent this time last year I saw a large number of the new seedlings that are now being shown for the first time in England, and from notes then made I find that a large proportion of those that were considered the best are fulfilling the good opinion formed of them. Amateurs and others looking out for something new would do well to look out for additions in white Japanese among such new ones as Mme. Deis, Fée de Champsaur, Mme. J. Smeirs, Mme. Ferlat, large and fine, but best perhaps of all, Mlle. Lucie Faure, which I consider to be far the finest. It is a big solid incurving white Japanese, with very substantial florets.

Topaze Orientale is a good yellow of a pale tone; M. W. H. Fowler, a large pale, pearly-silvery-pink, shaded rose; Princesse de Galles is white, large in size, but rather loose in build; Mme. Louis Rénny is a white sport from Mrs. C. Harman Payne, which well-known show variety has also produced another sport, a rosy-bronze, bearing the name of Mme. Eugène Testout; Vicomte Roger de Chezelles is a deep golden-bronze; Mme. G. Bruant, a large white Japanese, shaded purple-mauve; but one of the most curious and interesting from the novice's standpoint is the pale sea-green variety, Mme. Ed. Roger, Japanese-incurved in form, and one that will attract much attention from those who do not profess to belong to the inner circle of the Chrysanthemum-growing fraternity. Werther is a rich purple-amaranth, reverse silvery; Congrès de Bourges, similar in tone; M. Massangede Louvrex is a large fine yellow; Mlle. Lawrence Zédé, a big, solid violet-amaranth with silvery reverse. To my taste one of the most taking is N.C.S. Jubilee, a closely-built incurved Japanese of a peculiarly soft shade of lavender-pink, shaded silvery-pink on the reverse. For an early yellow Soliel d'Octobre is good and useful. Most of these are from the famous raiser Mons. Ernest Calvat, who has of late years done more to improve the Chrysanthemum than all the other French growers put together, and competent authorities declare that his novelties are among the easiest for amateurs to grow. He certainly seems to have the best idea of the strain that is most suitable for English admirers of the popular flower, and quite deserves the high encomiums that our best exhibitors and growers bestow upon him.

C. Harman-Payne.

Chrysanthemum blooms with large green eyes (*M. S. G.*).—The reason why Chrysanthemum blooms develop an eye is either the result of poor cultivation or through retaining the buds too late in the season. Buds which are retained late in the autumn have such a short time to develop their florets, and on this account are poor and flimsy in the blooms. Then, again, to get a full flower of some sorts, such as Edwin Molyneux, high culture is absolutely necessary, or the blooms will have only a few rows of petals. You must therefore grow your plants strongly all through the growing season, and retain fairly early buds. If you desire to obtain plants to produce medium-sized flowers for decorations, you would find it a great advantage to make a selection of easy-growing sorts, and those which are very double in their formation.

JAPANESE CHRYSANTHEMUMS AT THE CHRYSANTHEMUM SOCIETY'S SHOW.

The exhibition held last week at the Royal Aquarium under the auspices of the National Chrysanthemum Society was of great interest. The following are noteworthy varieties. A good Japanese-incurved is

Western King, and is of the purest white. The flowers are of large size, and incurved, the lower petals with age prettily drooping, and these being of good substance and also broad, a grand massive exhibition flower is developed.

Mme. Carnot was exceptionally fine, a vase of this sort in Mr. Norman Davis' group being conspicuous. Modesto is without doubt one of the richest and deepest yellow-coloured Japanese-incurved. Either for vase decoration or on the show board it is very valuable. Etoile de Lyon is exceptionally handsome in form and colour, a large trumpet glass in which these flowers were arranged by Mr. Davis, with appropriate foliage, forming a grand centre to the display. Mons. Chas. Molin was represented by highly coloured flowers, with a free suffusion of crimson on broad florets of capital substance, and, as this is a variety of easy culture, should be in all collections.

A bloom of the yellow sport from Mme. Carnot secured the coveted distinction of best Japanese flower in the show, and proved conclusively the value of this new sort for exhibition. Mary Molyneux, a new Japanese-incurved of immense size, and yet exceedingly useful for show purposes, is undoubtedly a fine acquisition. The colour is deep rosy-pink inside the florets with a silvery rose-pink reverse. The form is beautiful. A grand flower of Snowdon, an immense pure white Japanese, with stiff petals of splendid substance and prettily notched at the ends, was generally admired. Ella Curtis, a new sort, and after the same build as old Boule d'Or, promises well, and seems to be a much easier sort to grow. The broad petals twist and curl prettily. Lady Hanham, the new rosy-fawn sport from Viviand Morel, is a distinct gain, but a bud only medium late seems to give the best bloom. Mrs. F. A. Bevan is a pretty flower, colour flesh-pink. The rich, crimson-carmine blooms of John Neville were invaluable on the show-board whenever staged, the golden reverse just showing, to heighten the effect of such a rich colour.

Mr. A. G. Hubbuck is another magnificent flower, its rich shade of chestnut-red when fully developed telling splendidly in strong competition. Mrs. Richard Jones (syn. Mrs. Chas. Blick) still retains its hold as a good white exhibition sort, and was often in evidence. Milano, Mr. H. Briscoe-Ironside's invaluable seedling, was good in October, and equally so on this occasion. Its long broad petals, free from coarseness, of the unique shade of cherry-carmine colouring, stamps this as a capital variety for exhibition. A. H. Wood, the beautiful yellow sport from Primrose League, was freely exhibited, its long and graceful florets developing an elegant flower.

Edith Tabor was one of the best of the yellow flowers seen, its grace and pale golden-yellow colour giving it a leading position in most exhibits. The massive Japanese-incurved, Australie, is one of the easiest sorts to cultivate. The colour of the petals is rosy-amaranth, with silvery-white reverse. Matthew Hodgson is, perhaps, one of the brightest Japanese flowers we have, and when finished, although not over-large, is a most striking and refined flower. Another refined sort is Miss Elsie Teichmann; colour pearly-white, and a perfect exhibition bloom. Mrs. G. Carpenter, a refined and handsome flower, of a pleasing shade of rose pink with silvery reverse, is deserving of greater notoriety. Mrs. H. Weeks, without doubt the largest and handsomest flower in the Japanese-incurved section, was always in evidence, its broad petals making a striking flower. Colour pearly-white, faintly tinted pink. Oceana, although not often seen, is an invaluable exhibition sort of splendid quality, and should be extensively grown for exhibition. The rich golden-yellow of Phœbus was everywhere admired, and this variety was probably more largely shown than any other.

Pride of Madford, as a dark sort, was freely exhibited, its deep rosy-amaranth colour being very effective.

Mutual Friend was conspicuous among the white, and, although a shallow flower, was esteemed for its great length of petal and spreading form. Australian Gold was unusually fine, its clear canary-yellow colour being of a delicate shade. Mons. Chenon de Leché has come to the front without doubt this season, and many exceedingly fine flowers were staged. Mrs. J. Lewis, another beautiful white variety, was at its best, and may be considered an ideal show flower. Sunstone is another very full, amber-buff flower, with gracefully-drooping and curling petals of great length, and looks like making a name for itself on the exhibition table. These are just a few of the more prominent flowers of the Japanese types, and, taken as a whole, were well represented in the leading stands.

Experienced Grower.

A good plan of striking Chrysanthemum cuttings. — Those who can command a frame where a little fire-heat may be turned on in severe frosty weather have an excellent structure in which these plants may be propagated. Fill the same with any material up to 1 foot of the glass; then place on this a layer, 6 inches deep, of soil composed of loam, leaf-mould, and an addition of sand. Make the surface flat and dibble the cuttings in about 3 inches apart; water them thoroughly and give air occasionally just to let out moisture. In about six weeks the cuttings will be struck, and may be lifted with fine balls of healthy roots, subsequently making sturdy plants.—H.

Chrysanthemum John Lambert.—This produces finely-shaped individual blooms of large size if grown with that end in view. It also forms useful bushes for ordinary decoration, the numerous buff-coloured blooms, for it is very free flowering, producing a telling effect mixed with those of a brighter hue. John Lambert is so distinct in colour that it ought to be in every collection. Blooms grown for exhibition are usually so perfect in form that, like those of Baron Hirsch, they need little or no dressing. The central or leading blooms on the main shoots look well if cut with a good length of stem and arranged in large earthenware vases, which, by the way, are now becoming very popular. In wet, sunless seasons it does well, hardly ever showing a blind bud.—C. T.

Chrysanthemum Martinmas.—This is one of the most distinct of the early-flowering Pompon Chrysanthemums. The flowers are large for the type, and the colour is a pretty shade of pink, passing to blush with age. Each floret is faintly margined white, thus giving the bloom quite a unique finish. The plant attains a height of about 2½ feet to 3 feet, and is nice and bushy in its style of growth. The constitution is also good.—C. B.

Chrysanthemum W. H. Fowler.—As a decorative variety this is exceedingly good. The flower is rich golden-yellow in colour, shaded with a tint of apricot. It is of medium size, with long broad-fluted petals, and is conspicuous in a collection. The plant is of excellent habit and attains a height of about 4 feet 6 inches. When grown for exhibition, three and even four good blooms may be grown on a strong plant. It does not require a special mixture of soil, but about the same as the majority of Chrysanthemums, but stimulants should be used in moderation, using soot-water in preference to any other.—W. J.

Chrysanthemum Fiberta.—For a display during late September this pretty little Pompon is very useful and effective. For some years this variety has been in cultivation, but until just now little has been heard of it. The plant is dwarf, colour bright canary-yellow, and free flowering. It will give useful sprays of blossoms for vase work.—C. B.

Chrysanthemums—soot and ashes in potting compost (*M. S. G.*).—Soot is often used in Chrysanthemum potting compost, but only the slightest sprinkling is really necessary. If overdone there is great risk of damaging the tender roots. It is much better when used for watering, after first being soaked in a tank of water for a few days. It is a very useful tonic to the plants when they have filled their pots with roots. Soot is sprinkled over the rougher parts of the compost which covers the crocks at the time of final potting, this arresting ingress of worms. Ashes are not used, at least not generally; there is always the chance of these being highly charged with sulphur, which would bring about most disastrous results.

GARDEN WORK.*

Conservatory.

Christmas Roses in pots or tubs will be useful in the cool conservatory. It will take some time to grow large specimens, but they last in good condition a long time, and when obtained, do not be in a hurry to break them up. Late Chrysanthemums, whites and yellows, should be kept as cool as possible. They will not be placed in the conservatory among the flowering plants yet. We have a houseful of yellows and whites, and up to the present they have been without fire-heat, and have had air night and day except when foggy and frosty. They will be valuable at Christmas and later on. There must be a special house or place to keep the late sorts, or they will come into bloom too early. It will soon be time to think of taking cuttings of some of the Chrysanthemums, which require time to build up. If some varieties are struck late the flowers will be thin and not good enough for exhibition. For conservatory work, cuttings struck in March, cut down end of May, and one shoot and one bloom taken, will produce very fine flowers, and the strongest plants will do in 7-inch pots. The smaller plants will have room enough in 6-inch pots. These are the plants for making groups in the conservatory or to decorate the rooms. Very pretty now are dwarf plants of Abutilons in variety—yellow, white, etc. The best way of getting dwarf plants well bloomed is to plant out early in June, cut pretty hard back in July and lift carefully, pot and stand in the shade in September, and place under glass before frost comes. They will then be very bright from this onwards through the winter. In large houses they may be planted out permanently and cut back early in August for winter flowering. Heliotropes treated in the same way will be full of blossoms now. The same treatment has been successfully practised with the different varieties of Habrothamnus. Fireball and Meteor Tropæolums will be growing freely now, flowering as they grow, and brightening up the upper part of the house. Those who wish to have this Nasturtium in perfection should plant it out in the summer and train it up on to the roof, and give it a free hand or head, just merely attaching it to the wires here and there.

Forcing House.

In small gardens the stove or forcing-house is called upon to do many things besides grow stove plants. I have seen Cucumbers, Tomatoes, Strawberries, and various kinds of flowers grown in one house, and in one house half-a-dozen pot-Vines were forced in addition to the things named above. It is mainly a question of management and prompt attention, and the structure must be a light one, and the night temperature must not run too high; 60 degs. will be ample, and the ventilation in bright weather must be carefully studied. Anything that is usually forced in winter, if properly prepared, may be started now. Flowers will be wanted when the Chrysanthemums are thinned down. Azaleas, especially those having white flowers, of which Deutsche Perle is the best forcer, Gardenias, Deutzias, Lily of the Valley, Solomon's Seal, Dielytra spectabilis, Spiræas, etc., may be started now, and, of course, bulbs of many kinds may be helped on.

Pines.

Once a week will be often enough to water Pines now, unless the pots are very full of roots. In nearly all cases Pines are plunged, the plunging materials usually being leaves. If the bottom-heat is at fault they may be taken out, fresh leaves introduced, and the plants replunged, no time being lost in the operation. This is important in the case of successions, which have to depend to a large extent upon the beds for root warmth. Things move very slowly now, and except in the fruiting-house, which should have a night temperature of 68 degs. to 70 degs., it is best not to over-heat. Sixty degs. will be high enough for successions, especially those that will be expected to show fruit early in the new year, and in cases of this kind the water-pot must be in careful hands.

Ferns Under Glass.

Many Ferns may be grown in a night temperature of 50 degs. or so. It does not matter to a degree or two, but anything about 50 degs will grow nearly all the most useful Ferns, including a good many of the most useful Adiantums, all the Pterises, and Aspleniums. If the tropical Ferns are grown, including Gymnogrammas, then have a division across the house, and keep one end warmer. The atmospheric moisture should be regulated according to the temperature. When Maiden-hairs get shabby from picking off the fronds or otherwise, cut them, keep them a little drier till the new growth starts away, and then repot according if more stock is required.

Orchard House.

Keep the potted trees outside for the present on a bed of ashes, or in some position where worms cannot enter the pots. I am assuming all trees that required larger pots have been repotted and the others top-dressed, as the trees are now making roots. Cover the pots with long litter the moment frost sets in.

Figs in Pots

should not be exposed to frost, and if outside should be placed under cover. The Fig forces well in pots if well nourished with rich top-dressings and liquid-manure after some progress has been made. Mix a little bone-meal with the top-dressing compost.

Vines in Pots,

if strong and well ripened, may be started now in a night temperature of 50 degs., to be gradually increased as growth progresses till 65 degs. is reached when in blossom.

Window Gardening.

Begonia Gloire de Lorraine is a pretty plant in a warm, light room where gas is not burnt. Ferns, Palms, Aspidistras, and other foliage plants will not require so much water now, but must not be permitted to get dust dry.

Outdoor Garden.

Chimonanthus fragrans is a sweet thing on a sheltered border. In very warm gardens it may do as a bush, but it flowers more freely on a wall. It is rather a difficult shrub to propagate except from layers, and layers take some time to root. Garrya elliptica is a very ornamental wall-plant in winter when covered with catkins. The male is the most ornamental. Ivies in all forms are always effective in winter. The variegated kinds come out brighter when washed and refreshed by the autumn rains. The variegated varieties are generally grafted on the green sorts, but they strike freely from cuttings. Pyramids of the larger-growing Ivies, such as dentata, Rægneriana, and Emerald Gem are very effective, and are easily created. Fix a stout pole, 7 feet or so long, firmly in the ground, plant a couple of plants out of pots near it, and keep them regularly trained. Poles furnished with Roses, Honeysuckles, and Jasmines are charming when well covered. Fuchsias, even those generally considered hardy, are better with a little protection in winter in the form of a mound of ashes, burnt earth, or old tan. Have a heap of dry, porous material ready for earthing up Tea Roses the day after frost sets in. We wait till the frost has dried the ground, and then earth up. Where the plants have to be earthed up with the surrounding soil the frost must be anticipated, but care must be taken that the roots are not exposed. There should be no Tulips or other bulbs out of the ground now.

Fruit Garden.

Some of the most profitable Apples for garden or orchard planting are Stirling Castle, Bramley's Seedling, Bismarck (this Apple bears freely in a very young state—Maidens are often covered with fine fruit), Alfriston, Annie Elizabeth, Cellini Pippin, Dumelow's Seedling, Lane's Prince Albert, Duchess of Oldenburg—an early Apple of good flavour. The two best late dessert Apples are Orange Pippin and Lord Burghley. King of the Pippins and the American Mother Apple are good kinds and keep well. Though not much planted, Betty Geeson is a good late cooking Apple. It is very large, deep in the eye, and not handsome, but it is good in the kitchen, and will keep a long time. Well-established pot-Vines may be started any time now, but the canes must be strong and well ripened. Start at 50 degs., and keep the house close till the buds break. The first Peach-house, if ready, may be started quickly now, or as soon as ready. If there was any red-spider in the house last year give a thorough cleaning, using soap freely, and mix a pound of sulphur in the pail of lime-wash with which the walls are dressed. If Strawberries are wanted very early, and the plants are strong, and the crowns in the pots single and well-ripened, a few dozen may be started on a bed of leaves in a pit near the glass. They will be better not plunged more than a couple of inches or so, just enough to steady the pots. Get on with the pruning and nailing.

Vegetable Garden.

Where there are conveniences for forcing vegetables a start should be made with Seakale, either on the ground where grown, or in the Mushroom-house, or some dark structure, where a temperature of 60 degs. can be maintained. There should be a good-sized Mushroom-house in every garden. It may be cheaply constructed with hollow walls made with boards, and the roof thatched with straw. Such a house will be warmer in winter and cooler in summer than one built in the ordinary way. Abundance of Mushrooms, Seakale, Rhubarb, and Chicory, may be obtained, and Lily of the Valley. Several kinds of flowers may be started, and if the house is large enough the warmth of the beds will suffice to secure a temperature o 50 degs. But where Seakale and Rhubarb are forced in the same house, the manure for the Mushroom-beds must not be taken in till ready for making up—or the flavour may suffer. Sow early Peas and Beans on a warm border and French Beans in a warm-house. Less than 60 degs. to 65 degs. at night will not be warm enough for French Beans. Tomatoes coming on will require a temperature of 60 degs., and a fairly dry atmosphere. Fertilise the blossoms when the pollen is dry, about mid-day. Cucumbers in warm-house must have the young growth stopped and tied in frequently. When this is done a knife need not be used. Look over the seed stores of early Potatoes and place the sets crown upwards in shallow trays, and place in a light position.

E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 15th.—Busy pruning fruit-trees. This work will be pushed on as rapidly as possible whilst the weather is suitable. We do not believe in hard pruning. The balance of the trees will be secured, but bush-trees, pyramids, and standards will be allowed to attain full development as early as is consistent with a properly furnished base. Selected cuttings of Gooseberries and Currants. Made a fresh plantation of Raspberries. These are renewed piecemeal.

November 16th.—Cut down Chrysanthemums out of bloom and placed in cold pit. Moved a batch of Begonia insignis, Gloire de Lorraine, and others to the conservatory, and brought away Erica gracilis, which is over; cut the plants back, and placed in cool-house to break quietly. Among white Chrysanthemums for cutting Mme. Isaacs is now conspicuous; large, well-developed flowers with stout stems. Watered Mushroom-beds in bearing with liquid-manure, and a little salt in the water.

November 17th.—Shook out and repotted the earliest rested Gloxinia tubers. We generally have these in bloom from February onwards. They are just showing signs of growth. Potted a lot of Trumpet Major Narcissus. For these we use 7-inch pots, filling them with bulbs. This size is more useful for the conservatory than smaller pots. We shall not plunge them outside. They are placed in a cold-house to make roots, and then helped on with a little heat. They will bloom in February and March.

November 18th.—Pruned Plums on west walls, and watered the trees with Gishurst Compound. Moved a couple of dozen pot-Vines to small forcing-house: Hamburghs, Foster's Seedling, Golden Queen, and Madresfield Court, but chiefly Hamburghs. We have other things in the house, and therefore a higher night temperature is given than is generally recommended. Though this course has been followed for some years, the Vines always do well. The night temperature will be nearer 55 degs. than 50 degs. to start with.

November 19th.—Secured all the Cauliflowers and Veitch's Autumn Broccoli turning in or which have commenced to heart. We have a lot of dry Bracken, Rushes, etc., to shelter Celery, etc., when frost comes; but the ground will be allowed to get crisp on the top before the covering is put on. Trenched vacant land. Shall take advantage of frost to wheel on manure. Made up hot-beds for early Horn Carrots. Sorted over early seed Potatoes, and placed some in boxes for forcing.

November 20th.—Took up roots of early Rhubarb and put in Mushroom-house, also a lot of Seakale. A fresh hot-bed is made for Asparagus about every three weeks now, as a succession must be kept up. Covered crowns of Globe Artichokes with litter and a little earth over to keep litter in place. Unnailed Fig-trees on walls, and tied branches together ready for covering when frost comes. We should have no Figs outside without protection.

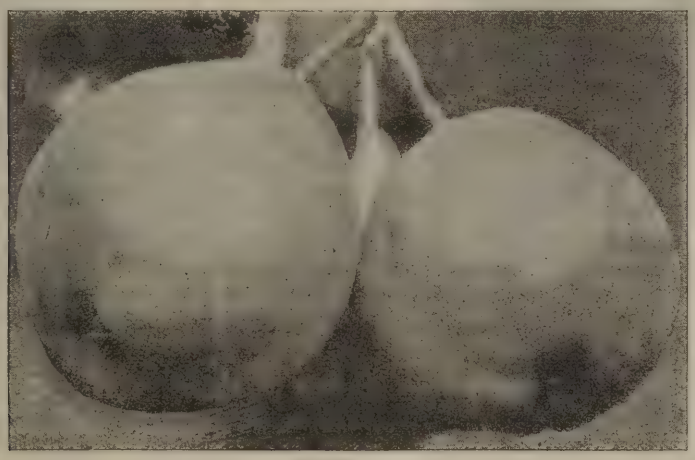
Statice profusa.—This is among the most serviceable of greenhouse flowering plants, and one which provides much useful material for cutting. The trusses of bloom are freely produced, even upon small plants, which always makes them of greater value. Cuttings root quite readily if mossed round after being notched with the knife and kept moist for a few weeks with the syringe. Another good plan where quantity is required is to raise it from root-cuttings, by which means very dwarf plants are quickly obtained.

FRUIT.

PEAR FONDANTE D'AUTOMNE.

This is one of our best autumn Pears, and certainly one that every amateur should possess, as it is of very fine quality, and so free in most soils. Few varieties equal the one named when in season. The fruit is of medium size, deliciously sweet, and a great bearer. Its season is given as October, but it is ripe much earlier on the Quince stock in a warm soil, and this year we had ripe fruits in the middle of September from dwarf trees on a warm border. The question of soil, stock, and mode of growth, or what may be termed the best form for the trees, is an important one to the amateur who cannot afford to experiment in the small space at command. For the best-flavoured fruits I would certainly advise bush culture. A wall is not needed for these, and though this variety does well as an orchard tree on the Quince-stock, unless large quantities of fruits are needed it is not the best mode of culture. Large, spreading trees are not always possible in a limited space; besides, such trees prevent cropping underneath, and this latter is an important point.

For bush culture trees on a short stem are specially good, as the fruits are much finer, and they are freely exposed to sun and air, so that the quality is superior. The variety in question is a sure fruiter, and grown thus it makes a handsome tree, the fruits being available from September to the end of October. Grown in pyramid form it makes a fine, handsome tree, and in poor soils, I mean those of a sandy or gravelly nature, it thrives well on the Pear-stock; but, on the other hand, in good loamy soils the Pear-stock is too strong, and it is not so fruitful. This question of stock should be taken into consideration, also if the soil is heavy or light, and, of course, when the trees are grown in an orchard in standard form the free stock is the most suitable. I have seen excellent results from growing this variety as a small standard, and the tops or head kept to a medium size. Grown thus large fruits, also earlier, are secured, and to make my meaning clear I may state that by small standards I mean a dwarf or short stem, and the head treated as a bush, kept thin, and not at all crowded.



An Autumn Pear (Fondante d'Automne).

As regards position this variety is not at all fastidious as to soil or locality, if not kept too wet or planted in swamps. There is no better time than the present to plant, as then the trees grow away freely in the spring. This variety is much grown on the Continent in bush form for early supplies, but in the north is best on a wall if fine fruits are needed. It is one of the few Pears an amateur can plant and be sure of obtaining a good return from. Of course it is useless to store it, as its season is so short; but, on the other hand, at the season named it commands a ready sale, and if grown on bushes or in pyramid form the fruits can be thinned so that size is obtained. If only a small number of pears can be grown, Fondante d'Automne should have a place, owing to its rich flavour, good cropping, and general excellence. I have not named other forms of culture, such as cordon or espalier, neither do I advise these latter, as if grown in a freer condition the tree is more prolific. This is the chief point, as amateurs want trees that crop regularly in addition to quality. W.

OUTDOOR GRAPES.

A considerable number of articles have been devoted at different times to the culture of outdoor Grapes, some writers strongly advocating their cultivation on a more extensive scale, others protesting that they are not worth wall room. I think one may reasonably adopt a middle course, and without going into ecstacies over them claim that they are certainly worth the room and a little attention bestowed upon them. Here they can always be relied on to ripen sufficiently to make some very good wine, and if a few of the best bunches are slightly thinned and are protected from wasps some sweet berries of very fair size can be secured. The cropping qualities of the particular Vine I have in view in penning this note are indisputable. It very seldom fails, and last year 4 bushels of fruit were taken from 400 square feet of wall. Those who are interested in the culture of outdoor Grapes will welcome the new sort, which is known as Reine Olga. The colour, as seen by gaslight was that of a dark Frontignan or a "foxy" Hamburgh, the bunches were large and the berries of very fair size, considerably larger than in the average Sweetwater. The quality was decidedly good, the watery element that is often a feature in outdoor Grapes being absent, and instead, the berries were firm, solid, and sweet; in fact, to those who like a sweet Grape it is preferable to several of the showy indoor sorts. The fact that the well-known hardy sorts, like the Sweetwater and Black Cluster, do very well here will induce me to try the novelty, and I hope to report on its merits another season. There are fruit-trees that will go on bearing year after year without the slightest assistance of any kind in the way of extra soil or manure, as will the Vine when once established. The old Sweetwater mentioned above is in a well-frequented path that is as firm as a bit of macadam, and it certainly has had nothing extra for the last fourteen years. I work it on the spur system, the Vine going away from a central point with eight main branches horizontally trained on either side, the spurs on the branches being kept at about a foot apart. Occasionally one of the branches may show signs of weakness, and when this is so a young rod is let go the following summer either from above or below to take its place. Better fruit is always obtained by a little special attention in the way of pruning, cutting all weak, thin growth clean away, and reserving strong shoots and buds for the next season's fruit. Black Cluster does not grow so strongly as Sweetwater, and the best fruit is obtained on the long-rod system.

F., *Surrey.*

THE APRICOT IN SMALL GARDENS.

The fact that the Apricot is available alike for dessert, tarts, or preserving should place it a good second to the Peach among choicer fruits. It will, I think, be generally admitted that given a combination of adverse conditions in climate, soil, and situation it is hardly advisable to attempt its cultivation on anything like a large scale—at least, I know more than one gardener well up to the mark in fruit-growing who could make nothing of it given a heavy annual rainfall and a minimum of sun, but if the climate is all right and it is only the soil and situation that are wrong the necessary alterations can be made to meet the requirements of the trees. So far as the south of England is concerned, I have always found Apricots do best on a west wall, or, at any rate, an aspect anywhere between south-west and west, and for soil a good holding loam or as near that as possible. If the natural soil is light and sandy it should be worked out by degrees and something heavier substituted; good stiff road sidings and a little—a very little—cow-manure are a good compost. It seems almost superfluous to caution against cropping close up to the wall, but this is still done in some gardens, and it should, therefore, be known that the Apricot, perhaps of all fruits, cares least for this disturbance and opening up of the soil. An alley of 3 feet is not too much if the subsoil is open and absorbent, and it should be kept as hard as a road. Given neglected trees that are not growing under good conditions, the above treatment is to be recommended so far as the roots are concerned. For above-ground treatment branches badly cankered can be cleanly removed, whilst in the case of those only partially affected the bad part can be taken out and the place filled in with clay. At the same time it is always advisable to encourage any healthy growth below the sore, laying this in for one or two seasons, even if the trees are extra thick. Diseased limbs can by this means be gradually replaced by healthy growth. I can personally vouch for this, having more than once had to deal with a lot of badly cankered trees. I only grow two varieties, Kaisha and Moorpark, the former both the smaller and the earlier fruit. The Apricot being the earliest flowering among fruits renders it naturally very liable to suffer from spring frosts. For several seasons I had for Apricots a sort of makeshift protection in the way of Spruce boughs on poles, but finding that the fruit was much appreciated, have resorted lately to half-inch mesh fish-netting of double thickness, and this generally brings the trees safely through unless a sharp frost follows a day of sleet and rain and the blossom is wet. Our three chief enemies are grey aphis, blackbirds, and earwigs; the two former can be dealt with satisfactorily by insecticides and netting, but the earwig is very troublesome, and in some seasons it is a difficult matter to secure sound dessert fruit. In all gardens where old trees of the Apricot are inclined to gum and canker it will be found advisable when dealing with newly-planted stuff to avoid the use of the knife as much as possible a season or two, doing the necessary work of restriction by spring disbudding. E.

FRENCH STRAWBERRIES.

To the Editor of "Gardening Illustrated."

Sir,—In reply to "D. K." on this subject, I have grown Louis Gautier this season, and am well satisfied with it. In June I had a fine crop of fruit, some of them over 2 oz. in weight. Since then I have been picking in small quantities, and now have large, ripe fruits on the beds (November 11th). I have picked over a dozen ripe fruits since November 1st. The fruit is pinky-white in colour, and of delicious flavour; in fact, the blackbirds select it from all others. The autumn fruit-bearing runners will fruit again next season, but it is on the summer runners that a second crop of fruit is produced. I have planted several beds of it, and think it should be better known. I. Goody, F.R.H.S.

Belchamp St. Paul's, Clare, Suffolk.

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HOUSE AND WINDOW GARDENING.

LILIUM LONGIFLORUM.

OF L. longiflorum several varieties exist in gardens, but amongst them Harrisi has had by far the greatest share of attention paid to it. This variety is also known as the Bermuda Lily, which we recently illustrated.

L. longiflorum itself has long been known in this country, having been introduced from Japan early during the present century. Its name is now, however, a misnomer, its flowers being surpassed in length by those of L. neilgherrense, philippinense, and Wallichianum. Amongst other more prominent varieties of L. longiflorum, besides those just mentioned, may be named Takesima, the principal distinctive feature of which is the purplish tinge that exists in the exterior of the blossoms, especially when in the bud state. In the variety albo-marginatum the leaves are clearly edged with white, but the flowers are the same as in the ordinary form, but are sometimes rather more satiny in texture. A very distinct variety of L. longiflorum is formosanum, introduced from the weather prove showery, the yellow pollen stains the spotless purity of the blooms, and, moreover, in showery weather the tube splits and the flowers present a ragged appearance.

As L. longiflorum and its varieties readily submit to pot culture, great numbers are grown in that way. The bulbs should be potted as soon as received in a good open loamy soil, with which a little well-decayed manure has been incorporated. They may then be placed in a spot sheltered from very heavy rains (if in a frame plenty of air must be given them) till signs of growth make their appearance above ground. If required to bloom early, the most forward may then be shifted into a warmer structure—say a good light house in which the winter temperature ranges from 50 degs. to 60 degs. Treated in this way the first lot will bloom in March, and by introducing occasional batches a succession of blooms may be had till they open on plants out-of-doors. The long-tubed forms, either eximium or Harrisi, are much more amenable to forcing than those of the ordinary type. The sized pots in which they should be placed will depend upon the purposes for which they are required;

The long-tubed Lily (Lilium longiflorum) in a vase. From a photograph by Mrs. Martin, Bournbrook Hall, Birmingham.

island of Formosa. This possesses several features so well marked as to almost, if not quite, entitle it to rank as a distinct species. It has more the character of L. philippinense than that of longiflorum, being a slender-habited plant with narrow leaves, but the flowers, instead of being very long, as in L. philippinense, are shorter and rather more widely expanded than in the other varieties of L. longiflorum. They are pure white within, but tinged with purple on the outside. Another variety is Wilsoni.

The culture of L. longiflorum and its varieties is comparatively easy; while many Lilies are difficult to deal with, these can be not only grown and flowered well, but increased to almost any extent. If planted out-of-doors the most suitable soil for them is a good, open, sandy loam, in a well-drained, but, at the same time, not dry spot. The bulbs should be at least 6 inches below the surface, and if the soil is at all holding a good plan is to surround them with sand. In common with all other Lilies, these are most effective when arranged in bold masses or clumps, instead of being dotted singly here and there. To the outdoor culture of these Lilies a couple of objections might be raised—viz., should the for a good-sized single bulb a pot 5 inches in diameter will be needed, while three bulbs in a 6-inch pot form useful little specimens, but, if required, large pots can be filled with a number of bulbs, and thus form large clumps. The relative sizes of pots refer, of course, to ordinary bulbs, and not to the very large bulbs of L. Harrisi, that are imported from Bermuda, some of which will fill a pot a foot in diameter with roots. Thorough drainage is as great a necessity in pot culture as in the open ground; the roots must not on any account be allowed to become dry; when well drained copious supplies of water can be given without danger. When the buds begin to swell weak liquid-manure will be of service. The greatest enemies of these Lilies are aphides, which increase most rapidly, and not only injure the foliage, but cause the buds to become deformed, so much, indeed, that unless checked very few flowers will open properly. Fumigation, or dipping in Tobacco-water, will kill these pests. L. longiflorum and its varieties can be quickly increased to an almost unlimited extent. When growing freely, not only does the principal bulb often separate into two or three, but minor offsets are also produced, and the buried portion of the stem is generally thickly studded with small bulbils, that rapidly increase in size when detached from the parent plant, and soon become strong enough to flower. Another way, and one that has been largely followed in the case of Harrisi, is to strip off some of the outside scales, an operation that can can be done without injuring the bulb in any way. These scales should then be laid in pans of light, sandy soil, and just covered with the compost. If placed in a warmish structure they will form small bulbs by spring, when they have still a season's growth before them till autumn sets in. The smaller scales may be planted entire, and the larger ones separated in the middle without any ill effects. H.

How to grow the Chinese Sacred Lily.—Will you please advise me through your valuable paper the proper way to grow a Chinese Sacred Lily bulb? I have heard that it looks very well put in a bowl of water, with small pebbles. I have put some Sphagnum Moss as well around it. I should like to know if it is right or wrong?—LILY.

*** A few beach stones that have been thoroughly cleansed from saline matter are placed into a shallow vase or bowl. The Narcissus bulb is placed upon these, and its roots soon ramble among the stones, thus securing a hold from which it may grow upright. Let the water just touch the base of the bulb, and either add a few pieces of charcoal to maintain purity or drop a very little Condy's fluid in occasionally. Any greenhouse or warm room will grow this pretty Narcissus.

Crimson Chrysanthemums for decoration.—Of all winter flowers there are few more popular than the crimson Chrysanthemum, with its blue-green leaves and gold-lined petals. There are so many varieties that one scarcely knows what to choose, for it would be difficult to say which were the prettiest, the small close-petaled ones or those of a freer character. I think that they are both equally decorative, for their deep colour is in perfect harmony with some rich brown pottery and in splendid contrast to a deep blue bowl.—A. E. C.

Plants, creepers, and shrubs for garden.—What are the best perennials and hardy shrubs and creepers for an outlay of small amount and for a new beginner? The soil is rather heavy, clay under, has been turf, but the latter removed for building purposes. Is the Scented Myrtle an outdoor plant, and would the Thorn Creeper be suitable for an ugly boundary wall (low, 5 feet), facing a window? Garden elevated, about highest point of midland tableland, winds strong.—REX.

*** A few good, cheap, hardy plants: Phloxes of sorts, Irises of sorts, Delphiniums, Pentstemons, Campanulas, Pinks, Anemones, Pæonies, Michaelmas Daisies (Perennial Asters), Lilies, Hypericums, Heuchera sanguinea, Pyrethrums, Statice (Sea Lavender), Genistas, Gaillardias, and Doronicums. The undermentioned shrubs are very hardy, ornamental, and cheap: Prunus triloba, Olearia Haasti, Berberis Darwini, B. stenophylla, Ribes Gordonianum, Spiræas, Weigelas, Viburnum Tinus, V. plicatum, Escallonia Philippiana, Daphne Cneorum, D. Mezereum, D. Mezereum autumnale, Lilacs, Rhododendrons, Azaleas, Kalmias, Ligustrum sinense, L. lucidum, Cytisus albus, C. purpureus, C. præcox, Hibiscus of sorts, Indigofera Gerardiana, Cydonia japonica, Buddlea globosa, Choisya ternata, and Philadelphus (Mock Orange). Amongst creepers the following would suit you: Ercilla spicata, Clematis Jackmani, Jasminum officinale, J. nudiflorum, Ivies, Ampelopsis Veitchi, Bignonia radicans, Passiflora cœrulea Constance Elliot, Wistaria sinensis, and Cotoneaster microphylla. Cratægus Pyracantha is not suitable for a low wall. It is much too vigorous. Use Cydonia japonica and Raphiolepis japonica.

Mild weather in North Devon.—We have had some very mild weather lately around Rideford, and I thought perhaps it might interest readers of GARDENING to learn that yesterday (Nov 9) I was able to pick in a wood some wild Primroses, Wood Violets, and wild Strawberries, which I think is rather out of season, considering we are so near Christmas.—ARCHIE LEY, *Rideford.*

EVENING PRIMROSES.

The Œnotheras or Evening Primroses form a large and very important section of our summer and autumn-blooming plants. They are mostly

Œnothera marginata.

confined to North America, the chief exception being Œ. taraxacifolia, which is Chilian. All are perfectly hardy and as a rule easily grown. From early April until the autumn frosts set in some few of the species will be found in flower, almost dazzling the eye with their masses of rich golden-yellow, white, or rose-tinted blossoms. Their fault, if fault it be, is, as their name implies, that of opening their beautiful flowers chiefly in the evening. This, however, is by no means general, and some of them will be found that open their dazzling flowers during the day. The annual species, with the exception of Œ odorata and its varieties, may well be dispensed with from the flower garden. They are often troublesome from self-sown seeds, and none of them can be compared with the perennials and biennials for beauty of form or colour. The place for robust growers will be the wild garden and the shrubbery border. Œ. Lamarckiana (see cut) is perhaps the most useful for this purpose. The only thing to guard against is the numerous seedlings, which should be thinned out regularly during late autumn or spring to 2 feet or 3 feet apart. Those like speciosa, linearis, and fruticosa will be found admirably adapted for the mixed borders, and those of the marginata section make an interesting and charming display on the rock garden, for which they are peculiarly adapted.

Amongst the species not detailed below, and which will be found valuable either for the rock garden or mixed border, the following may be noted: Œ. chrysantha, yellow; Œ. rosea, rose; Œ. pumila, yellow; Œ. riparia, yellow; Œ sinuata, pale yellow, turning to rose; Œ. Drummondi, white and yellow; Œ. tenella (an annual), purple; Œ. densiflora (annual), purple; bistorta, etc.

Œ. albicaulis.—This is little more than a biennial; at any rate, it has proved with us a very short-lived plant, though well worth the trouble of propagating annually by seeds. The stems are erect, about 1 foot or 1½ feet high, branched on the upper portion of the stem, smooth, shining, and usually of a greyish-white. The leaves are narrow, entire or irregularly toothed. The flowers are produced in the axils of the upper leaves, white, becoming pink with age. It is a native of the barrens along the Platte, Saskatchewan, etc., and is a useful species for the rock garden, where it flowers in the early summer.

Œ. biennis is not much grown as a garden plant, although few biennials are better suited for naturalising in woods and shrubberies. Its variety grandiflora, better known perhaps as Lamarckiana, is the one usually seen in flower in our borders. The whole plant is more robust, and the flowers are larger and much finer than those of the type. It is an excellent border plant, singularly beautiful in large masses, and well adapted for the wild garden or shrubbery, as it seeds itself in the greatest abundance. It is easily increased by seed, which should be sown annually to keep up the stock. Throughout North America, flowering June to August or September.

An Evening Primrose (Œnothera Lamarckiana) in a Sussex garden. Engraved from a photograph sent by Mr. W. Herrington, Cuckfield.

Tufted Evening Primrose (Œnothera cæspitosa).

Œ. cæspitosa is perfectly hardy, very easily managed, and a remarkably beautiful free-flowering species. The flowers are large, white, turning to a delicate rose colour with age. It is found on the clayey calcareous slopes of the slate hills of Upper Platte, but rare. It is a very distinct and beautiful species nearly allied to Œ. acaulis.

Œ. fruticosa.—This species and its two or three varieties are among the very finest of our hardy herbaceous perennials. They rarely exceed 2½ feet or 3 feet in height, and all through the summer and autumn bear a profusion of the most delightful golden-yellow blossoms. The variety Youngi, which is also called glauca, is represented in gardens by a taller form of Œ. fruticosa. So hardy is Œ. fruticosa and its varieties that they go on flowering after the first frosts in autumn, and even our hardest winter leaves them untouched. It well repays cultivation, and the clumps should be divided every second year and planted into good rich soil. It may also be raised from seeds, which ripen freely. It is a native of dry barren soil throughout North America, and flowers with us from June until the frosts appear in autumn.

Œ. linearis.—A slender-growing perennial, found abundantly in dry, sandy places from Virginia to Florida, North Carolina, etc., flowering in our borders from April until July. It rarely exceeds a foot or so in height. The flowers, which are comparatively large, are of a soft pale yellow and fragrant, more so than in any of the other species we have grown. This will be found a useful plant for the rock garden, where in rich free soil it forms fine tufts.

Œ. marginata, known also in gardens as Œ. eximia, is admirably suited for the rock garden or the front row of the mixed border. Even when luxuriant it rarely exceeds 6 inches to 10 inches in height, and when in free, rich soil it will in one season cover a large extent of ground. It is an extremely free bloomer, the individual flowers measuring 4 inches to 5 inches in diameter, white, changing to rose or pink as they become older, and in the evening emitting a most delicious Magnolia-like scent. It increases rapidly by suckers or underground stems; these often travel a long distance and form tufts of large, toothed, or jagged leaves. All through June, July, and August this plant is charming in the evening. Cuttings roots readily if taken with a piece of the root. Native of the Rocky Mountains of Upper California, Missouri, etc.

Œ. missouriensis.—A low-growing perennial from the dry hills throughout Missouri and on the Canadian river. The flowers are large and of a soft sulphur-yellow; the leaves thick and leathery, narrow, and of a light shining green. It is readily increased by division or cuttings, and rarely ripens seed in this country—at any rate, it never has done so with us. It thrives best in a rich sandy soil, and if growing on the border will be all the better of a few stones buried round the neck of the plant. Its flowers, produced from June to August, although best in the evening, are often open in the daytime. Œ. macrocarpa is a synonym. There is also a broad-leaved form known as Œ. m. var. latifolia.

Œ. speciosa.—A charming species, producing an abundance of large white blossoms from April until September. It is an excellent rock garden plant, where on dry sunny places it makes quite a feature. The flowers, at first white, change with age to a delicate rose. The stems are erect, growing from 1 foot to 2 feet in height. It is a native of Red River, Arkansas, Texas, etc.

Œ. tanacetifolia.—A comparatively rare Californian species, belonging to the acaulescent section and perhaps most nearly allied to the Chilian Œ. taraxacifolia, which it resembles very much in habit and leafage, with the exception of the toothing being carried out to the point instead of only two-thirds, as in Œ. taraxacifolia. It rarely exceeds 4 inches in height and does not run like Œ. marginata. The

flowers are golden-yellow and borne profusely throughout the early summer on short stems from the rosette of leaves. It is a neat species, well adapted for the rock garden.

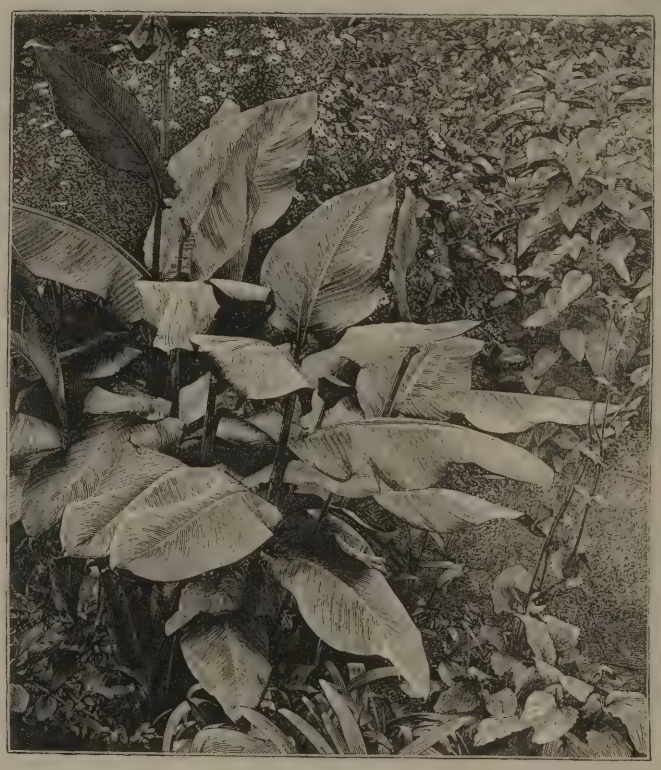
Œ. TARAXACIFOLIA is well-named, as it is readily recognised by its Dandelion-like leaves. Like the last, it belongs to the acaulescent section and makes a very effective rock plant when given a rich, free soil, and where its trailing stems can overhang a ledge. The flowers are large, varying from 2 inches to 4 inches in diameter, white when first open, but becoming pink with age. It is a native of Chili, and may be readily increased by division or by cuttings. Œ. acaulis is only a variety of the above with smaller flowers.

Œ. TRILOBA is usually said to be an annual, but with us under cultivation for many years it has not only proved perennial, but perfectly hardy and one of the most free flowering of the genus. It has a dense habit of growth, the stems short, the rosette of leaves lying on the soil in most cases. The flowers are larger than in Œ. fruticosa, yellow, very fragrant, and produced from early April until the frosts come. The flowers expand mostly in the evening, but they are often open and the plant quite attractive at midday. It is a native of Arkansas, and is readily increased by seed, which ripens freely. D.

OUTDOOR PLANTS.

CANNA IRIDIFLORA EHMANNI.

THERE are few Cannas more effective in the garden than the subject of the accompanying illustration. It is true that its flowers are somewhat smaller than those of the new race of Cannas lately introduced, and that their colour is not so vividly striking as the glaring scarlets and brilliant yellows of some of the novelties, which are, indeed, particularly handsome; the tint of its blossoms, a bright cherry-lake, is, however, very charming, and one that is rarely met with in the open. Plants strongly grown in deep, rich soil often attain a height of over 5 feet, the flowers, which are drooping, being borne from 6 inches to 1 foot 6 inches above the highest leaf. Were this Canna flowerless instead of possessing, as it does, an attractive blossom, it would be well worthy of culture owing to its exceptionally fine form, that fits it to perfection for associating with other plants of noble outline in the wild garden or in sub-tropical collections. The leaves are, for a Canna, very large, often reaching a length of close on 3 feet. The plant figured measured to the top of the flower-spike 5 feet 7 inches, so that the relative size of the leaves can be easily judged. The drooping habit of the leaves is also a point in its favour, as it gives to the whole plant a far finer symmetry than if, as is usually the case with Cannas, the leaves were erect. In South Devon this Canna will generally live through the winter in the open ground; in fact, I know of one plant that has not been moved for several years. This, however, is growing in light soil. In heavy soil, such as that of my own garden, I always lift and bring on the plants under glass before planting out, this method producing an effect much earlier in the summer than is possible where growth has to be made entirely in the open. The richer and deeper the soil the finer will be the growth, and liberal doses of liquid-manure will be appreciated by the plant when in robust health. In dry weather the hose should be turned on to the roots for several minutes at a time. In proximity to water the plant usually exhibits the greatest luxuriance. The one figured was growing within 4 feet of running water. F.



Canna iridiflora Ehmanni.

Poppy Anemones from Ireland.—Mrs. Smyth, of Toborcooran, co. Antrim, thinking it might interest the Editor to see blooms of her seedling Anemones sown first week in April, 1897, encloses a sample, as they are remarkably fine this year, and coming into bloom earlier than usual. The strain is commonly called "St. Brigid."

*** Very charming, the flowers varied in colour from deep purple to white. Some very double, others single. These forms of Anemone coronaria are bright indeed!

SIMPLE FLOWER BEDS.

IT is a great pleasure to know that people are beginning to see the folly of the bedding out system in the flower garden, and that they are not content with looking on empty flower-beds for at least eight months out of the twelve as formerly.

Perhaps this is due in a great measure to the beautiful hardy plants which have been introduced during recent years, and of the better way of using them in the flower garden.

Not long ago it was the usual thing to see such beautiful and hardy plants as Delphiniums, Phloxes, Pæonies, and Rudbeckias planted in lines or dotted singly about the borders. But in this way it was impossible to judge of their true beauty.

Now, however, we use them in a more sensible way—viz., by what we call grouping or placing a dozen or more plants in irregular masses or groups. By so doing a far better general effect is obtained and the true beauty and value of the plant is intensified.

This use of them also led us into another way of employing these hardy plants—viz., planting whole beds of one kind, and covering, "or carpeting as it is called," the bare soil beneath them with other dwarf and hardy plants, of which there are many.

The following are descriptions of two or three simple but most effective beds, which will give the greatest satisfaction:—

PÆONIES.—If a bed of almost any shape or size is planted with the late-flowering Pæonies, commonly called French Pæonies, at about 3 feet from plant to plant, and a good sprinkling of Narcissi princeps or Sir Watkin planted between them, and the whole bed surfaced with Sedum glaucum or Antennaria tomentosa, there will be two very fine displays during the spring and early summer. These late-flowering Pæonies have bright crimson stems and start into growth early in the year, therefore the large bright yellow flowers of the Daffodils intermixed with these crimson stems and leaves must tell their own tale. Again, in June we have the brilliant flowers of the Pæonies, which are of the most varied and brilliant colours, from pure white to the darkest crimson and intermediate shades. A second bed of an even more simple character is formed by Genista præcox, 3 feet from plant to plant, and carpeting the soil with Aubrietia græca or purpurea. Although this Genista is more strictly a dwarf shrub, it is well suited for planting in this way, and produces the most pleasing effect.

A third bed is produced by planting it with the different kinds of Phloxes in the following way:—The early summer or June-flowering kinds are much dwarfer than the late summer ones, and are known under the name of suffruticosa. These should be planted 2 feet apart, and the space between them filled in with such dwarf varieties as ovata, setacea, and atropurpurea. These are dwarf trailing charming little plants, which soon cover the whole surface, and are covered with bright-coloured flowers—ovata, bright rosy-purple; atropurpurea, rose, with deep crimson eye; setacea, of a nearly white flower. I do not recommend mixing these dwarf kinds; I would rather keep to one variety in each bed. They flower simultaneously with the suffruticosa varieties, and therefore produce a charming display. I could give many other instances similar to above where the most effective beds are produced by hardy plants.

T. ARNOLD.

POPPIES.

IT would seem that there is a growing fancy for gorgeous-hued flowers, although their beauty is of a transient character, and Poppies in variety may claim to be a sort of miniature edition of the Pæony, although some of them equal, even if they do not exceed, the largest Pæonies in size. The varieties of orientale and bracteatum, for instance, would, I suppose, produce the largest flowers to be found in the garden. These, I think, show to the very best advantage in bold clumps in the front of shrubberies, and if they can be planted on the Grass, so that a bit of green shows between them, so much the better. A difficulty is often found, where rabbits are troublesome, of providing for the wild garden without the expense and unsightliness of wire netting. I should think the Poppies, like Foxgloves and Daffodils, would be among the few, the very few, plants that rabbits will not touch. Alike in height of plant as in size of flower, these Poppies are on the big side, although they vary considerably. The mention of Poppies and a thought of the wants of the wild garden led to the mention of the large types, but it was P. nudicaule and its varieties of which I was thinking when starting the comparison and similarity between Pæonies and Poppies, and although the annuals, such as the best varieties of somniferum, exceed them in size and brilliance, for graceful beauty, purity of colour, long-sustained flowering, and greater duration in a cut state, the Iceland varieties hold their own remarkably well. June is a good time to sow. The plants can either be pricked out for a time or they can be thinned early, a little fine soil being put in among those that are left, these being transferred when convenient to permanent quarters. The Poppy can hardly be put out of place, and a large batch I have for cutting is growing on some narrow borders, filling up any space there is to spare between bush Apples. It is a sign of the increasing favour with which such flowers are regarded to find them very largely in evidence in the most tastily arranged dinner tables; in fact, together with the annual Poppies, Sweet Peas, large-flowered Marguerites, and single Gaillardias, they are the best things for such work. E.

ORCHIDS.

ACINETAS.

Although only a small genus of Orchids, the Acinetas known in gardens are, with scarcely an exception, well worthy of cultivation. During July and August, when the best of them are most frequently to be seen in bloom, there are few Orchids more welcome than they are, not only because of their large and striking racemes of handsome flowers, but also for the interest which attaches to their curious method of flowering, as is hereafter described. The flower racemes in every species known to me are pendulous, issuing from the base of the pseudo-bulb. As a rule they push straight downwards through the soil, coming out through the bottom of the basket in which the plants are growing. More than once I have noticed plants growing in pots where the flower-spike had pushed through the soil and drainage and found its way through the hole at the bottom, the large raceme of flowers presenting in that position an extremely curious appearance.

In regard to their cultivation, Acinetas present no particular difficulty. They should, on account of the peculiar method of flowering, be grown exclusively in baskets, and for the same reason large flat pieces of potsherds for drainage should not be used, preferring instead rather large lumps of charcoal, arranged so that the spike has no difficulty in pushing between them. I have seen Acinetas described as shy flowering, but my experience with them has been the contrary, healthy plants flowering regularly every year. I believe that this description of them has arisen through their being so frequently grown in pots, for, notwithstanding the marvellous knack the flower-spike has of finding an outlet, I have on several occasions noticed the remains of old spikes curled up amongst the crocks in pot-grown plants. Above the drainage a layer of good Sphagnum should be placed, using, finally, as a compost sound peat-fibre and Sphagnum. On account of the inadvisability of using much drainage, it is better to select baskets that are rather broad and shallow. From March to July or August the plants may be grown in the East Indian-house, the coolest part of which is preferable. If such a position be not available the intermediate-house will do, and in any case during the time the plants are in flower and at rest they should always be kept in this house. Water is needed in abundance during active growth, but after flowering the supply should be gradually reduced until in winter no more is needed than will keep the pseudo-bulbs and leaves plump and fresh. They like a position near the glass, but should be carefully guarded from the hottest rays of the sun. When in flower it is, of course, necessary for them to be suspended from the roof.

A basket Orchid (Acineta Barkeri).

The following are the sorts generally grown :—

A. Barkeri (see cut) was first flowered in this country in 1838 by Mr. Barker, whose collection of Orchids near Birmingham was at that period one of the most renowned in England, and in honour of whom Lindley gave it the name it bears. The last specimen I had in bloom bore a raceme of nearly twenty flowers, which were bright yellow, spotted with brownish-red.

A. chrysantha.—This is one of the rarest of Acinetas. The raceme is pendulous, as in the other species, the flowers being bright yellow, the lip alone heavily blotched with crimson.

A. densa.—This species and A. Humboldti are probably the best known in gardens, yet neither of them can be described as other than comparatively rare Orchids. A. densa was introduced from Costa Rica about 1850, having been discovered by Warscewicz. It carries (generally during the month of August) a long raceme of handsome flowers, each of which is 2 inches across. They are somewhat cup-shaped by reason of the incurving of the sepals and petals, which also overlap each other. The sepals are entirely of a rich yellow, the petals, which have the same ground colour, being spotted with brownish-crimson, a character that is still more markedly present in the lip. All the parts are singularly thick and fleshy in texture, and the flowers remain in good condition about a fortnight. The raceme, as a rule, is a little over 1 foot long and carries sixteen to twenty flowers.

A. Hrubyana is a little-known species, the flowers being white, with a few purple spots on the lip.

A. Humboldti first flowered in March, 1842, carrying a spike 2 feet long. In the typical form of the species the flowers are reddish-brown, spotted with dull purple; in the variety fulva the ground colour of the sepals and petals is a tawny-yellow, and a brighter yellow on the lip. A variety known as staminea has pale straw-coloured flowers. All the forms are extremely handsome, but, unfortunately, the flowers do not last many days in perfection.

Other species which may be mentioned as completing the list of known Acinetas are sulcata, erythroxantha (occasionally seen in cultivation), Schilleriana, cryptodonta, and sellaturcica. None of them are of importance.

B.

Orchids in greenhouse (*Novice*).—With proper care and attention the following Orchids would do very well in your greenhouse, where a temperature of 55 degs. is maintained by night: Cattleya Trianæ, C. Mendeli, C. Mossiæ, C. Bowringiana, C. gigas, Lælia anceps, L. autumnalis, Cypripedium insigne, C. Leeanum, C. Spicerianum, C. villosum, C. Boxalli, C. Schlimi, C. Charlesworthi, Miltonia vexillaria, M. spectabilis, M. Moreliana, Cœlogyne cristata, Cymbidium eburneum, C. Lowianum, Epidendrums, Sobralias, Odontoglossum citrosmum, Oncidium aurosum, O. splendidum. There are many more varieties suitable to the same temperature, but as those mentioned are the easiest to cultivate we would advise you to commence with them first. Closely follow the cultural directions given in these columns and you should find no difficulty in growing many of these beautiful plants to perfection.

Orchids for a conservatory (*E. H. S. E. V. W.*).—If you wish to be successful in growing Orchids in your conservatory we would strongly recommend you to remove the concrete floor. It is well known amongst experienced Orchid cultivators that floors which are paved with tiles, bricks, cement, concrete, etc., are one of the causes of so many failures with these plants. There is nothing better for the welfare of Orchids than the natural soil, and over this you could place a lattice woodwork to walk upon, or, better still, a neat iron grating. The following Orchids are suitable for growing in a winter night temperature of from 45 degs. to 50 degs.: Odontoglossum crispum and its numerous varieties, some of which are pure white, others spotted and marked with red and brown on the sepals and petals. The principal flowering season of this popular and well-known species is during the spring months, but where numerous plants are grown there are always a few plants in bloom throughout the whole year. The same remarks as to the time of flowering, etc., apply also to Odontoglossum triumphans, O. Halli, O. cirrhosum, O. gloriosum, O. oluteo-purpureum, O. polyxanthum, O. Andersonianum, O. Wilckeanum, O. hystrix, O. mulus, O. sceptrum, O. Pescatorei. All of these thrive best when planted in a mixture of peat and Sphagnum Moss, using well-drained pots that are small in proportion to the size of the plants. Such Odontoglossums as O. Rossi, O. Cervantesi, O. Humeanum, O. aspersum, O. Krameri, and O. Oerstedi, thrive best in shallow pans that may be suspended close to the roof glass. There are many Oncidiums also suited to pan culture, as O. dasytile, O. concolor, O. pubes, O. crispum, O. Forbesi, O. varicosum, O. Brunlessianum, etc. For pots: Oncidium macranthum, O. lamelligerum, O. serratum, O. superbiens, O. Marshallianum, O. loxense, etc. Try also Sophronites grandiflora (scarlet), Pilumna fragrans (white), Maxillaria grandiflora, M. Sanderiana, M. venusta, Masdevallia Harryana, M. Lindeni, M. Veitchiana, M. ignea, M. Davisi, Zygopetalum maxillare, Disa grandiflora, Epidendrum vitellinum. These all thrive very well in pots. It would be impossible to give the colours of the various species and varieties, also their time of flowering, in the space allowed in these columns. All of the Orchids above enumerated may be purchased at a very cheap rate, but we cannot give you the exact cost of each particular variety, as the prices vary according to the quantity of plants there are in the market.

Spathoglottis Fortunei.—This singular terrestrial Orchid is now in flower, the tall, hairy spikes of yellow, brown-tipped blossoms being very pretty and distinct. It is best cultivated in pots, which should be well drained, and the compost may consist of equal parts of peat or leaf-soil, fibrous loam and chopped Sphagnum, plenty of rough crocks and charcoal being mixed with this to keep the whole open. There is no need to elevate the plants above the rim of the pots and the compost may be finished a little below, as in ordinary potting. When the growth is well on the move in spring plenty of water is necessary; during winter, after all the leaves have fallen, the roots may be kept dry.

ROSES.

AYRSHIRE AND EVERGREEN ROSES.

No words can convey any idea of the beauty of these lovely rambling Roses, especially when they are met with growing in their natural wild profusion over some old ruins or rocks. Grand specimens can often be seen clambering over pretty thatched cottages in many a village. Their culture is of the most simple character. Like all Roses, they require good loam and an abundance of it. I fear that, on account of the character they enjoy of being such free rambling Roses, their need of good soil is not sufficiently studied. It should always be borne in mind when planting creepers on walls that builders are by no means gardeners, and the soil immediately near walls should be viewed with a very suspicious eye. In the majority of cases this soil is of the most wretched description, and it is the best economy always to replace it with several loads of good pasture loam. This, combined with good drainage and watering with liquid-manure in May and June, and again after flowering, should produce specimens of climbers that one could really be proud of.

These Ayrshire and Evergreen Roses are the ideal clambering species. They will produce huge shoots in a season which the following year are borne down with the weight of bloom. Very little, if any, pruning is needed. Avoid overcrowding of the shoots. Care should be taken in the first instance to train the main shoots in a palmate manner, which will give the plant an opportunity of obtaining plenty of sunshine in the centre to ripen the growths and thus ensure a full crop of flowers. I am aware that these Roses are extensively planted each year, but if we visit any large garden we can see many a position that, if covered with these lovely Roses, would still further add to the beauties of the place, especially in the month of June. What a beautiful sight it would be to see a fine gateway leading to the mansion wreathed with the snowy white Félicité-Perpetue, the purity of the flowers considerably intensified by the beautiful glossy green foliage, or the main walk spanned at intervals by arches, on which the several pink and white varieties could be harmonised together.

There are no plants more suitable for covering rustic arbours, stumps of trees, or climbing up trees than these free-growing Roses. I am often surprised they are not more frequently seen running over rockwork. If planted on the top where a sufficient depth of soil could be obtained and their pendulous shoots allowed to hang over the rocks they would make a beautiful picture when in full bloom. Again, for covering banks or mounds they are unrivalled, and as weeping Roses, budded on 5 feet to 6-feet stems, they are also very fine. I lately saw a fine old specimen of Ruga on the high road at Forty Hill, Enfield. It is growing in a cottage garden and forms a natural arbour in itself. The tree must be forty or fifty years old, possibly more. Growing as it is on the side of a hill is evidence of the benefit of good drainage, which, of course, such a position would afford. This fine old tree is one of the sights of the neighbourhood when in full bloom. In planting these Roses we should insist that they be on their own roots.

I append a list of the best varieties in each class: —

Rose Félicité-Perpetue and Clematis on an old archway.

AYRSHIRE.

RUGA.—Pale shell-pink, double, and perhaps the best of this group.

DUNDEE RAMBLER —White, semi-double.

VIRGINIAN RAMBLER.—Beautiful loose pinky-white flowers, most abundant bloomer.

SPLENDENS (or Myrrh-scented).—White, sometimes edged red.

ALICE GRAY.—White, delicately edged with pink, and it has beautiful foliage.

QUEEN OF THE BELGIANS.—White, pretty form. An exceedingly slender grower.

BENNETT'S SEEDLING.—Pretty double white.

EVERGREEN OR SEMPERVIRENS.

FELICITE-PERPETUE—Beautiful creamy-white. Certainly the most lovely of all.

MYRIANTHES RENONCULE.—Pretty double pink flowers. A fine variety.

PRINCESS MARIE —Double pink. This variety appears to retain its foliage much later than the other varieties in this section.

FLORA.—A beautiful variety which always appears to me to be a hybrid with the Teas. It has pretty red wood and fine glossy foliage, and the flowers are a lovely bright rosy-pink. It grows admirably in towns and it appears to withstand the smoke better than any variety I am acquainted with.

LEOPOLDINE D'ORLEANS.—White, tipped red, and double.

The above represent the best of each section. I should like to see more attempts made towards improving them. The one great fault, if it can be called a fault, is that they are summer blooming only. An effort should be made (by hybridising with autumnals, such as the Musk Roses, Alister Stella Gray and the Bourbons and Chinas) to obtain an autumn-blooming race of these beautiful typical rambling Roses. P.

THE WINTER PROTECTION OF ROSES.

THE following few notes are penned in anticipation of several queries upon this subject. The experience of one, or even two or three seasons, must not be taken as an infallible guide as to whether we shall protect or not. Growers of several years' standing differ very much in their ideas upon this point. One of our leading amateurs—a winner of the champion challenge trophy of the National Rose Society—whose garden is in the south, and by no means much exposed, protects his plants to a greater extent than any I am acquainted with, except it be another upon the eastern coast, who is almost invincible for Teas and Noisettes. But we have a great contrast to this in the case of one of our most successful northern growers, the Messrs. Cocker and Son, of Aberdeen, for example, who grow both Teas and Hybrids without protection of any kind. Near me is a field of young Roses, facing due north, and without anything to break keen winds. I have seen this field hard frozen for weeks at a time, yet the Roses always came through quite as well as others that were protected. From the above we might assume that the expense and trouble of protection are quite unnecessary. Roses are more hardy than Laurels and many of our flowering shrubs. But all plants are subject to influence from aspect, high or low situations, the presence of large bodies of fresh water, and the wet or dry condition of the soil. It would be folly to lay down any hard-and-fast rule, as each must give a little thought on his own account. A plant well in the open, and which has grown more hardy in constitution than its fellow in a slightly sheltered spot, will withstand several more degrees of frost simply because it has been growing in a hardy manner. In the open, too, Roses are seldom exposed to the keen draughts found between buildings and walls when the wind is in an unfavourable quarter. The whole surroundings are naturally drier upon high land, and this, together with the fact of better matured growth in such positions, has much to do with the apparent inconsistency of the effects of frost upon protected or unprotected Roses.

There is much to be said upon the selection of protective material. Why rotten manure should be so freely used for protecting the plants, when we consider that damp and wet are so prejudicial during extreme cold, has frequently puzzled me. The plants cannot need manure at that season, and yet many Rose growers still follow the old routine, and use a substance so retentive of moisture that they actually make use of the same for that purpose during summer. Whether upon high or low ground, I would discard rotten manure as a protective agent. Even if we use the lighter portions, or dry litter and leaves, among our plants, it soon gets sodden, or else blows away into the most sheltered corners of the garden, and consequently where it is least wanted.

Draw a little of the surrounding soil around dwarfs of all classes, and stick a few branches or twigs of Gorse, Fir, or other evergreen among the wood of tender varieties, especially upon the north and north-east sides. These will break, and protect from frost-laden winds, remain in the desired position, will not induce precocious growth (only to be cut back later by spring frosts), will be dry, are not unsightly, and can be removed in a very short time. With standards, a little straw or Bracken can be tied among and around the branches, pulling the head in fairly tight.

Have the material to hand, ready for immediate use when severe weather arrives, and do not go to the extreme of encasing the whole of your plants in straw. I know of a large amateur

who annually wraps a lot of the straw cases used for wine bottles around his plants. It is labour that might well be spent in other directions, and if my readers will give a little thought to their position they can easily afford the necessary protection at very little trouble and expense. P. U.

AUTUMNAL ROSES IN IRELAND.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

SIR,—I am only a grower of about 250 plants, but it may interest some of your readers to have my experience. I have before me as I write (November 10) a small table covered with Roses. The finest blooms are three exquisite ones of Mme. Hoste, which I find one of the freest autumnal bloomers. The freest of all is Viscountess Folkestone, and certainly the blooms we had a short time ago could hardly have been surpassed at this time of year. Many of them were some five inches across, and were the admiration of our friends. Mme Lambard, Hon. Edith Gifford, Mme. Cusin, Mrs. W. J. Grant, and Caroline Testout have also done well this autumn. We are within three miles of the General Post Office and due north, and I was told four years ago that Roses would not grow here. I have proved this not to be the case, as we have had thousands of blooms this year, many of them of exhibition standard. Care in planting and constant attention afterwards will go a long way towards making Roses thrive anywhere. E. B., *Dublin.*

Rose Alister Stella Gray.—Please tell me whether you recommend Rose Alister Stella Gray as an outdoor climber? It is not very hardy. But it is not named in your lists, "Selections for various purposes," in No. 973. I thought I should prefer the Rose to W. A. Richardson, a plant of which was offered me by a friend.—S. P. HAWES.

*** We did not name Alister Stella Gray because there are so many which, in our estimation, are better. It is a hardy, strong-growing variety, producing immense trusses of small flowers, not larger than a shilling, and with a deep orange centre; in fact, almost a miniature William Allen Richardson, but never entirely orange. Thanks for your interesting note; this has been an exceptional season for late autumn blossom outdoors. We do not know "Salamanders."

Pot-Roses *(Ferrum).*—Thanks for your note. Your selection of Pot-Roses is very good, but we should certainly include G. Nabonnand, both in pots and the open. Perle des Jardins is a good yellow, but Celine Forestier cannot be recommended for culture under glass. Medea, Mme. Hoste, Souvenir de Madame Sableyrolles, Gustave Regis, Marie Van Houtte, and Madame Falcot are all better. Reine Marie Henriette is our best deep red climber under glass, flowers as freely as Maréchal Niel, and produces long, pointed buds of a much deeper red than ever found upon this variety in the open.

Roses under glass.—I have ordered some Rose-trees (kinds suitable for buttonholes), and intend putting them into tubs or large pots when they come. Would it be best to put them in greenhouse (cool) at once, or wait till severe frost comes?—S. M.

*** Until severe weather threatens we would stand the Roses outside, and keep the wood sprinkled to avoid shrivelling.

Autumn-flowering Roses.—Please give me a list of the best to add to Souvenir de la Malmaison, Chinas, and La France, from which I have gathered largely to-day—1st November.—MRS. P.

*** The varieties which have flowered best with us late in the season are G. Nabonnand, Papa Gontier, General Jacqueminot, Marjorie, Perle des Jardins, Mme. Falcot, Dr. Grill, Homère, William Allen Richardson, and Mrs. Rumsey (H.P.).

Aster ericoides (Heath-leaved Starwort).—This Starwort is a pretty flower. It is one of the most distinct kinds, perfecting large sprays of its charming miniature blossoms—scarcely exceeding ½ inch in diameter—in a series of racemes on lateral growths, so that, when cut, a very beautiful bouquet of the plant is possible from a single stem. These plants are often tied too tightly to the stakes, consequently losing much of the beauty which is seen when they are allowed to develop their growths more naturally. This Aster has a dense habit of growth, is one of the most free-flowering, and rarely exceeds 2½ feet to 3 feet in height.—D. B. C.

THE GLADWIN.

THE bright orange-berried Iris used in winter decorations is the Gladwin (I. fœtidissima), which is a charming plant for the wilder parts of the garden, where it will grow into handsome leafy groups. It will grow about 2 feet in height, and if the flowers are quiet in colouring, unlike those of the only other British Iris (I. Pseudo-acorus), the Yellow Winter Flag of many a streamside, they are succeeded by showy berries. These are arranged in the rich brown pod which opens out with age to display the berries within. The stems are much used in winter decorations. There is a variegated-leaved variety which is distinct and pleasing. It does well in a room.

Group of the Gladwin (Iris fœtidissima). From a photograph by Miss Willmott, Warley Place, Essex.

Clivia miniata.—There are very few things more showy among greenhouse plants or more welcome than these. Flower when they will, there is always room for their bold trusses and distinct colours. Notwithstanding the many additions to this group, the original species is well worthy of culture. Indeed, quite recently in the Camellia-house of a private garden we noted some fine pieces pushing up handsome trusses, while the expanded flowers tended to relieve the monotony of the shrubs named, thus performing a twofold purpose.

Rhododendron Mrs. Heal.—This is one of the forms of R. multicolor and has pure white flowers in compact trusses. It is a very beautiful and useful variety, and is now flowering freely, as indeed it has been for some time past. A choice assortment of these dwarf hybrid forms is most useful in the greenhouse when in flower, and associates well with most things.

GARDEN PESTS.

Excrescences on Oak-leaves (*G. A. Haig*).—The little excrescences on the back of the Oak-leaves you sent are galls, often known by the name of spangles. Inside each is a small grub, which will in due course (having first become a chrysalis) in the spring turn into a gall-fly, known as Neuroterus lenticularis, which will attack the male flowers of the Oak and lay their eggs in them. The grubs, which are hatched from these eggs, feed on the flowers, and cause them to become small, round galls. These are called Currant-galls, from their resemblance to a bunch of Currants. From these galls emerge gall-flies, known as Spathegaster baccarum. They differ from their mother, who laid the eggs, in form in various particulars. They deposit their eggs in the undersides of Oak-leaves, and when the grubs hatch they form the spangle galls, so that the history of these galls is a curious one. The galls and gall-flies of two following generations are unlike, while those of alternate generations are exactly similar.

Root-gall weevil (*H.*).—I am surprised, after all the trouble you have taken, that you have not been successful in getting rid of this weevil. You had better at once pull up and burn all the affected plants. When the grubs are full grown they leave the galls and become chrysalides in the earth. Fallow the ground that has borne an infested crop, and during the winter keep it open as much as possible, so that the birds may have a chance of getting at them, and they will also be more likely to be affected by the weather. I suppose you are quite sure that it is the root-gall weevil that is attacking your plants? As to woodlice—toads are very fond of them and kill large numbers when they get a chance. Two or three toads would help you considerably. Small pieces of Turnip or Potato, boiled in water in which some arsenic has been dissolved, is said to poison

them. Bricks, tiles, pieces of turf, board, or slate, laid on the ground and allowed to remain untouched for a day or two, are capital traps, as the woodlice creep under them for shelter. Trapping may seem hopeless work, but if persevered in is very effectual. Be careful not to let any rubbish lie about, or stones or dead leaves, as the woodlice are sure to harbour under such things.—G. S. S.

Specks on Palm-leaves (*P. G.*).—The leaves of your plants are attacked by a fungus. Syringe or spray them with "Bordeaux mixture," made by dissolving ¾ lb. of carbonate of copper in a little warm water, and slake ½ lb. of freshly-burnt lime in enough water to make it about as thick as cream, then strain it through coarse canvas into the copper solution. The water from the newly-cemented tank cannot have anything to do with the disease. I should think the plants would do better with a warmer temperature at night.—G. S. S.

Destroying snails amongst Ferns (*A. G. P.*).—We well know the evil smelling snail you mention, and have destroyed it in the following way: Get a piece of coarse cloth that will allow of a very fine dusting of lime to pass through when shaken. Place a small quantity of freshly-slaked lime in this, and shake it over the crown of your plant. Very little should be used, and you must watch for the snails as they move, picking them off. You cannot kill them all at one application, nor can you use sufficiently strong measures without harming the Ferns. Trim off the fronds when ripened, cutting down close to the crown, and use the lime at intervals of a week. Small snails, also woodlice, are a great nuisance among young fronds, and do more mischief than any other insects. Do not over-water while not in growth, and only give sufficient moisture to cause the lime to fall into a dry and very fine powder.

Rose-leaves eaten (*Rose Leaf*).—The hollow stick has been filled with Rose-leaves by one of the "Leaf Cutter" bees, and it is a very pretty and uncommon example of their work. There are seven British species in the genus (Megachile) to which these insects belong. The commonest species is M. centuncularis, and is probably the maker of the nests you sent. These leaf-cutter-bees generally choose a dry bank, an old tree-stump, or a somewhat decaying post in which to make their burrows; but the bee which invaded your greenhouse saved herself the trouble of making any excavations by utilising the hollow stick and the space between the papers. The bee, having made or found a suitable place in which to make her nest, or rather series of cells, begins to line it with oval pieces of Rose-leaves, or sometimes she uses the petals of some suitable flower, such as a Poppy, instead. At the bottom one or more quite circular pieces are placed and round the sides are placed ten or twelve oval pieces, until a compact, thimble-shaped cell is formed. The cell is then nearly filled with a ball of pollen and honey, as food for the future grub, and on this an egg is laid. A fresh cell is then formed, the end of which fits into the mouth of the other—in this way a series of half-a-dozen or more cells is made. It is very interesting to see the bee at work cutting the pieces out of the Rose-leaves. She takes up her position on the edge of the leaf so that it is between her legs, and then begins to cut out the piece she requires with her jaws, holding on to it with her legs so that it shall not fall. When it is quite severed she flies off with it to her burrow. The amount of damage that these insects do is very inconsiderable; of course, the notched leaves are not ornamental, but I do not suppose the tree feels the loss in any way. These bees are about ½ inch long, and measure ⅞ inches across the wings, and are not unlike small honey-bees in general appearance; but the different species vary in size and colour. If you want to destroy them the only means that I can suggest is by catching the bees or destroying their nests.—G. S. S.

Destroying ants (*T. Ellam*).—As you say you have tried different methods of destroying the ants in your plant-houses, I presume you have tried trapping them with sugar and beer, treacle, or honey. If these means have failed you had better try and get at their nests. This may be a troublesome matter and involve pulling up some of the paving, but if you can so manage to be able to pour boiling water or a strong solution of carbolic-acid into the nest, and thoroughly soak it, you will kill the ants and destroy the nest. Ants will not work into a greenhouse unless there is some food for them, and very frequently they find that in the exudations from green-fly and scale insects. Are you sure that some of your plants are not infested with these insects? If a plant is much overrun by ants you may be certain that it is attacked by scale or aphides.—G. S. S.

Eradicating disease in Hollyhocks.—In reply to "Insignis" in GARDENING of November 6th, I give the following formula for the Hollyhock disease, which was given me by a gardener in Northumberland, who successfully discovered it, after in vain trying everything, he told me, even to scrubbing his plants with "whuskey." He told me to cut down to the ground in October and pick off every bit of green and bury it away, and then cover the stumps and root with a small heap of earth, like a mole-heap, and the plant would come up cured of the disease. I tried it last October, and though I killed half of the plants, the ones which came through the drastic treatment were healthy. So catching is the disease, that my friend told me if he went into a garden with disease he would not wear the same clothes in his own garden for some months, as he grew prize flowers. He told me he had successfully conquered the disease three or four times in his garden by the plan now described. I shall be glad if others will try how it succeeds on diseased plants.—E. T.

A question of terms.—On page 516 of GARDENING, November 6th, 1897, note on "Leaf-spot on Carnations," by "G. S. S.," liquid ammonia should have been specified. Through spraying Tomatoes with an almost similar solution I completely destroyed the foliage, having used ammonia fortis, which is, I believe, three times as strong. My recipe, the same as yours, simply made use of the word ammonia. Hence the mistake.—J. H. B.

*** "J. H. B.'s" note may be useful to others, but when the word ammonia is used in a recipe it of course means ammonia of the strength usually sold; using the word liquid would not help matters, as both the strong and weaker solutions are liquid. I am told by a very good authority that no chemist who was asked for ammonia would think of supplying anything but the weaker solution, and that the stronger one is never sold unless it is particularly asked for; so I suppose "J. H. B." asked for the strongest ammonia that was to be had, and not the ammonia of the British Pharmacopœa.—G. S. S.

Green-fly on Chrysanthemums (*J. Clarke*).—If your Chrysanthemums are under cover you can kill the green-fly with Tobacco-smoke or by vaporising strong Tobacco-water. If they are out-of-doors, or for any reason it is undesirable to fumigate them, syringe the plants or dip the affected shoots in the extract from 5 oz. of Quassia-chips, 3 oz. of soft-soap, well mixed in 5 gallons of water; or 4 lb. of soaf-soap dissolved in 6 gallons of soft water; when cold add 2 quarts of strong Tobacco-water.

Slugs in garden.—My garden is near a town, and is 1½ acres in size, including house. The place was neglected before I took it, and in less than two years the gardener and I have caught 16,000 slugs and snails, chiefly in spring and autumn. The largest "catches" have been during September and October this year, when we have caught thousands in the daytime by laying down good-sized heaps of Carrot or Turnip-tops and leaving them for a few days, then looking over them. Also I set heaps of bran and go round after dark with a lantern, catching a great many in that way and killing them at once in salt and hot water.—CORNISH

Destroying "Stinkhorn" fungus (*A. E. S.*).—In order to get rid of the "Stinkhorn" fungi, I should remove them as soon as possible, and take up the earth round them for a foot or so, and to a depth of 3 inches, so as to get rid of the spawn, which if left in the ground would very probably produce this fungus another year. The spawn is the fungus, properly speaking, and what is usually spoken of as the fungus is the flower or spore-bearing part. By taking away the spawn and destroying the spore-bearing organ before it has shed its spores you ought to be able to eradicate this fungus, which from its abominable smell is unbearable in a garden. Probably putting a small heap of gas-lime on the spot where the fungus grew would kill the spawn. From the spawn grows a white mass of the shape and of about the size of a hen's egg, and out of this is produced the stinkhorn.—G. S. S.

Spot on Dendrobium leaves (*H. B.*).—The spot on the Dendrobium nobile leaves is probably caused by too much water at the root, also by growing the plant in a highly heated structure with insufficient ventilation. If the plant has completed its current season's growth, remove it to an intermediate temperature, and afford water only when the new pseudo-bulbs show signs of shrivelling. The older leaves will then commence to turn yellow and fall away naturally. Nothing will check the spot coming in the other leaves if the constitution of the plant is affected. The Bouvardia leaf is infested with a species of scale. Lay the plants down on their sides, and well syringe the under-sides of the foliage with a strong solution of soft-soapy water, afterwards rinsing it off with clean rain water.—W., *B.*

Hollyhock diseased (*N.*).—The Hollyhock leaf you sent does not show any sign of the Hollyhock disease, as far as I can see.—G. S. S.

Grubs for name (*Violet*).—The grubs you sent are those of a small fly. We do not imagine that they would injure plants, and even if they would there could not be any harm in using the manure as a mulch, for the grubs will soon become chrysalides; at the same time, if they can easily be destroyed by giving a colony a blow with a spade we should not spare them.

VEGETABLE REFUSE.

THE value and necessity for a plentiful supply of manure is known to all gardeners, and as stable-manure is not always available for dressing the land, recourse must be had to other ways of obtaining the requisite amount of fertilising material. Now, vegetable-refuse, of which a great deal is formed throughout the year, but especially in the autumn and early months, may either be allowed to go to waste or can be converted into valuable manure. Of the materials which come under this heading, tree-leaves are amongst the most bulky and valuable. Now, November is a good time to collect them for the purpose in view. In doing this in parks and pleasure grounds, they are sometimes thrown here, there, or anywhere, so long as they are out of sight, and when deposited in this way they ultimately form small heaps of decayed matter which may be removed and used for some purposes in the garden in spring, but this kind of material alone is never good manure, and cannot compete with specially prepared refuse. As the leaves are gathered they should all be carried in baskets, wheeled, or carted to that part of the garden set apart for manure heaps, and this spot should be a general receptacle for them throughout the collecting period. At the same time all old Pea-straw, decayed leaves, and all kinds of Cabbage and Cauliflower-stumps, from which the heads have been cut, should be brought from the kitchen garden and thrown into a heap close to the leaves. Light stable-manure should also be brought here, and, indeed, everything else in the way of refuse. The whole should then be mixed up in one large heap to decay. As there may be a good deal of matter which would not readily decay, it is a good plan as soon as the heap has been made up to begin to make the top of it a receptacle for all kinds of slops and soap-suds from the dwelling house. This plan will enrich the leaves and induce decomposition. In about a month the whole should be turned over, keeping the freshest of the material to the bottom and the most decayed on the top. By January or throughout the spring this will make one of the finest heaps of manure anyone could desire for digging or trenching into vegetable quarters or dressing flower-beds. All the year round it is a good plan to make a point of gathering every kind of vegetable refuse in a heap by itself, and it is surprising how valuable it will be found in the course of time. Weeds or any other refuse containing a quantity of seed which would germinate in the ground where not wanted should never be mixed up with anything useful; but with the exception of weeds, stones, and wood, there is hardly any kind of refuse about a garden which cannot be converted into a useful manure.

H. B.

INDOOR PLANTS.

NEGLECTED PLANTS.

ACHIMENES.

THESE beautiful plants are now very rarely seen in our gardens, and even when they are to be found they are often treated in such a careless manner that they usually lack half the beauty which, with a little care, they would produce. It seems strange and difficult to understand how this neglect has come about, seeing that the culture is easy, and they are equally well adapted for hanging-baskets or for pots. They blossom at a season when the usual occupants of the greenhouse and conservatory are fading somewhat, and continue to produce a gay appearance for many weeks. As soon as the plants have done blooming the tubers may be put to rest for the winter, and thus space be made for those things which have been grown for winter decoration. The Achimenes are natives of South America, but the majority of the sorts now to be found in English gardens have originated there, being, for the most part, hybrids. Mr. Parsons, of Danesbury, near Welwyn, in years gone by, grew these plants remarkably well, and raised many of the best kinds in cultivation. Achimenes require stove heat to grow them well, but when they arrive at the blooming stage they should be gradually inured to a lower temperature; then they will continue to flower for weeks in full beauty in a cool conservatory, care being taken to shelter them from cold draughts of air. If a succession of flowering plants is desired, batches may be introduced at intervals of a month. Some time in February the little scaly tubers should be started by laying them thinly in a large frame or box, and covering them with about 1 inch of soil. The soil should be fairly moist, and the receptacle—be it pan or box—should be placed in a fairly light position, not too far removed from the glass, in a warm house. So treated, the tubers will soon begin to grow, and when the growths are 2 inches high they should be lifted and placed in their flowering pots or pans. They should be set out regularly and at equal distances apart, but not too thickly. I think pans are better than pots to grow them in, as in these larger heads of bloom are produced, and the pans occupy very little more space. Do not cover the roots deeper than 1 inch or 1½ inches. When the plants are 6 inches in height pinch out the ends of the growths. As soon as the lateral shoots begin to push out, each stem should be provided with a stick sufficiently long to last through the season, and they require attention in tying, so that each may be kept in position and afforded room for the due development of the foliage. Achimenes require an abundant supply of water to their roots when growing; hence the necessity for good drainage. Some growers frequently syringe these plants overhead. I, however, object to much syringing, having grown them quite free from red-spider, which is their greatest enemy, by an occasional dewing overhead and by keeping the atmosphere well charged with moisture. At all seasons of their growth they should occupy a position near the glass, or otherwise they become drawn and weak, and lose their lower leaves, which is a great disfigurement, and their flowers are then of less substance and lack colour. Whilst growing

WEAK LIQUID MANURE about once a week will be highly beneficial, and when the flowers appear, twice a week will greatly assist them. The soil should be good light turfy-loam and leaf-mould in about equal parts, about a sixth part of old sheep or some other well decomposed manure, and a liberal amount of sharp sand. After the flowering is past the plants should be removed to a frame and kept moderately moist until the tops have died down, after which the pots or pans should be laid upon their sides until the soil becomes dry, when the roots may be turned out and stored in dry sand for the winter. The tubers should be kept cool and dry, but it is not advisable to let the temperature around them fall lower than about 50 degs. at any time. If required for

HANGING-BASKETS, they should be planted just the same as for pots, only it is best to start them in their position at once instead of transplanting them. The baskets which I have found most effective I have grown bottom upwards until the plants began to show flower. I then hung the baskets in their proper position, dropped a pot of flowering plants into the empty pot which had been in the basket all the time, and had a fine display of bloom thereby. The slight turn which the points of the stems will take serves to bring the blooms into just the right position. In planting the baskets a nice admixture of colours may be obtained, as there are a good number of varieties; but care should be taken to see that the habits of the plants are similar when placed together, so as to avoid a patchy appearance.

B. H.

Dracæna seed, etc. (*P. L.*).—Dracæna seed should be sown as soon as it is ripe in sandy soil and placed in a brisk heat. Dracænas thrive well in yellow loam, mixed with leaf-mould, and just sufficient silver-sand to carry off superfluous water. A temperature of about 65 degs. to 70 degs. should be maintained in spring while growth is being made. Plenty of water should be given to the roots, and the syringe should be used freely amongst the foliage. The following is a short list of good varieties: Guilfoylei has narrow leaves, pale green, striped with white, and, in some cases, streaked with red; Terminalis is one of the most useful of all Dracænas, leaves bronze-green, edged with red. This is one of the best varieties for growing in a temperate house. Baptisti, leaves light green, marked with cream-white; Youngi has broad, spreading light green leaves suffused with deep red; Amabilis is a capital grower, leaves long, glossy-green, striped and margined with white and pale green; indivisa is almost hardy. Its long arching deep green leaves are very graceful. Willsi, Cooper, Mrs. Freake, Anerleyensis, and Frederici are also very good.

TREES AND SHRUBS.

Golden Elder not true in colour (*H.*).—Why so many people fail with this beautiful golden-leaved shrub may be attributed to two causes: (1) The soil being too rich and (2) the position not sufficiently exposed to the sun to ripen its wood thoroughly. This plant does not require very rich soil, as it succeeds better when planted in rather dry soil. To be seen in its true character a position exposed to the sun is absolutely necessary. A border sloping to the south suits it admirably. The plant should be pruned back hard each spring.

Shrubs for a new garden (*C. R. G.*).—Your garden is pleasantly situated, and if planted with taste could be made very interesting. No garden should be without a few arches on which to train climbing shrubs. The outbuildings and sheds might be covered with a close, quick-growing Ivy or Ampelopsis Veitchi, and the trellises would serve splendidly for such things as Berberidopsis corallina, Jasminums, Clematis, Roses, and Honeysuckles. Against the iron-railings and wire-netting plant any of the following: Cotoneaster Simmonsi, Pyrus japonica, P. j atro-coccinea, Ceanothus of sorts, Raphiolepis ovata, Escallonias, and Forsythias. The centre of the biggest piece of vacant ground could be turned into a Rose-garden, and the side borders could be planted with a selection of spring, summer, and autumn-flowering herbaceous plants. The following short list of hardy shrubs may be of some use to you. They are all hardy and free-flowering: Prunus triloba, Spiræas, Daphnes, Olearia Haasti, Berberis, Hibiscus, Ligustrum sinense, Weigelas, Shrubby Honeysuckles, Kalmias, Rhododendrons, and Azaleas.

Ivies (*H. Plant*).—In such a position we should recommend you to plant green-leaved Ivies. Two of the very best varieties are Hedera atro-purpurea and H. Emerald Green. The first-named takes on several very pretty shades of crimson and dark brown in the autumn, which it retains for the greater part of the winter. The second variety is rightly named, as it is deep green all the year round. Both are capital growers, and would give entire satisfaction You may put the plants in now, the distance between each being regulated according to the size of the plants; but we should say, roughly, that 5 feet would be ample. Any garden soil suits these free-growing Ivies.

Privet and Holly hedge (*H. Plant*).—Privet and Holly will succeed in your soil, but do not mix the plants. Use one or the other. The Privet is a fast-growing shrub, and soon makes a thick hedge, but it is also very hungry and evil smelling. The Holly, though not of such rapid growth, makes much the prettiest hedge. Use this in preference. Set the plants about 12 inches to 18 inches apart. Thuja occidentalis (American Arbor-vitæ), T. Menziesi, English Yew, and Quick would also prove satisfactory. The present is a suitable time to plant the hedge.

Strawberry-tree (Arbutus Unedo).—Just now this is one of the most striking and beautiful of hardy trees and shrubs in flower. It grows to a height of about 20 feet, and forms a well-balanced ornamental tree. Its white bell-shaped flowers are borne in panicles, and when properly expanded have a charming effect against the deep green foliage, and large red Strawberry-like fruits, which are borne very freely, It delights in a sandy, well-drained soil, and though perfectly hardy, prefers a sheltered spot. A. Unedo is suitable for planting on the outskirts of the lawn. A. U. hybrida also makes a capital tree for planting in a sheltered corner of the garden. It is more vigorous than the first named species, and its flowers are not only bigger, but are borne in larger panicles.—H.

Planting Pines (*S. R. H. G.*).—If you lift the Pines with good balls of earth, and do not expose them to the winds longer than is really necessary, you can plant them any time now. As the position they are to occupy is very exposed, see that they are planted firmly in the soil.

PASSIFLORA EDULIS.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

SIR,—The article in your issue of October 30th comes none too early. I have often wondered why this fruit is not obtainable in England regularly in its proper season, the summer. Eaten without any adjunct it is most cooling. Let the end be cut off and the contents scooped out with a small coffee spoon. As an ice, it surpasses in flavour the Strawberry. As a—must I call it—squash, with some sugar and ice added, it is delicious. I cannot, however, follow your correspondent "J." when he says that the embryo fruit must be protected from the fierce (in England?) rays of the sun. I have resided 40 years in England and I have yet to discover where the ferocity comes in. In Brazil, where no attention whatsoever is bestowed on the plant (and for ought I have seen, on anything else), the plant is exposed to the utmost severity of a scorching sun. Whether the fruit suffers from it, I cannot say; but that it is most luscious, as "J." terms it, is certain.

IGNORAMUS.

FERNS.

Crested Hart's-tongue Fern barren.—Is it a fact that the Hart's-tongue Fern (the variety crispum) is always barren? If so, by what means can it be propagated other than by root division? Also, when should this Fern be repotted?—PROPAGATE.

*** The frilled Hart's-tongue Fern (Scolopendrium vulgare crispum) is generally, though not always, barren; but there are in commerce several forms of crispum which occasionally bear spores, and the form called crispum fertile produce them freely, and seedlings from these retain the frilled character peculiar to that variety; but the broader the fronds (such as the forms called maximum and fimbriatum) are, the less likely they are to bear spores. These can only be propagated by the division of the crowns, an operation which may be safely done at any time between February and May, and which consists in cutting the crown into several portions, to which roots and fronds remain attached. If the plant is to be repotted, but not divided, the repotting may take place at any time between November and April.

Hibbertia dentata.—Among greenhouse climbers flowering at the present time this plant is worthy of notice by reason of its peculiar habit. Allowed to droop naturally from the rafters in the greenhouse, it presents a very pretty sight with its bright golden-yellow blossoms occurring at about 8 inches apart on the pendent growths.

RULES FOR CORRESPONDENTS.

Questions. — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2234—**Creepers for trellis arch.**—Can you or any correspondent give me any advice as to creepers which succeed best under the following conditions? A wire-work trellis arch, not protected by high walls, and on sea-level. Soil sandy, climate mild, and air dry. Flowering creepers preferred with plenty of foliage —A CONSTANT READER.

2235—**Edging plants.**—Be kind enough to tell me if Woody Woundwort (Stachys lanata) could be used with advantage in the bedding out in a large flower garden, and how? I have only seen a few odd leaves, and it looks so soft and pretty. Is it hardy, and how raised, and at what time of year? Is it high growing? Would Saxifraga Aizoon go well as an edging to summer plants, and which? I should be thankful for any names of hardy permanent edging. Is there anything low growing and hardy of a deep red colour? I have plenty of Echeveria, but that has to be housed in winter, and in a very large flower garden, 28 enormous beds, anything that would save trouble and expense, and look pretty would be an advantage.—ACANTHUS.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2236—**Docks and Daisies on lawns** (*E. M. W.*).—You cannot do better than read the article on "Lawns" in GARDENING, Sept. 25 last.

2237—**Ventilation for Ferns** (*Zeta*).—Never ventilate the house upon the windy side. The draughts thus caused are sure to be harmful.

2238—**Heating small conservatory** (*Novice*).—Fifty degs. is ample for the subjects you name. During fog we would light the stove, but not have much water in the tank.

2239—**Winter Cherry** (*St. Bune Cottage, Co. Down*).—The plant you send is the true Winter Cherry (Physalis Franchetti), the comparatively new species. It is very handsome, hardy, and useful for decorations.

2240—**Making baskets for plants** (*Zeta*).—We have generally seen stout Willow shoots and those of Hazel made use of for frames of basket beds. Slight iron bars would be more permanent. Brick and stone are unsuitable.

2241—**Book on table decorations** (*Constant Reader*).—We do not know a work of the kind you ask for. We can only recommend you to read notes and articles which frequently appear in these pages. We have given a very long series of articles on the subject.

2242—**Moss on Gooseberries** (*E. A. Neill*).—There is nothing wrong with the trees themselves. The Moss is the result of the bushes being in a too heavy and moist soil, and perhaps they are also too crowded. Unless the ground is thoroughly drained you cannot hope to get clean shoots.

2243—**Use of hot-air stoves** (*Amateur*).—The atmosphere is always parched and too dry for successful plant culture when hot-air stoves are used. There are several small hot-water apparatuses advertised in our columns, upon much the same principle as the sketch you send, and which do not dry the air.

2244—**Carnation shoots** (*Carnation*).—Can you not turn the stray shoots into the centre of the plant more, and cover the leggy portions with soil? Partly layer them, in fact. This will help to secure the growth, and will make the plants more compact; but they will not be so good as young, summer-layered plants.

2245—**Bedding "Geraniums" with Chrysanthemums** (*Zeta*).—An ordinary greenhouse will keep "Geraniums" well. See our notes upon page 514 of a recent issue. You may safely let them flower now, as they should be cut down early next year and new growth secured, meanwhile rooting the cuttings removed.

2246—**Asparagus plumosus shoots dying off** (*F. Wodehouse*).—We imagine the tips of your Asparagus shoots must get injured in some way. They should not die off from other causes while the plant is in such a thriving condition, and would become properly clothed as they advanced. Do not feed quite so liberally for a time.

2247—**Keeping bedding plants through the winter** (*Rodborough*). — Providing you have a fair amount of light, keep the plants rather dry and just free from frost should severe weather set in. Such plants as "Geraniums," Fuchsias, Marguerites can be kept through the winter in an attic. Try to maintain a temperature of 40 degs. to 45 degs.

2248—**Use of staging under greenhouse** (*Zeta*).—Such greenhouse Mosses or Selaginellas, as S. elegans, Martensi, Kraussiana, and umbrosa will soon clothe the space beneath your bench, and have a very pretty effect. Place a few pieces of rough sandstone for them to ramble over; this gives a better effect and helps the Mosses very much.

2249—**Hardy Chrysanthemums** (*Rugby*).—Some of the best hardy Chrysanthemums are C. latifolium, C. Leucanthemum semi-duplex, C. maximum, and C. uliginosum. If you mean varieties, like Mme. Desgranges, which flower early enough to give us an outdoor display, please look through recent issues of GARDENING. They are fully dealt with.

2250—**Sowing Carnation seed for next year's flowering** (*J. B.*).—If you mean the Margaret Carnations, sow in ordinary greenhouse heat next February. The winter-flowering kinds, with double blossoms, are best sown in July and grown on for the following season's bloom; but if you like the above section some will flower the following autumn.

2251—**Treatment of Gaillardias, etc.** (*Bunny*).—Both Antirrhinums and Gaillardias will be cut down by frost soon, but you can cut now without harm. Coreopsis grandiflora is best treated as an annual, and would not come through a severe winter. We would wait until spring before sowing the other annuals, now it is so late in the season; then sow in a frame or cool greenhouse, and so gain a few weeks.

2252—**Wire on house for creepers** (*Zeta*).—Use a coarse-meshed wire, fix it securely about 6 inches from the wall, and plant Clematises, Honeysuckle, Jasmine, Roses, Ceanothuses, and Wistaria sinensis. Any ordinary good loam will do, especially if helped by decayed vegetable matter and a little well-rotted stable-manure. Plant the Roses now, and the other subjects in March or April, purchasing these in pots.

2253—**Fuchsia leaves dropping** (*C. G. H. S.*).—It is evident you did not look through our pages closely, as we always reply to queries received. We think your frame too small for any but a very little stove, and would only use this when frosty. Fuchsias always lose leaf at this season and make new growth early in the year. Keep them dry now. You might winter Carnations in such a frame, but the atmosphere must not be damp.

2254—**Using asbestos** (*J. G. Clark*).—We do not see what you could use better than the asbestos. It is certainly the sulphurous fumes which cause the mischief in your house, but you must have the pipe very hot at times to do so much damage as you describe. We have never used asbestos for this purpose, but if it does not answer you will probably be forced to carry the flue outside, or else substitute a brick one in place of iron.

2255—**Pruning double white Clematis** (*Glamp*).—Prune the Clematis in February, cutting away all the weak and a portion of the old flowering wood. Mulch heavily in spring. To prevent the Honeysuckle plants from being attacked by insects, they should be kept scrupulously clean. This can be accomplished by syringing the plants during dry weather, as insects are not so troublesome when there is plenty of moisture about the foliage.

2256—**Pot-Figs** (*Aldeburg*).—Whether Figs in pots will do well under Vines depends very much on the density of the Vine-leafage, as Figs love sunshine, and plenty of it. It is very doubtful even if your vinery was well heated whether the overhanging foliage would not be detrimental. The utmost we can say is that whilst not hopeful of good result, you can but try the effect, as whether late or early all depends on the temperature of your vinery. On that head no information is given.

2257—**Garden soil** (*Allen-a-Boon*).—Although the sample of soil sent—black, boggy, and pasty—does not look attractive, yet there can be no doubt but that if you work into it some road-scrapings or gritty matter, with some half-decayed horse-manure, digging it deep and well pulverising it, that bulbs will do in it very well. Forking it well to break it down and clear thoroughly of weeds is the first consideration, dressing and planting it later. Do this whilst the soil is fairly dry.

2258—**Strawberry-plants** (*S. R. H. G.*).—Your layered Strawberry runners now checked in thumb pots will be too late to pot on for forcing. You can plant them out in rows 20 inches apart, to give you extra early runners to layer next summer if you pinch out the blooms; or you may plant them out into a nursery bed 9 inches apart, and transplant them with balls of roots where wanted to fruit next spring, and they will give you good fruit produce the following year. Get them out of the pots as soon as you can.

2259—**Pruning Vine** (*N. Devon*).—A recently planted Vine that has produced shoots from 5 feet to 6 feet long is not of much use to fruit yet. You had better cut back to a stout bud as far as you can, within the house in each case, and then encouraging the Vine to make strong growth. Get during the season rods from 9 feet to 10 feet long, and stout; these you can cut back the following season to about 3 feet each, and let them carry say three bunches each for a start. Do the pruning anywhere between now and the end of the year.

2260—**Raspberries** (*A. F. N.*).—You should be able to obtain the October Red Raspberry at any good nursery. It is not very largely grown, and we should hesitate to advise planting it greatly, as it is not always reliable. The rule with it is to cut back the previous year's growth in February quite hard, and to save each spring only a few of the strongest of the new suckers, and it is these that fruit from the extremities in the autumn. If the summer be very dry growths are then often poor, or if wet then the suckers are unripe and fruit poorly. You had better try the variety in a small way at first.

2261—**Decayed Apple-tree** (*W. M. M.*).—When branches are sawn from any tree, fruit or otherwise, the cut should be close to the main stem from which it is severed, then the wound neatly faced off with a sharp knife or chisel, and some coal-tar painted over it to keep out rain, as the action of rain and weather causes decay to the exposed surface. In time the wound, if thus cared for, heals. What you have done is the best you can in seeking to stop the decay in your Apple stems, but the evil seems to have gone rather far. The more you can exclude air and rain the longer the trees will endure.

2262—**Wood and fruit-buds** (*H. C. D.*).—On Pears fruit-buds are large, very prominent, and usually standing singly on the points of stems or spurs. Wood-buds are quite small, and joined generally on last year's wood. Plums have smaller fruit-buds, but are chiefly prominent on the previous year's and old wood. If you prune both Pears and Plums, you will do so only with last season's wood, and in shortening back invariably cut to a bud that projects outwards, and you cannot do wrong. Sometimes a branch having blooms-buds has to be cut out if the trees seem to be getting too thick or dense.

2263—**Fruit Book** (*Baykem*).—Du Breuil's book on "Culture of Fruit Trees," price 3s. 6d., may be had of Lockwood and Co., publishers, London. A cheap book is "Our Hardy Fruits," price 1s. 2d., published by Eyre, Spottiswoode and Co. You may find "Fruit Farming for Profit," price 2s. 9d., from C. Bunyard, nurseryman, Maidstone, or a book on "Fruit Culture," by Cheal and Sons, Crawley, Sussex, the price we do not know, to be useful to you; also you can buy the gold medal essay, "Profitable Fruit Growing," is 2d., also from Bunyard. It is difficult to find a fruit book suiting all tastes.

2264—**Hand plough** (*Ryl Hill*).—We are obliged to you for your reference to the hand moulding plough; but having seen one recently in use, and observed how laborious was its use, and how the man pushing it had constantly to draw it back to make chopping starts, the conclusion was forced on us that to be of real service, especially for moulding Potatoes properly, a donkey or pony was needed to draw the implement. You may have a very light porous soil, and even be willing to do a pony's work, that is your business. Implements of this kind have been purchased wholesale in the past as labour savers, and have been found soon to be labour creators.

2265—**Pruning Gooseberries** (*Othello*) —Whilst it is safe to prune Keepsake or any other Gooseberry bushes now, it may be wise to defer the matter till after the middle of the winter, because it sometimes happens that during severe frost or snow lying on the ground, birds, being limited for food, prey upon the fruit and wood buds of the bushes, and if previously pruned often not a fourth of the buds are left to break. That is, of course, great loss. If such attacks are unknown in your locality then you may prune at once. Spur back small inner side shoots, thin out others, and leave the strongest that grow outwards just shortened a little, as these carry fruit.

2266—**Apple-trees in pots** (*Othello*).—It is rare that Apple-trees are grown in pots out-of-doors. They are usually kept in an orchard-house, at least to bloom and set fruit, then perhaps stood outdoors in June to harden, and lifted into the house again in the autumn to finish the fruit off. The pots are usually large after the trees are from three to four years, say 11 inches to 12 inches across, and the best turfy loam, old decayed manure, and wood ashes used for compost. Potting should be very firm. A good variety is Ribston Pippin, so also is Cox's Orange Pippin, and you would like Cox's Pomona also. Beauty of Bath is yet too little known to be recommended for that purpose.

2267—**Tomatoes in pots** (*Subscriber*).—Presumably "Subscriber" in forcing soil, firmly rammed in between the pots in which his Tomato-plants were grown, did so at once for the plants to find root area if they came out of the pots, and to protect the side of the pots from drying. He mentions that he obtained a heavy crop of large fruits, but very large fruits are not the best for eating, neither are they the most marketable. He does not say whether his plants were grown erect or trained up under the glass in the usual way. We should, if the former, prefer just to sink the pots a little into the soil, and if the latter, then stand them in a row on the side of the house, nearly close together to utilise space.

2268—**Colour of Pears**—(*J. A.*).—Although most Pears when ripe show natural colours, yellow, red, brown, or even dark red, these hues vary somewhat on diverse soils. Still, you may find, assuming that your soil and situation, which is rather far north, grow Pears well, that Williams' Bon Chrétien, Marie Louise, Pitmaston Duchess, Clapp's Favourite, and Louise Bonne, will give you pale or yellow hues. These, however, may be of too choice quality for your colder district. If that be so, then grow Hessle, Swan's Egg, Doyenné d'Ete, Alexandre Lambre and Noveau Poiteau, as these are mainly early and hardy, though smaller fruited. They are all of light colour. You may add the Old Windsor for a sixth variety of this section.

2269—**Planting Fruit-trees** (*C. C.*)—You may plant fruit-trees at once, as the necessary treading of the soil will help to settle it down. Nailing the trees, however, need not be done till the spring. Plant south-west aspect:—Apples: Cox's Orange Pippin, Ribston Pippin, and Sturmer Pippin. Of Pears: Marie Louise, Louise Bonne, Doyenné du Comice, and Winter Nelis, all high flavoured. And of Plums; Transparent Gage, Green Gage, and Coe's Golden Drop. You may plant the latter Plum, also Cox's Pomona Apple and Catillac Pear for stewing, on north-west, and Morello Cherries and Gooseberries on north-east. The best Gooseberries are Whinham's, Monster, Red Warrington, White Smith, and Red Champagne for general usefulness.

2270—**Growing plants for market** (*Anxious*).—You really cannot grow for market with any prospect of profit in so small a house; more especially as your time is limited. We would advise you to use it for renovating and producing pleasing plants for the home and windows; also summer-flowering plants for the outside garden. You ought to be able to grow Tomatoes in plenty for home consumption, but would not get enough at a time to be worth marketing against the enormous consignments now sent in. A Black Hamburgh Grape might be planted, the roots being inside, but allowed access to an outside border also. This would give you a pleasing crop, but we would strongly advise you to give up all ideas of income from such a house.

2271—**Grafting and budding** (*T. R.*).—There is no book specially devoted to grafting and budding of which we know other than Charles Baltet's, which is entitled "Grafting and Budding," and is price five shillings. Of course, in such a book the whole process is elaborately described and illustrated. No doubt to a few a small manual on the subject would be useful, but we fear the demand would be too small to induce anyone to publish it. It is only by a large sale that cheap books

pay. Should any of our readers know of a shilling book on the subject that is trustworthy we shall be glad to hear of it. Nurserymen in their fruit books do not give details; indeed, they take so much pains with their budding and grafting that the work becomes to them almost like trade secrets.

2272—**Yucca not variegated** (*P. L.*).—If your Yuccas have not already developed striped or variegated foliage there is not much hope of them doing so now. It is an indisputable fact that seeds gathered from plants with variegated foliage have a tendency to revert to the green leaved forms. The variegated sorts should be propagated by stem cuttings and division of the roots. Cut the stems into pieces, leaving an eye to each piece, and bury in moist soil and place in a genial bottom heat. In a very little time the eye will grow and roots be emitted. Division of the roots is a very good method of increasing the stock. When a plant is lifted from the open ground it will be observed that there is a quantity of thick fleshy roots. If these are cut off and placed in a bed of light soil in a temperate house they will in nine cases out of ten grow into sturdy little plants.

2273—**Vine pruning** (*France*).—So few Grape-Vines ripen Grapes well outdoors in this country that it may be your variety is one that needs a glass-house to enable it to mature its fruit. The past season has been an unusually favourable one, and White Sweetwater, Royal Muscadine, Gammy Noir, Cidat, and Black Cluster have ripened fairly well on warm positions. You may in any case plant your Vine on a south wall at once, cutting back to a strong lower bud on the last season's shoots. The main stems should be fully 2 feet apart to give ample room to lay in the summer shoots or laterals. In the summer these seem too thick. They should be hard thinned, so that none overlap, and have plenty of light and air. Bunches, too, should be thinned, cutting out all the weaker ones, and if possible even thinning the berries one half on some of the best ones left. A manure dressing when the berries are swelling will do much good.

2274—**Land for Willows** (*Lime*) —Your proposal to dress your ground with spent lime refuse, bark, ashes, and night soil, first for Turnips and Potatoes, and after for planting with Willows, seems to be all right, especially that the proposed cropping should lead to the soil being cleansed, a matter of the first importance for any permanent crop. But for Willows you must have ample moisture, produced by natural streams, floodings, or irrigation. Have you such provision? As to liming rich soil, so called, fresh lime will do as well, perhaps, in your case, rather better, than gas-lime, as the latter is a somewhat dangerous compound to use freely. Get fresh lime from the kilns, set it on the ground in heaps of a bushel to about 1½ rods of ground, and cover up with soil. When it is thoroughly softened and pulverised, spread it over the ground evenly, and dig it in. You should not require any manure dressing next spring.

2275—**Peach-trees in house** (*C. T.*).—We had thought your query was duly answered at the time, and if you turn to page 465, issue October 16th, you will find it. But your present note is clearer. If you plant Peach-trees on a front trellis to train up under the roof, you must allow them to do so only two thirds the height of the roof, as otherwise you will get no light for the trees and the back wall. Even then, being a ¾-span, you would get little direct light on to them. The putting in of standard-trees cannot be sanctioned for one moment, as you suggest. We should prefer cross-wise trellises, 5 feet apart, planting trees singly against them, giving six trees on trellises 10 feet wide, which would be 60 feet run, and then you would, in that way, get far more light on to the tree on the back wall. With trees trained up close under the glass you will find the back-wall trees will do very indifferently, except towards the top of the wall.

2276—**Utilising a paddock** (*F. J.*).—As the trees overshadow your paddock so much, and vegetables will not do well, neither are they needed, you would do best to plant it as a low orchard, certainly including some Nut trees. But rather than have useless Blackthorns, why not plant some Apple, Pear, and Plum-trees on dwarf stocks, in bush form, also Quinces and Morello Cherries, for these, both in bloom and in fruit, are beautiful. You could sow Grass-seeds to make an orchard pasture, and the dwarf trees and bushes dotted about on it would look very pretty. It is, after all, not a great area, and would not cost very much to plant in this way thinly. The ground should be at once well forked over to clean it thoroughly, and the planting proceeded with. If the two standing Apple-trees are not handsome objects, have them removed. A few of the hardy Crabs, Siberian especially, planted here and there would give great beauty in bloom and in fruit.

2277—**Fruit books for New Zealand** (*A. D. B.*).—We know of no books on fruit culture in New Zealand published in this country. Even were there such, it is very evident that the demand for them here would be very limited. Books on hardy fruit culture for profit at home would, of course, be of very little service, because the climatic and other conditions are so dissimilar. Would it not be best for you to write to the Agent-general for New Zealand at his office in Victoria-street, Westminster, who could doubtless furnish you with full information, although books or advice coming from such an official source would have to be regarded with reserve, as it is the business of such officials to present the colony in a roseate aspect. Vine culture in New Zealand, essentially out in the open, is a matter of which we have little experience in this country, and even the method of culture adopted in Lord Bute's vineyards at Cardiff may not suit Australasia.

2278—**Sandy soil** (*Tunbridge Wells*).—Our experience of soils of this description is that if deeply worked at the first, before any planting is done, they will grow almost anything very well. Soils may not naturally be all that can be desired, but if you work and feed them they soon improve. Have your ground trenched, but keep the bottom soil where it is, only breaking it up deeply with a fork, replacing the top spit of soil on the top. Give at the same time a good dressing of manure, half decayed. Once the ground is well prepared in this way, and, indeed, after planting, you may add a mulch or surface-dressing of manure. You may in due season sow or plant Peas, Beans, Potatoes, Cabbages; indeed, anything of vegetables, and the same of flowers. To give a full list of things would fill a column, because it would have to include everything. Currant and Gooseberry-bushes, Raspberry-suckers, and strong Strawberry-runners may also be planted the moment the ground is ready, also a few of any dwarf-growing Apples on Paradise-stock, and a Rivers' Early Prolific and a Victoria Plum. As to annuals and biennials for spring sowing they are legion. Sow or plant what you may. Success or failure is entirely dependent on the labour and dressing you put into your ground now.

2279—**Wireworms** (*Knowle*).—Yours seems to be a very bad case, and affords conclusive proof that even a strong dressing of gas-lime, as we have long feared, did little harm to wireworms. There are now left two methods. One is getting oil-cake as given to cattle, placing pieces of this into the ground here and there, and leaving the worms to feed upon it to repletion, killing themselves; or marking the place of each piece with a stick, digging it up once a week, thus catching all the pests preying upon it. Or you may plant a few inches deep, in the same way, pieces of Swede, Turnip, Carrot, Beet, or Mangold Wurtzel, and making traps for them in that way. Then you may fork up your ground once a fortnight during the winter and turn poultry in upon it. They will destroy great numbers, but an occasional breaking up is needful to give the fowls a chance. What will kill wireworm as a dressing may harm the soil materially also.

2280—**Boiler** (*Query*).—To have a good holding fire in the sort of upright boiler you name you must stoke it frequently, and clear the ash-pit well. If you allow it to become choked, checking draught, the fire is slow, and there is little heat. Probably the best course is to clean out the furnace every morning and relight the fire. Use well broken coke, rather small than otherwise, and a little coal-dust may be mixed with it. If you find the house becomes too hot you can reduce the draught by employing a damper, or if the reverse, then open the damper to cause more draught and combustion. Much depends on where the boiler is placed and the extent as well as size of piping attached. As to where to sell flowers you had better inquire at the nearest florist's shop. Do not reckon on having many to dispose of from a small house. Just now flowers are so cheap that they hardly pay to market. To get anything like a paying price it is needful to have not only a constant supply but a large one to be of any value to the florist.

2281—**Forcing Rhubarb** (*S. R. H. C.*).—The weight of stalk that may be obtained from Rhubarb roots forced depends entirely on the size of the roots and the number of crowns they have Any answer must be entirely problematical and worthless apart from that, so much depends on pulling, etc. As to watering Rhubarb roots when set in soil in a dark place to push early growth, one good watering at first commonly suffices, as root action is not great. Johnstone's St. Martin's is a good forcing Rhubarb, so too is Hawke's Champagne—probably the best; Linnæus is also good, so too is the popular Victoria. It is the rule to allow Rhubarb roots to remain in the ground four years before lifting for forcing, by which time they are huge clumps of roots. To have plenty, a good quantity of divided roots—single crowns—should be planted into fresh soil every April to keep up a succession. Of course, the darker you can make the place of forcing the better; but be careful of drip from plants above.

2282—**Electricity and Mushrooms** (*C.E.B P.*).—Your query as to the possible application of electricity to Mushroom culture is indeed a novel one, and we know of no fact or experience that can help to enlighten you. Certainly there have been some experiments made by Dr. Siemens and others, with a view to showing that continuous light through the aid of electricity did materially help to promote growth in plants; but the results, all the same, seem to have been so small as to give no encouragement to further experiment. Mushrooms, as you know, prefer darkness rather than light, and grow in darkness most rapidly. If electricity could be made to define warmth in the beds on which the funguses were growing, then some benefit might result; but is that practicable, seeing that there is no data to go upon? We can but advise that you experiment in such a way as your experience may lead you to think best. The ground is absolutely new, and there is no telling what new methods in culture even partial success may open up.

2283—**Canker in Apple-trees** (*W. M. M.*)—Canker comes usually from lack of proper foods in the soil for the trees, and also where roots are in sour soils. Some varieties are very susceptible to canker. In your case pare off smoothly the diseased parts, then make up a mixture of soft-soap, clay, and paraffin, the latter in the proportion of a teacupful to a gallon. Have it all well mixed and pasty, then dress the wounds with it, doing it two or three times during the winter and spring. At the same time you will find it desirable to give about the roots to be well hoed in a mixture of Kainit and superphosphate of lime in equal parts, just sprinkling it about over the roots once a month, and for some time. This well hoed in may in the spring be supplemented by occasional liberal waterings with sewage matter, and in the summer by top-dressings or mulches of long animal manure. It is evident that the canker in the trees was germinated in them ere transplanted, and now you may find little difficulty in keeping it in check, if not in exterminating it.

2284—**Turfing ash tennis-court** (*Neta*).—As it would need over sixteen hundred proper sized turves to cover your tennis-court, of course it would be a very expensive matter. Growing with Grass-seed is cheapest, and if you purchase your seed from a good source you will be safe. We, however, advise you to remove some of the ashes if rather thickly laid. If not more than 2 inches thick then fork up and mix the ash surface well with 4 inches of the soil, thoroughly well pulverising it, and treading it well to make it even, then well raking it and rolling, raking it loosely again before sowing. The seed, however, should not be sown until the middle of April, and therefore there is no hurry; but the preparation should be done not later than March. Some clean fine soil may be strewn over the surface before sowing. Ask for seed enough to sow the space you have. Let it be sown very evenly, then thoroughly raked in, and the ground again well rolled. Birds must be scared off, as they generally pick up the seeds and eat them. Let all weeds be thoroughly forked out at once, ere they grow stronger.

2285—**Planting hilly orchard** (*Pomona*).—The best shelter trees to protect orchard from wind are Scotch Fir behind, and Spruce Fir in front, a double row, planting the trees alternately. These soon make a capital break to fierce or cold winds. Plant fruit-trees so that the rows run north and south as much as possible, as trees then get most sun. Good strong standards growing 20 feet apart are Blenheim Pippin, Bramley's Seedling, Newton Wonder, Warner's King, Mère de Ménage, Waltham Abbey Seedling, and Wellington. For bushes grow Gladstone Early, Worcester Pearmain, King of the Pippins, Cox's Orange Pippin, Cellini Pippin, Frogmore Prolific, Cox's Pomona, Small's Admirable, Lord Grosvenor, Potts' Seeding, Lord Derby, and Prince Albert. You should break the soil up deeply, getting out as much of the sandstone as possible, as ample root room is of the first importance to the trees. Although the elevation is high, yet if the soil be deep and not unduly dry, the trees should do well, especially as the aspect is good. In planting Firs, get three years' stuff, as big stuff is often less likely to do so well. The ground should be for them very clean and deeply dug.

2286—**Substitute for glass in greenhouse.**—Can you kindly say where this is to be bought?—T.

*** *Any of the horticultural sundriesmen can supply, and several advertise in our columns. Look through for one near you, or procure from a London firm.*

2287—**Treatment of Hollyhocks.**—I have some young Hollyhock plants from seed sown last May. They have been transplanted from the seed bed. Can they be planted now in their flowering quarters, or must they be planted in a cold-frame, or can they remain where they are? Is a border in front of a high wall facing east a suitable position for them for flowering?—HOLLYHOCK.

*** *We would keep these in a cold-frame until April. An eastern position would be favourable. Dig in some good compost deeply before planting, as they are not only hungry feeders, but very deep-rooting subjects.*

2288—**Dividing Asparagus Ferns, etc.**—What is the right time to divide and repot Asparagus Ferns and Cyperus?—W. P. M.

*** *It would be better not to divide the African Asparagus, but obtain seedlings for increase of stock. The Cyperus may be parted early in February, and each portion placed into a small pot of leaf-soil, loam, and a few pieces of broken charcoal. The Asparagus is also best repotted at that date, and will thrive in the same compost.*

2289—**A cheap hot-water apparatus.**—Would you kindly inform me through the columns of your paper what would be the cheapest hot-water apparatus for a greenhouse 20 feet by 10 feet, and which would effectually exclude all frost, stating price?—T. INGHAM DIXON.

*** *Our advertising columns contain several good heating apparatuses, but we really cannot recommend one over another when so many are of equal merit. Look through the pages of our advertisements.*

2290—**Propagating India-rubber-plant.**—What is the quickest way to propagate Ficus elastica and also Araucaria excelsa?—RUBBER.

*** *Please obtain our issue for Feb. 6, when you will find an illustrated article upon propagating the Ficus elastica. Araucaria excelsa should be obtained from seeds, but cuttings of young growth root freely in the spring. They must, however, be taken from the leaders or main shoots if a shapely plant is to be secured; but here, also, seedlings are much better.*

2291—**Propagating lemon-scented Verbenas and Pilea.**—Will you kindly tell me the time to propagate the lemon Verbena and how to grow it? How is Pilea muscosa propagated?—HEATS.

*** *The lemon-scented Verbena may be grown in any window or greenhouse. It only needs a compost of leaf-soil and loam in equal proportions, and plenty of light. Propagate by cuttings of young growth, dibbled in under a handglass, using a sandy soil, and taking the cuttings in April or May, if you have not a gentle bottom-heat and propagating case. Pilea muscosa can be increased from seed and by cuttings, or division in the early spring.*

2292—**Roman Hyacinths.**—I planted some Roman Hyacinths in pots on Aug. 25th. They are still in the dark and are up about 2 inches above the soil. When should they be put into a cool greenhouse so that they will bloom at Christmas?—K. M. H.

*** *We should recommend you to move your Roman Hyacinths to the greenhouse now. They are very backward for bulbs planted in August, and we fear could not be large, well-matured specimens, such as are necessary for early forcing. Keep them covered for a few weeks yet, or, at least, until growth is 4 inches high. This will advance them, and you can easily keep them back if found to come on too rapidly.*

2293—**Triteleia.**—About six weeks back I planted in the border bulbs of Triteleia uniflora; they are already showing above ground. Should I cover them with Cocoa-nut-fibre or leave alone?—INQUIRER.

*** *They will not want protecting.*

2294—**Anemone japonica.**—Could you kindly inform me the best time to divide and plant Japanese Anemones?—A NOVICE.

*** *Early in the spring is the best time, when new growth is commencing.*

LATE MISCELLANEOUS REPLIES.

Chrysanthemum sport (*Assam*).—We should certainly grow the sport on for another year. It seems distinctly promising.

Carnation leaves unsatisfactory (*S. H. Powell*)—The Carnation leaf you enclosed had been attacked by one of the mites, but as only portions of their cast skins remained of them, I cannot say much about them. If you would send some more leaves, I may be able to give you some information about them.—G. S. S.

Good bush yellow-coloured Roses (*Rugby, Lancaster*).—Some good dwarf yellow Roses are Perle des Jardins, Madame Hoste, Medea, Marie Van Houtte, Gustave Regis, and Mme. Falcot.

Rose-trees not flowering (*E. V. S.*).—We would like to know the varieties, or at any rate, whether climbers or not, and if in the open or under glass. As a rule, no Rose will fail to bloom if one leaves the growth

more intact than is generally the case. So many prune a strong grower because it has not bloomed, whereas that is the reason it should be left alone.

A climbing Moss Rose—I should like to grow a Moss Rose as a climber to cover a wall 5 feet high. Can Moss Roses be grown as climbers? If so, would you name a red one that would go well with a Celine Forestier, which now partly covers the wall—it faces south-east?—H. S. B.

*** Try Mme. Edouard Ory.

Seedling Briers for bedding (*Novice*).—Any of the Rose growers advertising in our pages can supply seedling Briers. The prices vary from 3s. to 10s. per 100, according to size and age. Two-year-old seedlings are best, and should not be quite so thick as a Cedar-wood lead-pencil when planted. We are glad your Chrysanthemums are improving.

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Novocastrian*—The name of your slip is Pelargonium tomentosum, and is one of the scented leaf section. There are several of these, some being very fragrant, and resembling the Orange, Rose, Peppermint, Nutmeg, etc. —— *Plumbago.*—You have Begonia Weltoniensis. We would cut it down now, as it has become so leggy.——*Heath*—We cannot trace the Ferns. So many plants come for name that kinds sent anonymously can rarely be traced. —— *G. C.*—1, Cupressus Lawsoniana lutea (poor form); 2, C. Lawsoniana; 3, Retinospora obtusa; 4, Ruscus aculeatus (Butcher's Broom); 5, Aucuba japonica.——*A Constant Subscriber.*—Acacia lophantha. It is generally propagated by seeds.——*Monaghon.*—1, Amelanchier canadensis; 2, Pyrus arbutifolia. The last-named and P. nigra are not the same. P. nigra has smaller foliage and more pink in the flowers. Aronia arbutifolia is synonymous with Pyrus arbutifolia.——*G. G.*—It is not at all easy to name Chrysanthemum flowers unless show blooms, but the following we can determine: 2, J. Shrimpton; 3, Sunflower; 4, F. Molyneux; 5, Etoile de Lyon; 7, Elaine; 8, Baron Hirsch. ——*Mrs. M A. Houche.*—Chrysanthemum Pink Christine. ——*M. E M.*—Please send a characteristic specimen. It is impossible to name correctly from a small Acorn cup.—— *England.*—1, Retinospora plumosa; 2, Cupressus Lawsoniana; 3, Thuja orientalis. Transplant now.——*M. R.* —Astrantia major ——*Grace P.*—1, Mme. Berard; 2, Safrano.——*J. D.*—Black Walnut (Juglans nigra).—— *H. D. W.*—Selaginella Kraussiana requires a moist light soil and a fairly warm greenhouse. It is very free in growth.——*M. Park.*—1, Eulalia japonica variegata; 2, Maranta zebrina; 3, Eupatorium Weinmannianum.—— *J. R B.*—1, Sedum Lydium; 2, S. glaucum; 3, Apparently common Stonecrop; 4, Sedum spurium. Grow on walls, thatched houses, etc.——*Mrs. N.*—1, Adiantum cuneatum; 2, A. concinnum; 3, Polystichum angulare (Prickly Shield Fern); 5, Selaginella Martensi variegata. Please send specimens of other kinds.——*F. E.*—1, Centropogon Lucyanus; 2, Variegated Cocksfoot Grass (Dactylis glomerata variegata). —— *Bell.* — You must please send better specimens of these not named. 1, Nephrolepis exaltata; 2, Pteris serrulata cristata; 3, Pteris cretica; 4, Polypodium cambricum; 6, Adiantum concinnum; 7, Scolopendrium vulgare var. (Hart's-tongue); 11, Lycodium scandens.——*Mrs. G. C.*—Next week.

Names of fruits.—*Rev. S. Watson*—1, Gilogil; 2, Uvedale's St. Germain; 3, Durondeau, gathered too soon, hence its shrivelled condition.——*Mrs. G. C.*—The Apple is Blenheim Orange. See "Names of Plants" for tree.——*A. M. B.*—1, Apple Norfolk Beaufin; 2, Please send a better specimen; 3, Pear Marie Louise; 4, Small Golden Noble Apple.——*J. Shield.*—Red one is Norfolk Beaufin; the other is probably Royal Russet, but the specimen was not very good.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Kunstfreund—We do not consider it advisable to commence the feature you suggest, but many thanks for your letter. "Cottage Gardening," published by Messrs. Cassell & Co., Ludgate Hill, London, would be of assistance to you in the matter.——*Archie Ley.*—You cannot have a better book than Molyneux's shilling book on the Chrysanthemum, to be obtained from the author, Swanmore Park Gardens, Bishop's Waltham, Hants.——*A. H.* —Evidently a Gourd, of which there are many forms. We are fairly certain about it, but, of course, if we saw a fruit of it that would settle the matter.——*C. D. J.*—Get Baines' "Stove and Greenhouse Plants," published by Murray, Albemarle-street, London.——*E. H. H.*—Unfortunately we cannot help you in the matter, not having the address

BOOKS RECEIVED.

"The English Tulip and its History." By Several Writers. Barr & Sons, 12 and 13, King-street, Covent-garden. Price 1s. 6d.

"Hardy Perennials" By J. Wood. Published by Upcott Gill, 170, Strand, W.C.

"Carnation Manual." (New Edition.) Published by Messrs. Cassell & Co., Ludgate-hill, London. Price 2s. 6d.

"Amateurs' Flower Garden." (New Edition) Published by Messrs. W. H & L. Collingridge, 148 and 149, Aldersgate-street, London. Price 3s. 6d.

"Practical Forestry." (12th Edition.) By Chas E Curtis. Published by Crosby Lockwood & Son, Ludgate-hill. Price 3s. 6d.

Catalogues received—*Forest and Ornamental Trees*—Dicksons and Co, 1, Waterloo-place, Edinburgh. ——*Chrysanthemums.*—W. Welch, The Nurseries, Romford.——*Forest and Ornamental Trees.*—Fotheringham and King, Dumfries.

LAW.

A tenancy dispute—agreement excluding valuations.—G. W. rented a field from A. R., and signed an agreement to pay no valuation on entry, and to receive no valuation on quitting. He died, and appointed his wife and myself trustees by his will. A. R. died also, and the field was sold to M. E. R., who has now given Mrs. G. W. formal notice to quit. In other respects the notice is all right, but it is addressed to Mrs. G. W. only. Is it binding? As the parties to the tenancy are dead, can a valuation be claimed on the termination of the tenancy?—W. J. S.

*** At the death of G. W. his tenancy devolved upon his executors—yourself and Mrs. G. W. When the field was sold to M. E. R. the tenancy continued on exactly the same terms and conditions as before, M. E. R. being the landlord, and Mrs. G. W. and yourself the tenants. A notice to quit given by or to one of several executors is a good notice, and the notice you, or rather Mrs. G. W. has received, is a good notice, and is binding. As the terms of the tenancy continue unchanged, no valuation can be claimed under the agreement, or under custom. But if the cultivation of the field has been such as to bring it within the scope of the Market Gardeners' Compensation Act or the Agricultural Holdings Act, compensation may still be claimed for any of the specific improvements for which compensation is provided by those Acts. But in ascertaining the amount of such compensation there will *inter alia* be taken into account in reduction thereof, "Any benefit which the landlord has given or allowed to the tenant in consideration of the tenant executing the improvements."—K. C. T.

Notice to determine service of a gardener.—During the first week of August I accepted a permanent situation as gardener at a weekly wage. On October 21st my employer informed me that the house was let, and that there would be an alteration in the arrangement, and on October 30th he discharged me. Was I entitled to a month's notice or to a month's wages in lieu of notice?—E. H.

*** A gardener, although paid a weekly wage, falls within the category of domestic or servant, and as such is entitled to a month's notice or a month's wages in lieu of notice. If there was no bargain for a shorter notice, and the situation was understood to be a permanent one, you are entitled to three weeks' wages for want of a proper notice.

A gardener's duties (*Puzzled*).—The work you describe is not such as is ordinarily performed by gardeners, and cannot be said to be the ordinary work of a person engaged as a "gardener." At the same time such work is often done by gardeners, but there is usually a special contract to that effect. As the work you are asked to do is such as you were not specifically engaged to perform, you may refuse to do it. I do think you are entitled to leave without notice, but you may ask to be allowed to do so, and to be paid your wages up to the date of leaving. If your employer refuses, you may then refuse to do other work than that which you were engaged to perform, and as nothing but unpleasantness will ensue, you had better at the same time give a month's notice. —K. C. T.

The National Chrysanthemum Society's Show.—The annual exhibition of this society was held recently at the Royal Aquarium, and there were the usual rows of flowers shown formally in green boxes. A very fine exhibit—a relief from many of the groups—was the bold arrangement of flowers in the display made by Mr. Norman Davis, of Framfield. Several vases were used, each filled with one distinct colour, and the flowers, being of exhibition standard, were very bold and handsome in effect. A tastefully-arranged group came from Mr. H. J. Jones, Ryecroft Nursery, Lewisham. We were pleased to see the dainty single Chrysanthemums well represented; but we hope those who exhibit will not spoil a beautiful race by so severely disbudding as to make the flowers as big as possible.

FOOD FROM GARDEN, ORCHARD AND FIELD.

COOKING JERUSALEM ARTICHOKES.

(IN REPLY TO "W. A.")

ARTICHOKES BRAIZED.—Well wash the Artichokes and peel them, putting them into a basin of cold water. Melt a lump of butter the size of a Walnut in a saucepan. Put in the Artichokes after drying them on a cloth. Let them brown in the butter, turning them over frequently to brown them all over. Then close the lid, set the saucepan on a hot part of the stove for fifteen minutes; put them on a hot dish, and serve with either roast or boiled meat.

BOILED ARTICHOKES.—Wash and peel them, keeping them either round in shape or the shape of a cone, with one end cut, to make them stand up on end when cooked. Put them into a saucepan half full of quite boiling water. With a little salt, let them boil ten minutes, or until they are easily pierced with a fork. Dish them in a circle on a hot dish, and pour over them thinly made Parsley and butter sauce, or any nice sauce you like—white or brown.

FRIED ARTICHOKE CHIPS.—Wash and peel off the outer skin, and, with a sharp knife, peel the Artichokes in ribbons, putting them, as you ribbon them, on a cloth to dry. When you have as many peeled in this way as you wish to use, have ready a large frying-pan, quite half-full of smoking-hot fat (the fat does not boil until a blue vapour rises), then put in the Artichokes. Bring the fat as quickly to the boil as possible, letting them fry until they rustle when stirred with a fork, then pour the fat off by throwing them into a strainer. Put them on a piece of kitchen-paper on a dry plate in the oven to keep hot; sprinkle with salt, and serve.

ARTICHOKE SOUP.—Peel six Artichokes, three Onions, a head of Celery, a Bay leaf, and a sprig of Thyme. Put these on to boil, with just enough water to cover them. When quite soft strain off part of the water. Mix smooth a tablespoonful of flour with a teacupful of milk. Pour this flour mixture into the Artichokes with a good lump of butter. Bring it to the boil, and add more milk to make it as thin as single cream. Pass it all through a wire sieve or coarse strainer. Put it back into the saucepan to make hot, with a seasoning of salt, Pepper, and a little butter and a little cream. Turn into a hot tureen, and serve with fried crusts of bread. Artichokes are nice, too, plain boiled, well drained, mashed with a bit of butter, also scolloped. B.

Rhubarb wine.—I made about 20 gallons of Rhubarb wine in the summer, and after it had been in the barrel about two months I bottled some. It was very sharp and sparkling, but now I find what I have bottled lately is quite flat and not a bit sharp. Why is this?—B. S.

*** Put a ¼ lb. of loaf sugar in a tablespoonful of water, dissolve this without boiling, into the sugar put ½ oz. of citric acid. Let this melt, and allow it to stand until quite cold. Stir into this a teacupful of brandy. Put two tablespoonfuls of this mixture into each quart bottle of wine, cork down with new corks. I think the reason your wine lost its sparkling qualities is that bad corks were used; probably old ones.—B.

BEES.

Enemies of the hive—queen wasps (*T. Stanton, Bath.*)—The number of queen wasps collected by you from one colony is very remarkable and unusual; and you have the satisfaction of feeling that you have probably saved your neighbourhood from a pest of wasps next season, for, although they may not all have survived, doubtless a sufficient number would have lived to have made matters very unpleasant for Bee-keepers and others. Queen wasps are reared in larger numbers by far than are queen Bees, and the reason is obvious when we remember that the queens only remain alive through the winter, and upon them devolves the responsibility of founding fresh colonies the following season. On the dying out of the workers at the end of the season the queen wasp searches out a sunny

retreat wherein to pass the winter, which she does in a torpid state, reviving in the early summer, when she builds a few cells in which she deposits eggs. The grubs from these are nourished and fed by her, and as they come to maturity they carry on the comb building, in the cells of which more eggs are deposited; and so the work goes on, and by the end of the summer the colony has become sufficiently strong to play sad havoc with the ripening fruit, and to attack weak colonies of Bees. Every queen wasp that survives the winter represents a colony of these destructive pests, and in dry seasons they are especially troublesome—as many as thirty-eight of their nests have been destroyed within a radius of 300 yards. Your large take of queens from one colony is of great interest, proving how immensely wasps would increase if not kept in check by the destruction of their nests in the autumn.

POULTRY.

Recipe for poultry-spice (*A Seven Years' Reader*).—I regret I cannot oblige you with the prescription you require, and this for two reasons—first, because eggs can be produced in reasonable quantities at all seasons by judicious management without the aid of stimulants of the kind mentioned; and secondly, because I do not believe it possible for eggs to be forced from hens by simply feeding them on a particular kind of spice unless the hens are really in a condition for laying by natural means. You may think what I have just stated to be incorrect, but I may say I have studied the poultry question very carefully for several years, and I am satisfied, from my own experience, that no spice ever manufactured will be the means of immediately producing eggs from hens, say, which moulted in October and are now resting. Such hens, except in favoured situations, will not lay again with any certainty until next February. The secret of winter egg-production is to hatch your pullets in March and April; to feed generously, but at the same time judiciously, throughout the summer; in September to improve the diet; in October feed regularly on warm meal for breakfast, with a few meat scraps, hard grain in the afternoon, and house them comfortably. From 50 per cent. to 70 per cent. of my own pullets of the age mentioned are laying regularly, and this without any other stimulant beyond that contained in their ordinary food.—Doulting.

BIRDS.

Treatment of Doves (*P. L.*).—We presume your birds are what are known as Barbary Doves. You should keep them in a large cage, or, better still, an outdoor aviary, where they can have room to fly about, and where they become very interesting—in fact, they may have their liberty about the premises, like Pigeons, if a warm roosting-place be provided for them. We have kept them so, when they have reared their young in a tree close to the house; but, of course, with free liberty there is always a risk to run in the matter of enemies of the cat kind. The hen will lay in the early spring, and, if all goes on well, will rear two or three broods in the season. The cock bird will sometimes destroy the eggs, and when he shows this tendency must be removed from time to time, but not otherwise. You may give your birds Canary-seed, Hemp in small quantities, Millet, Rice, and small Corn of any kind, taking care to supply them with abundance of coarse grit-sand, an unfailing supply of fresh water, and to keep them in good health provide them with a piece of rock-salt to peck at. The young are fed from the crop upon such food as you may supply the old birds with. The nest they construct is but a slight affair, to receive which a small open box or basket should be provided; indeed, it is better to furnish more than one receptacle, as they sometimes want to build again before the young have left the nest. Heather sprays form the best material for the construction of their nests, and a small quantity of this or something similar should be provided in the breeding season. The hen sits after laying two eggs, and the pair of young ones, from the good feeding and attention they receive, make rapid growth.

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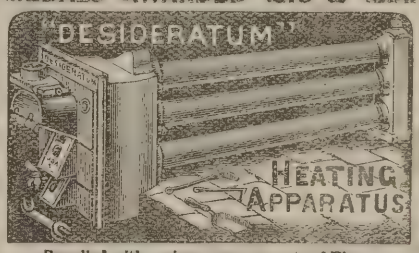

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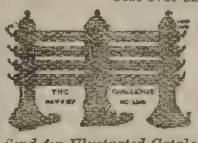
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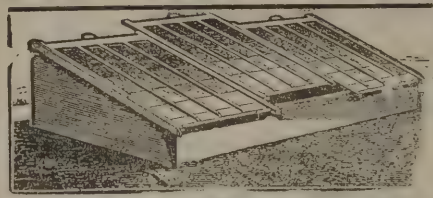

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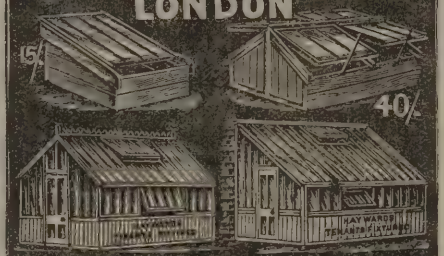

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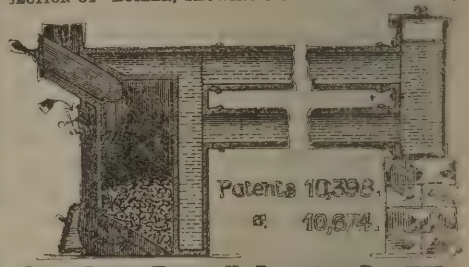

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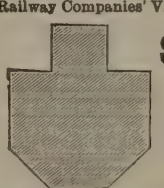

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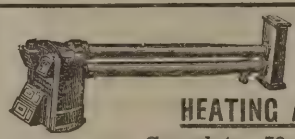

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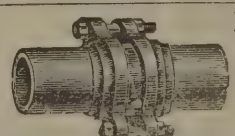

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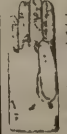

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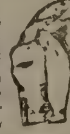

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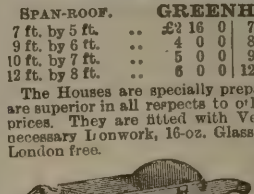

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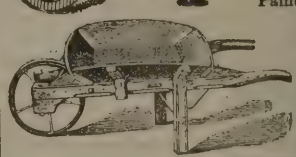

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GARDENING ILLUSTRATED.

No. 977.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* NOVEMBER 27, 1897.

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TREES AND SHRUBS.

THE BLUE HYDRANGEA.

Several correspondents have written upon this beautiful form of Hydrangea, asking where it can be obtained or how produced. The fact is, we have no blue variety that is constant in colour, H. Hortensia varying from white up to quite a deep rosy-pink, and sometimes a very deep blue. One often gets plants more or less tinged with the blue shade, but a very deep blue is by no means rare. I have tried, upon more than one occasion, to secure this shade, and a few notes may be of interest.

A plant in my grounds produced flowers that in the course of three seasons were an intense blue. This was propagated from both by layers and cuttings. Now, not one of those plants were ever tinged with blue, but reverted to the creamy-white most frequently met with. Soil was taken from around the blue specimen, but the result was the same. Others were planted close to it, and yet gave not the slightest tinge of blue. It is also singular that after a time the original returned to the creamy-white once more, and yet the plant had been undisturbed.

The Hydrangea is a prominent feature in the Alexandra-park at Hastings, and this season I noted a fine lot of the blue shades, some very deep, while all were one mass of blossom; and yet, side by side with some of the deepest blues, one or more of the normal colour was growing. If possible we would secure the deep and clear light blues in preference to the creamy-whites and soft pinks, for not only are the latter shades common among our late-flowering shrubs, while we have none with the deep blue shades, but the effect is so grand.

That some chemical constituent in the soil is the cause seems certain. In my own case the soil was a stiff clayey gravel; but there was no presence of iron, as I have often seen in other instances, while the soil was very poor, and after a few seasons was evidently exhausted of the blue-producing property. It was also some three years before the blue shade appeared, and during that time no manure had been added to the shrubbery in which it grew. Iron is evidently present in the Hastings soil, and sometimes we get a good blue by mixing a little iron drillings with the compost of a pot-plant. Water in which a little alum has been dissolved has also produced the desired effect; but I have only succeeded with iron drillings, and then not with all plants that I am positive were treated to the same compost.

I have been assured by gardeners that some of the peaty and irony soils of Wimbledon and Hampshire will invariably produce blue flowers, but seeing how very changeable and erratic this pretty shrub is in matter of colour, and that it will suddenly revert from a deep blue to a greenish and by no means attractive white, although undisturbed, I have come to the conclusion it is largely a matter of natural variation and chance. P. U.

Golden Alders (*Staffs No. 1*).—Cut the plants back in spring.

THE LILACS.

I want to plant some Lilac-trees, and I should like them to bloom next year. Can you inform me what kinds are the best? Also what kind of soil they will thrive in?—W. Simms.

*** The Lilac cannot by any means be called an exacting plant. It grows well in all soils, and flowers profusely in nearly all positions. It is also a first-rate town plant, as it endures atmospheric impurities better than a good many shrubs frequently met with in large cities and towns. We have seen bushes growing freely in very dry, hungry soil, but the disadvantage of such a soil is that the flowers are possessed of very little substance, and soon fade under a hot sun. To do the Lilac justice a good loamy, well-drained soil and an open, sunny position is advisable. If good leaf-mould is at hand it should be mixed with the loam, as the roots of the Lilac are very partial to leaf-mould. If plants are procured now, and planted with care, they will flower next year; but a better floral display may be expected the following year, when the plants have made a season's growth, and are properly established in their fresh quarters. If the spring and summer should be very dry copious supplies of water at the roots will be of immense benefit to the plants. The following is a list of really good varieties:—

Singles.

Dr. Lindley is a very useful and certain bloomer; flowers rosy-purple. Souvenir de Louis Spath is a magnificent variety, with large dark purple flowers, borne in huge trusses. Virginale is a good white; Princess Marie is also white. It bears very freely compact trusses of snow-white flowers and blooms a week or so earlier than Virginale. Géant des Batailles is very distinct; flowers rosy-pink, borne in medium-sized trusses. Charles X. is perhaps the most useful of all. It is of quick growth, and very free flowering; the reddish-purple flowers are produced in large trusses. Louis Van Houtte is a vigorous grower, with large dark red flowers. Gloire de Lorraine is conspicuous by reason of its large, delicate rose-coloured flowers; very handsome.

Doubles and semi-doubles.

Mme. Lemoine is very beautiful and free flowering; flowers large snow-white. Pyramidale is equally fine in its way; colour pale lilac. La Tour d'Auvergne is a very sweet-scented variety, the semi-double, reddish-lilac-coloured flowers being borne in huge trusses. President Grévy has large flowers, blue, shaded with rose-pink. Mme. Jules Finger is another large-flowered variety; colour rich rose, shaded with purple. Leon Simon has medium-sized flowers; light pink, touched with mauve. For plants of the above-named varieties consult our advertisement columns.

Partridge Berry (Gaultheria procumbens).—At this season of the year Gaultheria procumbens is very beautiful. It is one of the dwarfest and most distinct of berry-bearing plants belonging to the Heath order. For planting as an edging to taller-growing shrubs the popular Partridge Berry has few equals. It grows to a height of from 4 inches to 6 inches, and is a native of the colder quarters of North America, where it is found growing in woods and sandy places from Canada to Virginia. The soil in which it is planted should be composed of peat and leaf-mould, and be kept fairly moist. Loam, if not too heavy, suits it well. Its small white flowers are produced in July and August, and in the autumn are succeeded by a quantity of bright red berries, which remain on the plant until early spring.—H.

DWARF FLOWERING SHRUBS FOR SOUTHERN GARDENS.

(In reply to "S.")

We have pleasure in furnishing you with the names of eight first-rate shrubs suitable for your purpose. We have selected four evergreen and four deciduous kinds. Amongst the evergreen section Rhododendron præcox is a gem. It is of dwarf, compact habit, very bushy, and one of the first Rhododendrons to flower in the open air. Its rose-coloured, bell-shaped flowers are freely produced. Olearia Haasti is another very distinct and beautiful shrub. The merits of this New Zealand "Daisy-tree" are becoming better known. It is ornamental even when out of flower. It is of even, regular growth, and forms a very neat bush. Its stiff branches are well supplied with small, box-like leaves, deep green above, and covered with a silky down on the under surface. The white, fragrant, Daisy-like flowers are borne in clusters towards the points of the growth. It succeeds well in nearly all soils and positions. Berberis Darwini is one of the best of a useful section of hardy shrubs. Its small yellow flowers are borne in racemes, and hang in graceful profusion. The shining green leafage forms a very pleasing background for the flowers. Thrives well in all soils. The Mexican Orange-bush (Choisya ternata) is well known. It is a good free grower, and forms a very compact shrub, with bright, glossy green leaves. The pure white, sweet-scented flowers are borne in clusters with great freedom.

The undermentioned are good deciduous shrubs: Prunus triloba is a very early, spring-blooming shrub. It is a capital grower, and exceptionally free bloomer. In March it is one of the features of the garden, when its long, leafless twigs are wreathed with double, soft pink flowers. Hydrangea paniculata grandiflora is one of the most showy of the autumn-blooming shrubs. It thrives well in all kinds of soil, but in order to produce large panicles of blossoms the plant must be pruned hard back every spring. All the present year's wood should be reduced to a couple of eyes. Exochorda Alberti is not nearly so well known as its congener, E. grandiflora, or, as it is sometimes called, Spiræa grandiflora. It forms a medium-sized bush, growing to a height of several feet, with erect or spreading branches, and oblong, deep green leaves. The snow-white flowers are borne in racemes with great freedom. It flowers about the middle of April. Forsythia suspensa is one of the most distinct of spring-flowering shrubs. It is of good habit, grows

freely, and flowers abundantly in all garden soils. The flowers are deep yellow, and somewhat similar to those of the Naked-flowered Jasminum, with the exception that they are more pendent and very much larger.

GARDEN WORK.*

Conservatory.

This house should be very gay now, but in order to keep it in that condition the watering should be very carefully done, and not a drop of water beyond what is actually necessary be spilt about the house. The ventilation also should be as perfect as possible. By this is meant that the circulation should be continually going on without draughts. Plants are quite as susceptible to cold draughts as we are, and soon show signs of distress if exposed to it. For this reason it is wise when moving plants from the forcing-house to the conservatory, where possible, to leave them in an intermediate temperature for two or three days, as by doing so the flowers will last longer. Now that the Chrysanthemum-shows are over, exhibitors are looking up their cuttings. There is no doubt, I think, that cuttings from plants grown naturally make the best plants for this season. Many exhibitors plant out a few plants of each kind, especially those which are difficult to obtain cuttings from. Cut them down early, and then move the roots into a house where there is warmth enough to produce steady and robust growth. I have this autumn seen pretty well as good blooms on plants struck in March as in the previous November or December, but this cannot be done with every variety. Some kinds require a long season of growth. More attention is now given to the single-flowered varieties, especially for cutting. These are so light and elegant. W. H. Lincoln is a fine variety for late cutting. The growth is dwarf, the foliage is retained till the last, and the flowers keep well. Princess Victoria is a charming late white, and these colours are most in demand for late cutting. Lady Lawrence is good when well done, but it will not bear much stopping. If stopped more than once, the flowers come so small. Phœbus will make a good yellow for cutting. Move bulbs and other forcing subjects to a warm-house to bring them on, so as to have plenty of flowers when Chrysanthemums are going off. A good batch of the Pink Ivy-leaf Pelargonium Ryecroft Surprise will be useful now, just coming into bloom. They make a very effective group with a few small Ferns dotted among them. Small plants of Erica variegata are useful for this work. Small regular fires will be necessary now.

Stove.

It is no use attempting to grow Crotons or the bright-leaved Dracænas in a lower night temperature than 65 degs., and a light house is necessary to obtain colour. Cuttings of the young shoots of Crotons strike freely in a brisk bottom-heat. Dracænas are easily increased by cutting up the naked stems of old plants. Each joint will make a cutting, and pretty well every cutting will root in sandy peat, plunged in bottom heat and kept close. Marantas, beautiful foliage plants, require the same temperature, but are propagated by division of the root crowns. Among flowering plants Thyrsacanthus rutilans is very bright just now. The tube-shaped flowers are attached to long slender thread-like stems from 6 inches to 9 inches long. I have seen this plant trained up under the glass, so that the flowers hang down away from the foliage. Cypripediums in variety are nicely in bloom, especially the different forms of C. insigne in the cool stove. These are not difficult to manage, and they flower freely if rested in cool-house or frame after the growth is made in summer. Some of the Calanthes and Dendrobiums will soon be showing flower, but they require a little more heat. Considering the large number of Orchids annually imported, plants ought soon to be cheaper. But the stock is in comparatively few hands, and so the price is kept up.

Early Nectarines.

The first house ought to be ready for starting beginning of December. The Early Rivers' Nectarine is a valuable addition to the list of Nectarines. Everybody ought to plant it, as it is both early and free bearing, and is the best early Nectarine. It would pay to plant a good-sized house of this Nectarine for market purposes. Humboldti is a good kind to plant for succession. Plant in good loam without any manure, but if the loam is heavy add some old plaster and wood-ashes. Stimulants can be given when the trees come into bearing. Keep the growth thin, but do not shorten much, but get the trellis filled up. A span-roofed house 24 feet wide will be better than a narrower house.

Early Vinery.

Start the pot-Vines in a night temperature of 50 degs. Keep a moist atmosphere. Until the buds show signs of bursting very little ventilation will be required, and as soon as the first leaf unfolds raise the temperature to 65 degs. at night, and keep the day temperature below 80 degs. by careful ventilation. Close early enough to run the thermometer up to 85 degs. or 90 degs. after closing on bright days with a saturated atmosphere. Keep the roots in an even state of moisture.

Cucumber House.

A night temperature of 65 degs. will be high enough. If the house is worked on the non-ventilating system the thermometer may run up to 90 degs. on a bright day if the atmosphere is moist inside the house. But where ventilation is regularly practised a little air should be given when 80 degs. has been reached. Market growers do not usually ventilate, as they want all the fruit they can get in as short a time as possible. But in private places a succession of fruits is more important than a large number at any one time.

The Mushroom House.

One or more beds should be filled now with Seakale and Rhubarb. The crowns of Seakale should be planted from 3 inches to 4 inches apart, and the Rhubarb placed close together, the interstices between the roots to be filled with fine soil, a watering being given to settle the whole down.

Window Gardening.

Hyacinths may still be placed in glasses, and the Joss Lily in water, kept in position by pebbles. The new Begonia Gloire de Lorraine may be kept for weeks at a time in a warm room. Heaths must not be allowed to get dry; and Primulas must not have too much water. Keep Mignonette in a light window.

Outdoor Garden.

The weather continues very mild and suitable for all planting operations. All kinds of trees and shrubs will move with safety now if proper attention has been paid to transplanting in the nursery. My experience has been that it does not matter much when trees, which have been transplanted at regular intervals so as to have fibrous roots, are moved. Of course, some are better for transplanting than others. I have never met with soils so suitable for transplanting than Surrey. In dry, harsh soils mulching after planting is most important, and if a plant is rocked about by the wind it cannot grow. Again, when moved from a sheltered place to an exposed one, very great care will be necessary to prevent failure. I saw a case in point last season, where a number of good-sized evergreens had been planted, and nearly all died entirely through exposure to cold winds in a draughty place. A temporary shelter for a few months would probably have saved them. Carnations and Pinks planted early have had a good chance to get established. If severe frost sets in mulch a little old Mushroom-bed broken up fine, or something of a light, flakey nature.

Fruit Garden.

This is splendid weather for pruning, and as the leaves are all down push the work forward as fast as possible. When the pruning and training of wall and other trees are postponed till later it is very often hurried over and not properly done. After Christmas so many other things demand attention, that the wise cultivator will devote a good deal of time to his fruit-trees now. If a Plum or other tree has been subject to attacks of green and black-flies, now is the time to syringe it with Gishurst compound in solution as hot as the hand can bear. If there is a green slime growing on the bark of any fruit-tree give a dressing of newly-slaked lime. If the trees have borne a heavy crop of fruit and shows signs of exhaustion give a top-dressing of rich compost. There are other ways of manuring fruit-trees, such as making holes with a crow-bar and filling them with liquid-manure, and when the stratum of soil containing the roots has been sufficiently moistened with the rich liquid fill up the holes with good soil. All Peaches under glass should be pruned and trained now; do not prune too hard. So long as there is trellis-room a shoot that is sturdy and well ripened will not require much shortening. But it will be a great advantage to keep both Peaches and Vines as cool as possible till fruiting begins.

Vegetable Garden.

A bottom-heat of 80 degs. or so will soon bring up Asparagus. Plant thickly in the frames if forced on hot-beds, and cover with from 3 inches to 6 inches of light, sandy compost. Mat up altogether till the heads of Asparagus are coming through, but watch the bed to see that the heat does not get too strong, and as soon as the heads are visible air and light will be necessary to give flavour and colour, though some maintain that white Asparagus is better than that which is green, or partially green. But on what has been rightly termed drum-stick Asparagus there is so very little which is eatable, as nearly all the part buried in the soil is simply fibre. Get forward a stock of Seakale as soon as possible, either in the Mushroom-house or in a close frame on a bed of leaves. Leaves in sufficient bulk to ferment are better for forcing than manure; the produce is sweeter and altogether better flavoured. Stir the soil among young-growing crops as Spinach, Lettuce, Onions, etc., but it must be done when the surface is fairly dry. Transplant Tripoli Onions. The Golden Giant Rocca is a good variety. Those who want very early Peas may plant Chelsea Gem or any other favourite early kind on warm border now. Early Long Pod Beans may be planted now. Beans are hardier than Peas.

E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 22nd.—Planted new beds of herbaceous plants for producing cut flowers, including Chrysanthemum maximum, C. latifolium, Scabiosa caucasica, Coreopsis grandiflora, Statice latifolia, Helianthus Soliel d'Or, Rudbeckia Newmani, R. purpurea, Stenactis speciosa, Inula glanduloisa. Also a good-sized patch of several forms of Lilium tigrinum. Pruned Plum-trees on wall. When pruned and trained shall give a good wash with Gishurst compound or a strong solution of Sunlight-soap.

November 23rd.—Rolled lawns. Worm-casts are numerous, but the worms have their work to do, and the top-dressing is beneficial. Pruned bank of Laurels; they are kept low, and the frost does not injure them, as from constant pruning the growth is dense. Planted a wall with Roses, chiefly Dijon Teas, such as Bouquet d'Or, Gloire de Dijon, Mons. Desir, Progress, etc. We have lately been collecting roots of the old monthly or China Roses to make beds.

November 24th.—Referring again to the China Roses, I remember the beds we had many years ago, and want the masses of Roses at unusual seasons we had then. There is a very dwarf, dark variety that flowers until the frost comes late in autumn, and begins again early in spring. These have been given a warm situation. Mrs. Bosanquet is planted against a wall. This is not a show Rose, but it is a never-failing bloomer. Makes a good weeping Rose budded on tall Briers.

November 25th.—Sowed dwarf Peas on warm border and dwarf early Beans. Made up hot-bed for forcing Asparagus. Took up Rhubarb and Seakale for forcing in Mushroom-house; also made another Mushroom-bed in house. The manure, being fresh, one-fourth of loam was added to it to shorten the fermenting period. Rearranged stove. Pruned Allamandas, Bougainvilleas, and other climbers on roof.

November 26th.—Planted a group of Heuchera sanguinea on rockery. This plant seems to want depth of soil and a well-drained site, and this the rockery gives. Planted several groups of conifers in the wilderness, including Cedrus atlantica, C. a. glauca, Picea Nordmanniana, P. Pinsapo, and Cupressus Lawsoniana in variety. Potted more Lily of the Valley and Gladiolus The Bride. We have still plenty of Tuberoses from the bulbs potted in April, and shall have till Christmas or later.

November 27th.—All spare time is filled with trenching in kitchen garden. A little earth has been put over the bulbs of the Celeriac. Veitch's Autumn Broccoli turning in fast, and Snow's Winter coming on. If frost comes the latter will be taken up and laid in trenches. Potted up a lot of dwarf Roses for late flowering, and Deutzias which have been plunged out moved to cold-house. Finished pruning climbers in conservatory.

FERNS.

HARD FERNS (BLECHNUM).

BLECHNUM OCCIDENTALE is a very useful Fern, and may be recommended as one of the best for house decoration. In quite a small state it is one of the best for the fancy pots now so much in use, or it may be grown on to make a good plant for a 5-inch pot. It comes freely from spores, and, grown in a loamy compost in an intermediate temperature well exposed to the light, the young fronds have a beautiful rosy-pink hue, changing to a bronzy-brown and then to a bright fresh green. B. australe is identical with the above, and there are several nearly allied varieties. B. glandulosum differs only in being of more erect growth and of a darker shade of green. B. polypodioides is another slightly different form, having narrower pinnæ, which are slightly twisted. B. latifolium is a larger species, but I have not found this do so well or prove so useful as the three first referred to. Now that the Pterises are grown in such large quantities it becomes necessary to look for something fresh, and any new sorts that can be added are much appreciated, provided they will make good plants quickly. Among the older sorts there are some which, if taken in hand and grown well, may prove very useful. Take Pteris longifolia as an example. When three or four plants are grown in the same pot and treated well it is very useful and quite distinct from the ordinary Pterises of the serrulata type. The Nephrolepises are coming much into use, especially N. exaltata. For hanging-baskets this has no rival. Being readily increased from the rhizomes, there is no difficulty in getting stock. In growing the plants on they like plenty of warmth and moisture and all the light that can be obtained. They do well when suspended from the roof, as it gives the long drooping fronds room for development. After they have made good plants they may be removed to a cooler house, and when hardened off they last a long time. As a compact pot plant, N. philippinensis is one of the best, being of free growth and fairly hardy. Osmunda palustris is not so well-known as it deserves to be. It differs from the North American O. gracilis in being evergreen. Seedlings grown on freely make symmetrical plants. They must not be crowded together or they run up tall and thin, but give them plenty of room and they spread out and make well-furnished plants. This has a pretty bronze tint in the young fronds. In a young state it may be grown in heat, but it is almost hardy. Probably the crowns would withstand frost. Spores do not always germinate freely. A.

Blue Marguerite (Agathæa cœlestis).—This is a useful tender plant with light blue flowers, a colour none too common. It is a mistake to grow it in rich soil; when grown thus it produces a large amount of growth and few flowers. I have it now growing in a narrow border over the roots of Roses in a sunny spot, and in this position it blooms most profusely, the flowers showing well above the leafage. In very dry weather I give it a good supply of water, with an occasional dose of manure-water to keep it growing, and now (middle of October) it is full of bloom and gives a good contrast to yellow Marguerites, Scarlet Salvias, and things of this character. It makes a good pot-plant, but should not be grown too coarse, although there is not much danger of this under pot culture, seeing it is a gross feeder.—JOHN CROOK.

FRUIT.

PLUMS IN POTS.

There are few amateurs that grow Plums in this form, but when the initial stages are mastered it is simple indeed. It has its advantages, too, as the trees, when grown in pots, do not occupy the house very long, and it may then be devoted to other uses. The Plum in many gardens can be grown so well in the open that the house may, with advantage, be devoted to more tender fruits, such as the Peach and Nectarine. On the other hand, in cold localities, or for fruits of special quality, pot-trees have much to recommend them, if the right varieties are grown. It may be well to give a list of the finest kinds for pot culture. Some of the best in ordinary soil are when grown under glass too robust unless the cultivator gives much attention to stopping and ventilation, both needing more than ordinary attention with gross growers, especially if given too much food under glass.

If the trees are not well attended to as regards moisture the fruit drops before it is matured. I do not advise pot-culture for amateurs who only have one house.

The tree illustrated shows splendid culture, not only being well laden with fruit, but the wood is short jointed, with abundance of fruiting-spurs—indeed, the kind of wood needed in pot-culture. Gross growth means little fruit and loss of time and labour in culture. On the other hand, Plums are more readily managed than the Peach and Nectarine. Once a good foundation is formed the trees can be purchased at so reasonable a rate that no one need fear the cost if they pay attention to culture.

A few words as to culture may not be out of place, and now is the time to make a good start, as by potting up trees in November or December the groundwork is prepared for future success. To amateurs who have little knowledge of the modes of growth I would certainly advise purchasing trees in a measure prepared—say, at least two years old. At this age the first cutting back will have been done by experienced hands, and the groundwork prepared. I am aware such trees are a little more costly, but the price is so small compared to the gain that trees of the age noted should have the preference. Trees termed yearlings, dwarfs, or maidens—that is, one-year-old trees from the time of being budded—can be purchased at ten shillings a dozen, whereas those two years or a little older, grown for fruiting in pots, may be had at a little more than double the cost. These are the trees for those who have not the means to grow maidens, or who require to have fruit in a season after purchasing. Yearlings or maidens signify trees of one year's growth, unpruned and just ready to be formed into a dwarf fan-trained tree or espalier, bush, or pyramid. The tree illustrated would be termed a bush, and would probably be from three to five years old. These fruit freely the third year, and will with good culture continue fruitful for many years. The best results are obtained from young trees after the third year. Trees when purchased should be potted up at once as firmly as possible in a good compost—say, three parts good loam to one of old mortar-rubble and burnt wood-ashes, with a little bone-meal. Of course, the wood-ashes if not procurable are not a necessity, but I strongly advise the mortar-rubble. It builds up a sturdy growth. Failing this, use road-scrapings, with plenty of grit. The soil should not be too wet to make it sticky, and firm potting is needful to prevent drought in summer. After the potting we stand our trees under a wall. The pots are plunged in ashes or fibre to prevent frost reaching the roots, and if very wet it is well to throw off the excessive moisture to prevent roots getting too wet.

Twelve-inch pots are a nice size, and it is well to repot every year—say, in October—and only give as small a shift as possible, and for two-year-old trees 10-inch pots will be ample at the start. After the winter is over the cultivator will decide if he requires early fruit. My advice is, do not force at all, but merely give the trees a little warmth and house shelter, as after potting up, before the trees can bear a full crop, they must have ample roots to support that crop. The first season a few fruits should be allowed to mature, as the trees will then be building up stores for future work. Many growers the first season leave their trees in the open until they flower, and when in flower use very little heat. In this way they get better wood. During the fruiting process avoid extremes of any kind, and in fine weather give air freely, and as the fruits increase give ample supplies of moisture or liquid-manure. After fruiting the trees, plunge them in the open, and well attend to them in the way of moisture, in dry weather occasionally damping overhead—a point that should not be omitted, as there is a nasty white-fly which attacks the Plum, making the foliage very dirty. This is caused by heat; often want of moisture also. Repotting should be always done in October or early November. Remove large, coarse roots from the sides of the ball of earth, and use size of pot as advised above. Plunge the trees in the open until started for fruiting. The house then can be utilised for eight months or nearly so for other plants or fruits. I have seen excellent crops of various kinds from houses used for pot-trees.

The Varieties are not numerous. The one illustrated is a late June fruit, and a very fine one. I will name them in their order of ripening. The Czar is a grand pot-Plum in season in the open early in August, a heavy cropper, fruiting freely in a young state. It is an upright grower, and one of the most reliable. I do not say it is a

Coe's Golden Drop Plum in a pot. From a photograph by Mr. W. J. Dewar, High Terrace, Arbroath, N.B.

Gage Plum in quality, but it is sweet and refreshing.

Oullin's Golden Gage is a specially good dessert variety, in season the middle of August. The fruit is a very handsome yellow, and, though the tree is a slower grower than the first named, on account of its quality, its crop, and size, it should be in all collections.

Transparent Gage is another excellent variety for pot-culture. It is an early September fruit, rich, juicy, and may be classed as one of the finest dessert Plums. It grows well with restricted roots, and may be termed a good amateur's fruit in any form, as in the open this variety bears freely, and with glass protection is very rich indeed.

Jefferson is a splendid Plum of the Gage type, very large, a grand dessert fruit, and noted for its quality. It does well in most soils, and grown under glass is specially fine. In season the early part of September, and may be forced readily.

A Plum which should not be omitted is

Denniston's Superb, a Gage Plum, and in season earlier than Jefferson. This should have preference over Jefferson, but if both are liked the two should be in all collections. This year it was the earlier of the two. It is a splendid fruit, sure cropper, and a grand pot-tree.

Bryanstone Gage is a splendid fruit. It is not so prolific with me as Jefferson, but must be included for its quality, large fruits, and appearance; in fact, it rarely fails to crop and give good fruits.

Reine Claude de Bavay is another excellent dessert Plum, rich, juicy, and good in any garden, grown on wall or in bush form. It is one of the best for pot culture.

Late Transparent Gage is a very fine fruit, and promises to be a good pot-tree, but I have not grown it largely.

Coe's Golden Drop, the one illustrated, is a grand tree for pot culture, the fruit heavy, longer than any other variety, and crops freely. This is a large golden fruit, much liked.

I have not named distinct cooking varieties. I do not advise them for pot-culture, but there are other dessert kinds which may be added to this list. W.

THE BEST APPLE.

To the Editor of "Gardening Illustrated."

Sir,—With regard to the interesting letter in Gardening, November 13th, under the above heading, "J. A. L.'s" is not the only case of its kind which has come under my observation. At the present time I know where there is a row of seedling Apple-trees which bear freely annually, and which were raised from seed saved from the best varieties in the garden. Although none of the fruit can be compared with that from the parent trees, yet all of them have qualities which justifies their being retained—viz, for freedom in bearing and from canker, for fair flavour and appearance. However, while we have such splendid varieties as Cox's Orange Pippin, Sturmer, Ribston Pippin, Scarlet Nonpareil for dessert, and Prince Albert, Bismarck, Wellington, Blenheim Orange, and New Hawthornden for the kitchen, I fail to see the wisdom of bothering one's-self with raising Apples from seed, unless one is endeavouring to raise something superior to those mentioned above.

If I was confined to one Apple, undoubtedly it would be Cox's Orange Pippin. Unfortunately, we have a great variety of Apples here, but none equal to this for flavour or freedom of bearing. It absolutely never fails to bear a crop of fine fruit. I am gradually destroying the inferior sorts and replacing them with this variety and Ribston Pippin for dessert, and Prince Albert, Wellington, and Bismarck for the kitchen. But "J. A. L.'s" tree is not without merit, and is quite worth every attention. I should advise him to perpetuate it by raising young trees from cuttings, which can be readily done by placing them in pots filled with soil approaching clay, with a little sand added. They should be put in now and placed in a cold-frame for the winter, where they will root early next spring, and can be planted out next autumn. Many people think it impossible to root cuttings of Apples or Pears, but they will root almost as readily as a Gooseberry. I found this out while turning out my Freesias. I placed some of the pruning of Apples and Pears round the edge of the pots to keep the Freesias from falling over the sides, and when I turned them out the following autumn I discovered many of the Apple and Pear cuttings had rooted all round the sides of the pots. I fear, however, that the practice of propagating fruit-trees from cuttings or layers will never become common, that of grafting and budding being so much more rapid and less expensive. Of course, I am speaking from the nurseryman's point of view. I heartily wish, however, it was much less common, especially so with shrubs. It is very annoying to see such things as Genista Andreana, Lilacs, and many other things, dying from its evil effects. T. Arnold.

The Gardens, Cirencester House.

Sir,—"J. A. L." asks which is the best Apple. I should say Bismarck, but it appears to be little known, as I find it given in very few nursery catalogues. I bought a dozen two-year-old trees, budded on Paradise-stock, three years ago, and have had a large crop every year of magnificent Apples, very large, beautifully coloured, excellent in flavour for dessert, and for baking unequalled. I measured one this year 14¼ inches round, weight 1 lb. 2 oz., and I had many nearly as fine fruits. I would advise amateurs to select the Bismarck Apple.

Henry Newson Garrett.

Sydney-place, Bath.

THE COLUMBINES.

The Columbines are a charming family of hardy plants, of which we give several illustrations. Among them may be found great variety in the way of colour—white, rose, buff, blue, and purple, and also stripes and intermediate shades even in the same flower. Then amongst our American introductions we have yellow, orange, and scarlet. Besides colour, too, there is also considerable variation in the shape of the flowers. In some the petals are reduplicated, and in the very double forms of our common garden Columbine, on removing one of the five petals, which are usually distinguished by their brighter colour and almost invariably by the presence of a receding spur-like appendage, it will be found that a series of from six to a dozen, or even more, petals are beautifully arranged one inside the other. Setting aside any economic value the spur-like processes may have, they not only form a pleasing addition to the flower, but they yield well-marked and constant specific distinctions, and in fact have given the origin to the name, both in its botanical and English form—Aquilegia, from aquila, an eagle, in allusion to the group of spurs incurved and almost hooked at the points, like the talons of the bird in question; and Columbine, from the similarity that the termination of each individual spur has to the short, slightly-hooked bill of the dove, columba. The following selection represents such species as I would recommend for general cultivation:—

A. cœrulea is a very charming kind, the spurs of the flowers being very slender, the colours being blue and white. It grows nearly 2 feet in height, and succeeds well in the mixed border where the soil is moderately light and well drained. Seeds should be sown annually, as the plant is not very perennial. This Aquilegia might well be freely grown in a reserve part of the garden, where its flowers could be gathered for the house, and their dainty form and colouring are welcome in all choice decorations. As soon as the seed is ripe sow it under glass in pots of light soil, and place in a cool frame near the glass.

Alpine Columbine (A. alpina) is an alpine flower of much interest. The spurs are shorter and thicker than in the case of A. vulgaris, whilst the petals are broader and more expanded. The colouring is blue and white, the leaves being greyish in hue. The plant grows between 12 inches and 18 inches in height.

A. Witmanniana.—This is closely allied to A. glandulosa, but is distinct from it; it is very vigorous and free. The flowers are not so charming as those of A. glandulosa, the sepals deep purple set off by a white corolla.

Californian Columbine (A. californica).—This is the strongest grower of all the American species. The tendency of the plant is to produce one bold woody stem, which, under favourable conditions, will rise to the height of 3 feet; the sepals are orange-coloured and blunt-pointed, being closely adpressed to the petals, which are also blunt; they give one the idea that they have been trimmed round with a pair of scissors. The spurs are long, and bright orange.

Canadian Columbine (A. canadensis).—The flowers of this are of much smaller size than any of those just described; this, however, is amply compensated for by the brilliancy of the scarlet colour of the sepals and the erect somewhat capitate spurs, and the bright yellow of the petals. The true A. canadensis is a slender grower, scarcely exceeding 1 foot in height, with sharply-notched leaves.

Common Garden Columbine (Aquilegia vulgaris).—This is a familiar occupant of every cottage garden, in which it grows with vigour, and increases itself by means of seed with a persistency and a power of variation that is quite surprising. Whether its naturalisation in this country was contemporaneous with that of the ancient Britons is perhaps doubtful, but, be that as it may, it has become thoroughly at home, and no one who has once seen it wild will readily forget the combination of grace and beauty which it presents. In order to stimulate those who possess extensive wooded estates to its cultivation or establishment along the margins of drives, where shelter is afforded, in one garden in North Lincolnshire this Columbine raises its stately erect stems to a height of 3 feet; and in the month of May, when the Lily of the Valley, which grows naturally by acres and acres, associates with its beauty the further property of delicious perfume, the charm of a drive or walk, especially after a gentle shower of rain, surrounded by such associations, is greater than words can convey. There are thousands of similar situations in domains throughout the country where the seed of the one might be scattered and where the roots of the other might be planted, the rest being left to nature.

Golden Columbine (A. chrysantha).—This is a very fine, strong-growing plant, sending up from amidst a mass of delicate glaucous leaves a number of stems to a height of from 2 feet to 3 feet. As the specific name indicates, the flowers are of a golden or rather bright canary-yellow, which remarks as regards colour equally apply to sepals, petals, and spurs alike. It is a native of the Rocky Mountains and California, and has but one fault—that it develops its tender leaves very early in the season.

Green Columbine (A. viridiflora).—This has flowers in which the petals as well as the sepals are of a greenish colour, with here and there blotches of purple; its colour, therefore, can be no recommendation. The plant is a vigorous grower, and a native of Siberia.

Pyrenean Columbine (A. pyrenaica) bears a very close relation to A. alpina. The spurs are longer and more slender, the petals smaller and less expanding, the flower-stem dwarfer, less branched, rarely carrying more than three blossoms, the divisional lobes of the leaves are smaller and rounder, and the colour more glaucous.

Siberian Columbine (A. glandulosa).—This is a lovely plant, tufted in growth, and with bold flowers, blue and white in colour, the sepals being intensely blue. It is a species worth taking much care of, and requires a sandy soil of good depth. Always have seedlings on hand in case old plants perish. The roots may be divided when the plant is in full leaf, not when at rest.

Skinner's Columbine (A. Skinneri).—This, though evidently allied to the previous species, is abundantly distinct. The flowers are supported on long slender pedicels, the sepals being greenish-coloured and lanceolate; the petals are small and yellow; the spurs are nearly 2 inches long, of a bright orange-red, and attenuated into a slightly incurved club-shaped extremity; the leaves are very glaucous; the flower-stems acquire a height of 18 inches to 2 feet. Though coming from so far south as Guatemala, owing to the fact that it is met with in the higher mountain districts, it is nearly, if not altogether, hardy, and should be more frequently cultivated than it is.

There are many other Columbines, the Kew list of herbaceous plants giving the following, but those we have mentioned at some length are the most important: A. alpina, A. buergeriana, A. cœrulea, A. canadensis, A. chrysantha, A. einseliana (varieties of this being Bertoloni and thalictrifolia), A. flavescens, A. formosa, and A. glandulosa (vars. = tricolor, longicalcarata, parviflora, secunda, unicolor), A. Kitaibeli, A. nevadensis, A. olympica, A. oxysepala, A. pyrenaica, A. sibirica (var. alba), A. Skinneri, A. Stuarti (Garden Hybrid), A. viridiflora, A. vulgaris (vars. = alba, atrata, and montrosa).

Hybrid Columbines.

During the past few years many beautiful hybrids have been raised, the result of crossing A. cœrulea with A. chrysantha. This has given us a strain of great beauty, as well as remarkable for diversity of colouring. A single packet of seed of A. cœrulea hybrida will produce many distinct forms, all worthy of cultivation and making a most pleasing feature in the flower garden. Nothing can possibly be more charming than a bed entirely composed of these delightful plants. In a cut state they are equally valuable. In the floral arrangements of the dinner-table these are specially valued on account of their light and graceful bearing. As pot plants for the conservatory they are very pleasing and most distinct. It is worthy of note that when established in pots during the previous year these plants will endure gentle forcing. In the open garden they succeed well in most soils, preferably such as are fairly well drained. One of the best for the border is A. chrysantha, with golden-yellow flowers. This will grow 3 feet high in good soil, and nearly as much through when fully established. A. californica and its hybrids are very showy, the flowers of an orange-scarlet hue on a branching bush 2 feet or more high. A. canadensis has scarlet and yellow flowers, which, however, are somewhat smaller than in the varieties named, but this is more than made up by their greater brilliancy. A. pyrenaica is also a useful species with lilac-blue flowers, and the plant is dwarf in habit. The latter remark also applies to the Rocky Mountain Columbine (A. cœrulea) and to A. glandulosa. Both these are very charming, though very distinct. The former has blue and white flowers and delicate thread-like spurs, while the latter, with its rich dark blue sepals and white petals, is very conspicuous. Another distinct type is that known as A. sibirica, though by no means so graceful or beautiful as the above.

Aquilegias should be regarded more as biennials. In deep and rich ground seedlings make rapid headway, and if transplanted when quite young so much the better. From this time they should not be disturbed again till discarded altogether. Divided plants rarely give satisfaction even if they survive. Fresh seeds may be obtained in May, and if sown thinly in the open ground will make excellent plants for flowering another year. J.

ARRANGING A BORDER.

(In reply to "N.")

"N." asks if one of the borders I described in Gardening would be suitable for a south border very much exposed to strong west winds. The border is from 3 feet to 4 feet wide, and immediately in front of the house. "N." wishes to plant it with bulbs that will give a display of bloom the greater part of the year. I do not think this will prove satisfactory. If it were mine I should plant German Irises in it all over (at a distance of 1½ feet apart down the length of the bed, and have three rows of them). Between the three rows of Irises I should plant two rows of dwarf autumn-flowering Phloxes and clumps (three bulbs to each clump) of Lilium davuricum erectum alternately, allowing a space of a foot between the Phloxes and Liliums. Then in the 1½ feet of space between the Irises down the length of the bed I should plant two or three white-flowering Foxgloves. These are easily raised from seed, and would require replanting with young plants every two or three years. All the rest of the plants I have named are perennial. Having planted these, I should net in Crocus bulbs and scarlet Van Thol Tulips alternately, at a distance of an inch apart, everywhere the soil was not actually occupied with other plants.

I think if "N." planted her bed thus she would find that she had a very bright effect during March with Crocuses, April with Tulips, May and June with Irises and Lilies, July with Foxgloves, and August and September with Phloxes, and that these plants would not be much affected by the wind. "N." also asks if it would be a good plan to plant Ferns in a border which is entirely shaded from the sun during the summer months by a large Copper Beech. I do not think so. There is no tree so injurious to undergrowth as a Beech, and I should not attempt to grow anything under it. I should do away with the border, as it certainly will always prove unsatisfactory.

Mrs. Robert Jocelyn.

Arranging shrub and flower garden (*Miss R.*).—"Miss R." wishes me to tell her how to arrange her shrub and flower garden. She says she cannot describe it properly, but if she will send me a sketch of it through the Editor I will help her as well as I can, and try to describe it in such a way that it may be useful to other readers who wish to rearrange a garden. She asks if she could plant a sexangular-shaped bed with Roses, and an underplanting of bulbs, as I once arranged a bed in Gardening. She could, of course, do so. The distance from Rose-tree to Rose-tree ought not to be less than 2 feet.—Mrs. Jocelyn.

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Olympian Columbine (A. olympica).

Californian Columbine A. californica).

Flower of Rocky Mountain Columbine (A. cœrulea).

A. viridiflora.

Siberian Columbine (A. glandulosa).

Hybrid Columbines.

A White Columbine.

Double Rocky Mountain Columbine (A. cœrulea fl.-pl.).

THE KITCHEN GARDEN.

SAVOYS.

THE Savoy is one of the most useful of vegetables, and can be so readily grown that little need be said as to its culture. My remarks will be brief, merely advising extended culture for winter supplies. The Savoy Cabbage, as it is known, is mostly planted in the summer, often much too early, with the result that they turn in before the cold nights have mellowed the hearts, and are then of unpleasantly strong flavour. This has brought this useful vegetable a bad name. There are other drawbacks too. The Savoy, when sown too early, splits badly as soon as severe weather sets in, but if the seed is not sown till May will stand a severe winter with little injury. I am not sure that many of our winter vegetables, as Kales, Cabbages, and such-like, would not be much better sown later. The usual method is to sow in March and not leave the plants too long in the seed-bed, with the result when planted they receive a great check and do not grow away freely. It is far better to sow later and have healthier young plants, which in the end give less trouble, and are a shorter time on the ground. For Winter Savoys I would advise sowing in May, and planting out the end of June or early in July. If the plants are at all strong they make a sturdy, firm growth, and short stem varieties are not numerous. I prefer a medium-sized plant to the very large Drumhead. The amateur can grow a greater quantity in a small space, whereas the large kinds take up much room, and if curly Savoys are needed there are early kinds which turn in quickly.

EARLIEST OF ALL is a very fine amateur's variety, conical in shape, leaves a pale green, small heads, and when cooked sweet and tender. This sown in April is ready in August.

DWARF GREEN CURLED (see cut) is another excellent small variety, and though early, stands frost well. This we usually sow for first use in the winter—November or earlier. There are several types of this variety under various names, but the above name is the most general. This variety being of such compact growth may be planted very close. It is a true amateur's vegetable on account of its size and good qualities.

GOLDEN GLOBE is a novelty worth room, being of a bright golden colour, and esteemed for exhibition, but is less hardy than the green types. For autumn or early winter use the

DWARF VIENNA is excellent. This is a favourite on the Continent, and a very quick grower. I have sown seed in June and got nice heads for winter use. Probably the best midwinter Savoy is

DWARF EARLY ULM. This is a medium size Cabbage, between the Drumhead and Dwarf Green Curled, very hardy, of good flavour, and anyone may rely on its doing well in poor soils. The

DRUMHEAD, the largest variety grown, is excellent for latest crop. Plants from seed, sown in May, are not so coarse as those sown two months earlier. It is a valuable market variety, and commands a ready sale after Christmas. It keeps well if not crowded or sown too soon.

There are others, such as De Vertus, an equally large, late kind, but much like Drumhead in quality; but the above list will suffice for all. Three kinds are ample—Earliest of All, Dwarf Ulm, and the Drumhead for late use, and to get them in succession it is well to make three sowings. W.

Forcing Chicory.—Small batches may be lifted and put into force for salad, for, unlike most forced vegetables, no season of rest is necessary for this, and I usually get the first few cuttings of blanched hearts to push through the still green leaves. The extreme ease with which these hearts can be produced and their delicate and attractive appearance in the salad bowl should induce all growers to keep up a continuous supply throughout the winter months, when Lettuces cannot be had at their best. To do this it is only necessary to put in a few roots with each batch of Seakale, and to ensure perfect darkness during the time of growth. This will prevent much of the bitter taste that is sometimes pronounced to be objectionable. The roots with me do not run quite so big as usual this year, but they are big enough, and I always select the largest for salad, putting the smallest on one side until they are wanted for forcing green to make an agreeable change when green vegetables are getting scarce, as I find it then and always a much appreciated vegetable in that state. Should the roots be too long to be introduced bodily into the forcing quarters, they may be shortened by at least one-half without injury to growth. When all growth outdoors has ceased, and the crowns can be caught in a dry state, the whole stock of roots should be lifted and stacked, crown outwards, in a cool, dry shed, where they will be readily available to be drawn from as required. I do not advise this, in consequence of the roots being at all tender, for as a matter of fact they are thoroughly hardy, but it sometimes happens that, when lifted direct from the open ground and put in to force when wet or frozen, the remains of old leaves rot and taint the new growth as it comes up, so lifting is recommended as a preventive of this.—R.

Savoy Cabbage Dwarf Green Curled.

Earthing late Celery.—The latest Celery planted in trenches will now need earthing, on similar lines to those recommended a few weeks back for the main crop, as very little further growth will be made by the outer leaves, and the hearts, which are never at a standstill during the winter except when under the influence of sharp frost, will make better progress when closed in with soil. I recommended when writing of planting late Celery that some of the very latest plants should be set out thickly on the level and in bed fashion; these will also now require attention, and will provide excellent material for the kitchen if some protective and blanching material is placed between the plants. My practice is to go first of all over the plot, giving each plant a tie near the top; then a good bed of dry leaves is worked in and around the plants, the tops only of which should appear above the leaves when finished. Though such Celery as this would be perfectly safe without protection, I like to have the leaves gathered and packed in soon after they fall, as there is then less chance of carrying with them to the plants a numerous colony of the little black slugs which so soon infest newly fallen leaves, and which would get into and spoil the Celery. If leaves are not available, clean straw or Bracken will answer the purpose of blanching equally well, but long litter from the stables I do not like, as it is apt to taint the Celery.—E.

Mushrooms outdoors *(Doubtful).*—No doubt you are somewhat doubtful when informed that Mushrooms are produced largely for the London markets in the winter by making up beds at the bottom of walls, under hedges, and in Seakale pots. All the same, immense quantities are grown for market outdoors through the winter, but chiefly in long, ridge-shaped beds. Manure from stables is collected. The more horses are fed on corn in these places the better, as the manure is collected in cart or vanloads; it is well shaken up and frequently turned, the long straw being removed for covering up later. Whilst frequently turned—that is, three or four times at least—if the dung seems to be heating dry it should be well sprinkled with water to sufficiently moisten it, and also to check rapid heating or fermentation. When quite ready the manure is built up in ridge form on a dry site, being some 2½ feet wide at bottom and perhaps 3 feet high in the centre of the ridge. This should be built up solidly and well trodden in the operation. When complete, and after a few days begins to heat, the surface of the bed all over should be spawned by putting in, hard pressed level with the surface, pieces of spawn cake, one cake being broken into about eight pieces. Then, well patted down with a spade over the whole of the bed, cover with a coat of good loam, such as will bear patting even and smoothing over. A gentle sprinkling of tepid water may be given all over, then the bed covered thickly with long litter, and left. Mushrooms should be produced in about six weeks. New beds should be formed each week from September to April to give a succession. That is the common market outdoor method of culture.

Horseradish—With the soil in good order it is immaterial at what part of the dormant season Horseradish-beds are made, and the work is frequently left till after the new year, but in those gardens where there is a fixed and very limited staff it is well to take advantage of the present slack season to get all such work done. A neglected plot, for even such a hardy subject as Horseradish, never pays, as the roots become tough and do not swell to a useful size after they become thickly matted together from having occupied the ground too long. In our light soil I do not find that planting on the horizontal method, laying

the sets only a few inches below the surface, as practised by some growers, is satisfactory. I get the best results by digging deeply, burying a good quantity of manure some 18 inches deep, and then planting straight and clean pieces of root with a dibber in holes which nearly reach the manure. By these means I obtain shapely roots, which may be used with very little waste. —R.

THE BRUGMANSIAS.

There are several greenhouse plants which when grown as standards, with clean stems about 4 feet high, can be used for conservatory decoration with the best effect, either occupying isolated positions or grouped among ordinary bush-shaped kinds. The different kinds of Brugmansias, especially the white varieties, are excellent used in this way. The plants can be put away anywhere out of the reach of frost during the winter, leaving the room they would occupy for other things. The soil should now be kept much drier, and the plants should be cut close in, leaving only a sufficient number of eyes to furnish shoots that will form the heads next summer. The plants may then be put under a plant stage, or in any spare corner in a house or pit where the frost can be kept out, leaving the roots for the next two months in the partially dry state named. The buds will move slowly and be in a condition, with additional moisture and a little warmth, to break into growth early in the spring.

For the back wall or end of a roomy conservatory Brugmansias are of great use. Where root-room is limited within the structure, they do equally as well in an outside bed, with the stems taken through the wall in the way ordinarily practised with Vines.

Brugmansia suaveolens at Thelwall Heys, Warrington. From a photograph by Mr. T. Bixtles, Warrington.

The illustration shows a splendid specimen of Brugmansia suaveolens, growing in the garden of Mr. Long, of Thelwall Heys, Warrington. Mrs. Long sends the following note respecting it: "The plant had more than three hundred blooms out at once, and in moving it a side bough was broken off which had nearly fifty buds upon it. I have had plants before with upwards of one hundred blooms, but never one so good as this, and all my friends advised me to send the photograph to Gardening Illustrated The name of Mr. Long's gardener is Richard Poulton."

Streamside plants.—I should be much obliged if "F.," on page 513, would say if the bulbs and plants mentioned in "Streamside Vegetation" would succeed if the streamside were occasionally flooded, but clear of overhanging trees? Also if the streamsides were overhung with trees?—Newton.

*** An occasional flooding during the winter will not harm the dormant bulbs. We have had them under water for three days without any injury being done to them. Spanish and English Irises would be the most likely to suffer from excess of moisture, and should, therefore, be planted where they are not likely to be submerged. The same applies to such Irises as retain their leaves through the winter, such as I. stylosa, I. germanica, as well as Libertia grandiflora. Deciduous trees are not harmful to spring bulbs planted beneath them; indeed, it is in such situations, clustering round tree-boles at the water's edge, that Snowdrops, Narcissi, and Scillas flourish best, and are most lovely. Nothing can be expected to succeed under the shade of evergreen trees, and it is therefore useless to plant bulbs or any other subjects in such a position. "Newton" would find it better to plant the spring bulbs beneath the deciduous trees, and those that flower later in the year in the open spaces of the banks.

CHRYSANTHEMUMS.

LATE-FLOWERING CHRYSANTHEMUMS.

Notwithstanding the large number of varieties of Chrysanthemums, there is not a very wide selection of sorts that are naturally late-blooming, or that will keep in a fresh state until December or January without some special means being taken to preserve them. I think the sort most generally seen in a perfectly fresh state is Golden Gate. Its tawny-yellow shade of colour is one that finds much favour, and, apart from growing it as a large specimen flower, it is equally valuable for cultivating in the ordinary way for a quantity of bloom. Niveum is now pretty well known, and is a most valuable White Chrysanthemum for a late supply, and keeps fresh a long time. L. Canning in many respects is unequalled for the growth of medium-sized white flowers for Christmas, but the sort has a habit of producing a number of blind buds with some. Its growth is the taller of the two, but the flowers are beautifully light in formation, and the stems long and stiff. Le Moucherotte is likely to make an excellent sort to grow for late bronze-coloured blooms. The shade is rich and the flowers quite double in every case. Le Rhône is a first-rate yellow, the plant very dwarf and free flowering. I think it will run W. H. Lincoln hard as the best late yellow. The latter, although extra fine in habit, has blooms a trifle wanting in lightness of formation. Duchess of York is another pretty shade of yellow late in the season. Its blooms, too, are most graceful in form. As a November variety it has fallen away from its early reputation, but one should not discard the sort by any means if a late supply of bloom is required. A charming yellow is William Filkins. It is one of those tiny wiry-floreted blooms, and will be found very useful for vases where a light arrangement is needed. This sort is naturally late, and may be had at Christmas without difficulty. Elmer Smith is a fine kind. The colour, rich dark crimson, is wanted late. It has handsome drooping petals and the blooms last fresh for a considerable time. In Pluton we have a late crimson likely to be useful for the growth of medium-sized flowers and the habit is dwarf. Beauty of Castlewood is a good late sort for show blooms, but it is a bad doer, and therefore of little use to the majority of growers. Graphic appears to be excellent late

in the year. Early in the season the flowers are white, but from late buds they are light pink, very pretty, too, both in colour and form. Sunstone has blooms of a striking shade of buff-yellow. This shade should make it valuable for a late supply. Rose Wynne is a very handsome flower. The form and colour (white, slightly tinted) appear perfect late in the year. This is a first-rate sort to keep a long time in a fresh condition. Mme. Rozain, pearly-pink, makes a fine large show flower, and is also good when the blooms are not disbudded. A lovely pink variety named Framfield Pink is likely to find much favour when better known. It is not large, but in shape it is pretty, and the colour is free from that washy character too often seen. Under gaslight the colour is remarkably striking. Mrs. H. Weeks is a good white flower late in the year, as those who fail to obtain blooms of it in November will find.

The single Chrysanthemums are well adapted for late flowering; thus their value as useful subjects is greatly enhanced. The best are Admiral Sir T. Symonds, large yellow; America, white, shaded; Golden Star, yellow; Miss Annie Holden, light yellow; Miss Mary Anderson, blush-white; Miss M. Wilde, rosy-cerise; Eucharis, white; Purity, white; and Treasure, yellow. H.

Chrysanthemums—when to propagate for exhibition *(Baron)*.—Many growers have to take their cuttings when they can get them, as it is not always possible to obtain cuttings on plants which have been subjected to exhibition treatment—at least, cuttings of a desirable kind. It is always a good rule to secure a fresh supply of stock from rested plants, such as most of the specialists grow for the purpose. In many cases these plants have been grown outdoors, or plunged in the open ground in pots and lifted as occasion requires. In a short time after lifting they simply bristle with a large number of clean and healthy cuttings, and if stock from such plants can be obtained when required a long season of growth may be given, and the best results must naturally follow. Of your Japanese sorts we should be disposed to insert cuttings of the following towards the end of the present month or early in the next: International, Phœbus, Pride of Exmouth, Col. W. B. Smith, Pride of Madford, Wm. Seward, Madame C. Capitant, Mons. Edouard André, and Prefet Robert. We distinctly advocate early propagation of these sorts, with the express object in view of inducing the first crown buds to develop early next season, and thus give the grower an opportunity of sending on the growths to the third run—*i.e.*, the shoots producing second crown buds. Should this be effected in good time, handsome, full flowers of rich colour should naturally follow. G. C. Schwabe, Edith Tabor, Mons. Geo. Biron, and Waban might be followed a fortnight later with good results, selecting first crowns, while in the case of Viviand Morel and Mutual Friend, January should answer very well for these. Of the first named, providing nice clean and healthy cuttings can be obtained, good results may be achieved with plants rooted so late as May even. Of the incurved sorts you name, we should prefer to propagate cuttings of Lady Isabel, C. H. Curtis, Queen of England, and Lord Alcester, during the last few days of November and the first week in December, having the same object in view as in the case of the Japanese sorts propagated at the same time. Follow shortly afterwards with Major Bonaffon, James Agate, and Princess of Wales, finishing late in January with Baron Hirsch, retaining first crowns with the last two sets.

Chrysanthemums—six dwarf sorts for outdoor culture *(Wykehamist)*.—There are a large number of excellent sorts which may be considered dwarf, their height varying from 18 inches to 2½ feet. We confine our selection to the best colours for your purpose—viz., yellow, bronze, orange, or pink sorts. Mme. la Comtesse Foucher de Cariel, bright orange-bronze, rather small flowers freely produced, beautiful branching habit, splendid plant for cutting useful sprays of blossoms, height about 2 feet, blooms in mid-October, most robust constitution; Mlle. Renné Cohn, a beautiful pale flesh-pink, splendid constitution, height about 2½ feet, September and October bloomer; Bouquet de Feu, a lovely shade of bronzy-cinnamon, free flowering and dwarf, good October variety; Ivy Stark, a wonderfully free-flowering sort, colour orange-yellow, seen in perfection during September and October, height varying from about 2½ feet to a few inches more, splendid grower; Francois Vuillermet, a capital branching plant, with long footstalks to each bloom, and these are freely developed, colour lilac-pink, height about 2 feet, good constitution, a capital sort for early October; and Norbert Puvrez, a pretty plant 18 inches high, colour golden-salmon, blooms during late September. These should answer your purpose in every particular. You had better send your order to any well-known Chrysanthemum specialist at once, asking that rooted cuttings or plants be sent to you early in the spring. This would then give you plenty of time to pot them up and grow them on in a cold-frame preparatory to their planting out during the latter part of May.

Chrysanthemums—six tall sorts for outdoor culture *(Wykehamist)*.—We have pleasure in recommending the semi-early sorts for outdoor culture, as you are more likely to get a fine display of these before the hard weather sets in another season. It is next to useless to make a selection of the latter sorts, as these are invariably cut down by severe frosts early in November at the latest, seasons such as the present being very few and far between. You ask for yellow, bronze, orange, or pink. We can confidently recommend the following Japanese sorts: Gloire de Mezin, splendid reddish bronze, height about 4 feet, blossoms during October, good constitution; Vice-President Hardy, grand free-flowering sort, colour yellow, striped and shaded red, height about 4 feet, flowers during the latter part of September and October, robust constitution; Albert Chausson, a pretty flower with long florets narrow and twisted, colour orange and tipped yellow, between 3 feet 6 inches and 4 feet; Notaire Groz, a free-flowering variety with long footstalks, colour pale pink-mauve, height between three and four feet; Mons. M. G. de Dubor, profuse blossoming sort, colour yellow, suffused and tinted bronze, height somewhat under 4 feet, flowers during September and early October; and Yellow Source d'Or—this is a rich shade of orange-yellow and quite distinct, height about 4 feet. There are no sorts which may be considered really tall which partake of the colours you ask for. There are shades of mauve, purple, and other less interesting shades to be had in good quantity.

Chrysanthemums for exhibition for beginners *(Constant Reader)*.—We are always very pleased to assist those in a difficulty, more especially those just beginning to take an interest in any gardening subject. We will now answer your queries somewhat briefly, and leave you to succeeding issues of GARDENING for fuller details, as notes of a seasonable kind appear from time to time during the growing season. Chrysanthemums, when grown for exhibition, are subjected to high culture—that is to say, they are rooted in good time, generally before the old year closes, and are potted on from time to time as they need a shift into pots of larger size. In their early days the plants need the protection of a frame from which frost can be excluded until the more genial weather of springtime comes round, and they can then be more or less exposed during fine days, only covering them up at night in case of frost. The plants generally receive their last shift into pots of varying sizes, from 9 inches to 10 inches in diameter mostly, and these are then stood out in the most open part of the garden to get the growths thoroughly ripened, and also to ensure the air circulating through them. When the break bud first appears shoots break out to the number of six or seven, more or less; and, if large exhibition blooms are to be obtained from these plants, shoots to the number of three usually are retained. The next bud is the one usually secured, except the variety or varieties be somewhat early, in which case the bud is cut out, and the strongest of the resulting shoots grown on. These in turn again produce a bud, which is termed the second crown bud, being the second bud appearing after the break was first made (generally during April and May). After these second crown buds are retained, and the pots are full of roots, feeding with weak liquid-manures commences, and their application is regularly and systematically carried out, varying the manures given from time to time. They are housed late in September or the first few days in October, and ventilation freely accorded the plants. Fumigation with Tobacco-paper on two successive days after housing is a good rule to observe to rid the plants and glass structure of insect pests, which otherwise become very troublesome. During times of bright sunshine it is just as well to lightly shade the blooms, or they may get scorched or blistered, and rendered unfit for show purposes. We append a selection of eighteen Japanese sorts of easy culture, and fit for exhibition: Emily Silsbury, white, nice dwarf plants; Phœbus, rich yellow; Chas. Davis, pretty bronzy-yellow, dwarf; Viviand Morel, silvery-mauve, dwarf; Western King, white, very handsome; William Seward, deep rich crimson; Australie, immense Japanese-incurved, rather tall, rosy-amaranth, silvery-lilac reverse; Mons. C. Molin, rich bronzy-yellow; Eva Knowles, bronzy-apricot, rather tall; Miss Elsie Teichmann, pearly-white; Lady Byron, pure white, very handsome, nice habit; Pride of Madford, rosy-amaranth; William Tricker, light pink; Mrs. E. S. Trafford, rosy-buff; Louise, pale blush-pink, very dwarf; Col. W. B. Smith, light terra-cotta, nice habit; Mme. Ad. Chatin, pure white; and Mons. Chenon de Léche, old rose. These can be confidently recommended to beginners. Insert cuttings in some nice light sandy compost as soon as you can get them, maintaining if possible a temperature in your glass structure of about 45 degs.

Chrysanthemum Empress of India changing colour *(E. S.)*.—It is quite natural for blooms of Empress of India incurved Chrysanthemum to change from white to a dowdy lilac colour with age. From the description you give in your letter we can only imagine that the blooms have been fully developed for some time, and are now tinted at the edges with the colour which you consider a blemish. If the blooms are kept in a greenhouse where the atmospheric conditions are moist, or where no fire is used to dispel dampness, white flowers invariably become tinted as you describe. Of course, it is very possible the plant may have sported if you are quite sure the proper cuttings of Empress of India were those inserted. However, if you care to send us a bloom we shall be pleased to give you a reply that should settle the question satisfactorily.

Chrysanthemums—when to apply liquid-manures *(Enquirer)*.—Like many other growers you are in error in supposing that any given date can be specified when you should commence to feed your Chrysanthemums. So much depends upon the plants themselves. If they were potted finally later than is usual, or, on the other hand, were placed in their flowering pots much earlier than is the general rule, you can at once appreciate the difficulty of fixing a date when to commence to feed with manure-water. The proper time to commence feeding is when the roots are well round the soil, and have to a large extent used up the health-giving constituents in it. It is at such a time that they can appreciate something additional, and, in fact, if this be not forthcoming, the plants must naturally deteriorate, and consequently fail to produce the fine crop of blooms which would follow a proper system of culture. Commence with soot-water by itself, placing half-a-bushel in a sack, carefully tying it at the neck, and let this soak in any vessel holding about 50 gallons of water. Here let it remain for a few days before using, stirring it round occasionally to extract the manurial properties from it. Let any sediment settle before watering, and then all should be well. For the first week or so water with the soot-water regularly, withholding it for a week or two, and then repeating the dose—and so on until the feeding is concluded. Following the first application of soot-water, manures—either animal or artificial—may be used. Commence with weak doses at first, taking care never to go to excess. Little and often should be the rule, and vary the bill of fare occasionally, as this then acts as a tonic to the plants. As the plants get accustomed to the feeding operations, soot-water, which should be rather weak, may be given in conjunction with some of the manures or guano. Sulphate of ammonia must not be considered a manure, as its proper classification is that of a stimulant.

Should any of your buds be late, they may be hurried forward by the use of sulphate of ammonia, and this stimulant is also considered to have the power of giving additional colour to the blooms. Cow-manure is a cool manure, and we should be disposed to use it during warm weather, preferring to use that from the stable during cool and damp weather.

SINGLE CHRYSANTHEMUMS.

These are now becoming very popular in all gardens, and especially where there is a large demand for cut flowers. There is nothing more useful at this time of the year when other flowers are rare. Too much cannot be said in their favour, for the slender stems are valuable for specimen glasses, bouquets, and decorations in general. The plants are easily cultivated. The cuttings should be taken in December, and the tops kept pinched two or three times until the plants are placed in their flowering pots, as this induces short, bushy growths, whilst encouraging an abundance of bloom. They may be grown in different size pots, and very fine specimens may be obtained if two or three plants of one variety are placed into one large pot. Miss Rose especially is well adapted for this kind of work, as we have had plants in a 15-inch pot measuring 3 feet 6 inches to 4 feet through, and a mass of colour. The following varieties are well adapted for a small collection, all being free flowering :—

Annie Heard is a pure white variety. It is a charming variety to cut in sprays, and the plant is of dwarf, bushy habit.

Mary Anderson is a midseason variety, and is exceptionally useful for decorations. The colour is white suffused with rose. The stems are somewhat weak, so they require support, otherwise they are soon damaged.

Miss Rose, a brightly-suffused, rose-pink flower, and very free blooming ; it is one of the most useful.

Mrs. A. E. Stubbs.—This is a pure white kind, and one of the most perfect whites cultivated. It is a large flower, and the plant is of fine habit.

Mrs. F. W. Travers is a delicate shade of puce, changing into a soft blush as the flower ages. This variety has a delicious, heliotrope-like perfume.

Scarlet Gem speaks for itself. The flowers are a deep scarlet, with a rich yellow disc. They are not very large, useful for cutting, and showy.

Treasure, a bright yellow, and a beautiful flower. It is useful for its spray-like clusters of flower for decorations.

Miss Annie Holden (Yellow Mary Anderson).—This is a sport from the second named. It is quite a distinct colour, but otherwise resembles its parent in habit. It is a canary-yellow, and a new variety. Undoubtedly it will be valued as much as its parent when better known.

Mildew on Chrysanthemums (*Wychwood*).—The cause of mildew appearing on your Chrysanthemums may be owing to a spell of very dry or very wet weather being experienced at one time during the growth of the plants. It generally makes its appearance during August and September. It certainly does spread, and that rapidly. On this account, therefore, the affected parts, generally the underside of the leaves, should be dusted with flowers of sulphur. If the leaves are first lightly syringed with water the sulphur will readily adhere to the affected parts, and very probably effect a cure and prevent the disease spreading. Another remedy often advocated is to mix a ¼ oz. of sulphide of potassium in a gallon of water, and after being properly distributed, to syringe the underside of the leaves with this solution. This is most effective. —E. G.

Raising stock from old plants (*S. Fletcher*).—In our reply to you in Gardening Illustrated of November 13th we meant old plants might be put out in the open ground early in the summer, and left undisturbed until the propagation time again came round. You would then get grand cuttings from rested plants. Anyhow, if you cut down your old plants and place them in a glass structure, from which the frost can be excluded, you should very soon get a nice lot of cuttings. Just sprinkle a little sandy soil over the surface first, as this would assist in the production of healthy shoots. Another capital plan with those having limited accommodation is to shake the plants out of their large pots, reducing the ball of earth, and repotting them again in some light sandy compost, using 6-inch pots, and not pressing the soil down too firmly. If this be done, and the plants watered in with a fine-rosed can, new and healthy shoots will soon follow this operation.

Outdoor Chrysanthemums (*Kaffir*).—You will find your question fully answered in Gardening, October 9th last. We quite agree with you that the cottage gardens are often very pretty in the autumn with early Chrysanthemums and Perennial Sunflowers.

ORCHIDS.

VANDA SANDERIANA.

The accompanying illustration shows a part of the fine plant in Mr. Gurney Fowler's collection. This was exhibited at the Royal Horticultural Society's meeting at the Drill Hall, October 13th last year. It was certainly the finest specimen ever seen, and the society's gold medal was never more deservedly awarded. It had eight growths, eleven flower-spikes, and 126 flowers fully expanded. It originally had twelve spikes and 137 flowers, but one of the spikes had been removed previous to its being exhibited. The flowers were very large, each measuring upwards of 5 inches across. Vanda Sanderiana requires the temperature of the East India-house. The plants are usually imported as single growths, and I find that they do best in baskets, in which should be plenty of clean crocks. The whole surface should be covered with good living Sphagnum Moss. The basket should be suspended from the roof, if possible, to prevent attacks from cockroaches, as these are very fond of the roots and flowers of this plant. This Vanda requires a liberal supply of moisture throughout the growing season, both at the root and in the atmosphere, but it should be kept on the dry side during the resting season. It must, however, never be allowed to suffer from want of root moisture, as if so the leaves are liable to turn yellow and cause the plant to become unsightly. S.

Vanda Sanderiana—part of the largest specimen known.

Cattleya citrina unsatisfactory (*Rock*).—The leaf sent has evidently been taken from a plant that has been kept too moist either at the root or in the atmosphere, the result being that the leaf tissue is unusually softened, and, being overcharged with moisture, the leaf has prematurely turned yellow and fallen off. In dealing with such a refractory species as Cattleya citrina, it is advisable to consider the climatic conditions under which it lives in its native country. It comes from the mountainous regions of Mexico at elevations ranging from 6,000 feet to 7,000 feet, and where the atmosphere is comparatively dry for nearly six months of the year—that is, from November to April. During the remainder of the year the rainfall is not excessive for tropical latitudes. In your greenhouse, where the temperature fluctuates between 45 degs. and 50 degs., the plant should be suspended near to the roof glass, where it can receive the maximum amount of light and air. One important point in the cultivation of this species is that it should occupy the driest position available in the house. Instead of growing the plant upon a bare block of wood I would recommend a small quantity of rough peat and Moss being placed under the rhizome, and above all things avoid overhead syringing. It is much safer to take the block down, and if properly dry to dip it in soft rain-water, without wetting the bulbs or foliage. While the weather continues mild a watering every other day will not be too much ; but in the event of cold, frosty weather once a week will be sufficient. When the young growths approach development, and the flower-spikes appear, more frequent and liberal supplies of water will be needed. Newly-imported plants are usually more easy to manage than old established plants. It would be advisable to purchase a few imported pieces, and to experiment with them in various ways, and then to adopt whichever method gives the greatest amount of success. Try a plant or two in small shallow pans, affording three-fourths drainage, with a surface of fibry peat and a little Sphagnum Moss, and suspend them from the roof. To be successful in growing this singular Cattleya overwatering must at all times be strictly guarded against.—W., *B.*

Cissus discolor.—Among stove and greenhouse climbers there are none to equal this for fine leaf-colouring. It is beautifully tinted with a greenish marble-white and purple, the veins being of a deep crimson. It is of a free, scrambling habit, and it is not a difficult plant to grow, as it is very free, but requires a considerable amount of root-room, especially a large plant. It is well adapted for training over an ornamental trellis-frame, or up a wall, and over the roof of a house. It thrives best in a stove where plenty of light and heat may be obtained. Propagation is effected by taking cuttings in the spring of the young shoots. When about 3 inches or 4 inches long insert them in fine sandy peat, and plunge under a bell-glass or propagating pit. They soon root, and if the cuttings are taken off with a heel they strike much quicker. During the winter months it remains at rest, when it requires very little water, but sufficient to prevent the wood from shrivelling. A little pruning is necessary at the commencement of the spring, cutting out all the dead and green wood. It may be planted out in a small bed, but top-dressing is necessary every spring.—W. J.

Plumbago rosea superba.—This genus provides flowers of red, white, and blue shades, and, singularly enough, all are chaste and beautiful in their way, and ever the admiration of those who see them. The above variety is now a very pleasing feature in pots, the flowers large and very charming in their delightful rose-pink shade. This plant should always be found in the warm greenhouse for the bright effect which it produces.

OUTDOOR PLANTS.

A PERMANENT BORDER.

(IN REPLY TO "ETHEL.")

IT would be easy to make your border, which is 60 feet long and 4 feet wide, very pretty and interesting indeed. But it would be impossible to do so with the plants you suggest, at least, that is my opinion. You say you wish to do away with annuals, and yet the plants you name are nearly all either annuals or do best when treated as such. The Nicotianas would, of course, be perennial in the southern county in which you live, and I certainly advise you to have some of them. If you want it to be really satisfactory and permanent, I should plant it thus: Leave the Hollyhocks by all means. Nothing would look better than a complete row of them against the house. If they are planted about a foot from the wall, in front of them, 2 feet from the wall, I should plant a row of Herbaceous Pæonies, the May-flowering and June-flowering varieties alternately. I should plant them 2 feet from plant to plant the whole length of the row. This would allow you to have a really good collection of both kinds and give a fine colour effect during May and June You can have fifteen of each variety, and as some kinds flower freely, and others rarely flower at all, I will give a list of them, hoping it will be useful to other readers of GARDENING as well as to you. Of the June-flowering varieties you will find all these satisfactory, and most of them are very fine indeed: Whitleji is one of the best and freest-flowering of the white, and Couronne d'Or and candidissima are two other whites which flower freely, and are very beautiful. Mme. Loise Mère is a very lovely pale salmon-pink and flowers profusely. And Caroline Allain and Marie Lemoine are both beautiful Pæonies, desirable in every way. Eugene Verdier is one every one ought to have, and one of the loveliest of all is Reine des Françaises. Comte de Manteuil and The Queen are both beautiful Pæonies, and Jeanne d'Arc, Annie Tache, Marie Houillon, Mme. Lebow, and Abel de Pujol will complete a collection I do not think you will ever regret possessing. Then as to the May-flowering fifteen. The June-flowering ones I recommended were all double, but most of the May-flowering ones are single. I will name the single ones first: Arietina Northern Glory is a very beautiful one, and has lovely foliage, and arietina Baxteri, arietina cretica, arietina Excelsior, and arietina Rosy Gem are all lovely Pæonies. So are decora elatior and decora Pallasi, officinalis rosea and officinalis Sabini, peregrina Brilliant and peregrina Seraph. These are all single Pæonies of shades of pink and red. Wittmanniana is the only primrose one I have heard of, and Emodi is a white one. These two I am only purchasing myself this year, so cannot answer for their flowering and growing capacities. Then the old Double Red European Pæony, which is one of the old-fashioned flowers I personally love, and its less well-known companions the European Double Rose and European Double White, all flower very freely and during May.

If the border in which they are planted is well and deeply dug, and plenty of manure is added to it during the process, these Pæonies will improve each year. Having planted them, I should then plant the Nicotianas you desire to have in a row in front of them. I should put them in a foot apart. They will hide the Pæonies when they have done flowering, and make the border appear full of them and the Hollyhocks, which will raise their heads at the back of the Pæonies, and give colour when the Pæonies cease to supply it. In front of the Nicotianas you might put, as a border to the bed, a thick row of the Brompton Stocks you wish to have, and which, in your part of the world, no doubt, are quite hardy. I admire them immensely. Thus you will have a very charming border, I think, from May until late autumn; but if you want it to be pretty before May, I should plant it thus (after having put all the others in). You say you do not wish to spend much money on bulbs, and I fear they are one of the things which have to be paid for, as they cannot be grown from seed. But, if I were you, I should plant bulbs which are permanent, and will increase and improve instead of deteriorating, and thus save having to buy more bulbs another season. If you put a thick row of Crocuses between the Pæonies and the Nicotianas they will last for years, and flower long before either the Pæonies or Nicotianas are above ground. And between these, one bulb between each clump of Pæonies, I should plant these Narcissus. (If you do, in a few years you will have a fine clump of thirty kinds, and even next year an interesting collection). All the ones I name will flower before the Pæonies are high enough to in any way interfere with them):—Emperor, Henry Irving, Countess of Annesley, Golden Spur, P. M. Barr, Santa Maria, Ada Brooke, Cabeceiras, Cambricus, Dean Herbert, Empress, Horsfieldi, J. B. M. Camm, Michael Foster, Portia, Princess, Scoticus, Tuscan Bonnet, variiformis, Telamonius plenus, grandis, Tenby, Edward Leeds, rugilobus, spurius, and Camoens. You ask how to prepare your border, and I have told you. You must manure it liberally; and of the kinds of manure at your disposal, that from the stable will be best. Everything will like it, excepting the Narcissus, and, in planting these, you must make a good-sized hole, and fill it with a prepared mixture of soil, leaf-mould, and sharp sand. Let this completely surround the bulb and cover it, and then the surrounding manure will do no harm to them; at least, this is my experience.

MRS. JOCELYN.

RE-ARRANGING FLOWER-BEDS.

(REPLY TO "MRS. ORTON SMITH.")

IN reply to your inquiries, the first thing to do is to take up all your herbaceous plants and have your beds thoroughly well dug, adding manure and leaf-mould to them. You say you have a great many Primroses. I should make an edging of these for the bed facing north. Then I should put the Blue Irises all the way down the bed, as the next row behind the Primroses, about 1 foot from them, and in the foot of earth between the Primroses and Irises I should plant a row of Snowdrops. You say you have ten large clumps of Irises. These will divide and form a row. Just cover the crowns of these in planting, and they will be the better for being moved into fresh ground. Behind the Irises in this north border I should plant a row of the white Spiræas, and as a hedge at the back of the bed I should plant the Michaelmas Daisies and Sunflowers alternately. In the south bed I should make an edging of the London Pride, and put the Narcissus, Dog's-tooth Violets, Crocuses, and Anemones in clumps behind it. Then I should make a row of the "Geraniums" (which will divide readily) and the hardy Chrysanthemums alternately, and between this row I should put a row of Phloxes and Larkspurs. The Mrs. Sinkins Pinks I should put into one of the small beds, and I should plant the Lilies amongst them to flower when the Pinks are over. The other Irises I should put in another of the small beds.

The Japanese Anemones and Pæonies I should divide and plant alternately all over another bed, at a distance of a foot from plant to plant. The Madonna Lilies, which are the only ones named which would not be suitable for the bed with Pinks in it, I should plant as a centre for another of the beds, putting the Candytuft round the edge, and under-plant the whole bed with Scarlet Gesneriana Tulips. As to this under-planting, the bed with Irises would look well with an under-planting of Arabis. The bed with Pæonies and Anemones, if it were mine, I should fill with Scilla sibirica, which would secure a bright effect in spring.

All the other plants I should plant in a rock garden-border, which, if your garden were mine, I should make those two narrow borders nearer the house into. They will be satisfactory thus, I think you will find, and the patchy effect you complain of will not annoy you in this rock border, as it does in your other borders. The shrubs I should plant at the end of the lawn, between the croquet-lawn and Strawberry-bed.

MRS. JOCELYN.

2235 — **Edging plants** (*Acanthus*). — Stachys lanata makes a good, low-spreading, effective edging for a large garden, but as it rapidly grows broad it is rather coarse for a small garden. The edges often need cutting in with a spade, and the flower stems picked out. A very pretty edging is the drooping striped Grass (Dactylis glomerata variegata), but it gets to look a little rusty in the winter, and then should be hard trimmed over. If it gets too strong in the summer it may also be cut over once, and then new growths will soon follow. Very pretty neat dwarf edgings are made by the Mossy Sedums, especially Lydium, green, and glaucum, silvery. These do best if pieces be pricked out in a single line on the top of a little ridge of soil about 2 inches in height. If cut in to this from time to time they form compact and beautiful line edgings. Several of the Mossy Saxifragas do as well—Aizoon amongst the rest. A capital green edging is furnished by the low carpet plant, Herniaria glabra, and also by the silvery-leaved, very close-growing Antennaria tomentosa. Aubrietias form good edgings, especially if planted as advised for the Sedums, on a low ridge of soil. Such varieties as violacea and Leichtlini make glorious edges of rich reddish-maroon colour in the spring. Cutting along their edges from time to time with a sharp spade keeps them in form. There are very few dark-leaved plants suitable for edgings. The best is the hardy Ajuga reptans atrosanguinea, the leafage of which is of a dull purplish hue. The flowers are blue, and may be picked out or not. Sedium Lydium, when kept dry, assumes a beautiful red hue that is quite charming, and leads to the wish that it were natural. Double Daisies, Pansies of compact habit, Thrifts, all make neat edgings; and a lovely golden hue is got from the Spergula pilifera aurea. All those named are hardy.—A. D.

The Winter Gladiolus (Schizostylis coccinea).—Just at present I have a bed of this Cape bulb in fine bloom in the open on a south-west aspect. It has been flowering for the past three weeks, and with some little temporary protection against frost—we had the first nip this season last night—it may last for another ten days yet. It seems surprising this flower is not more generally grown, for it is a most valuable addition to the somewhat limited number of late autumn flowers. The plant is equally useful indoors, and seems made for a window garden. For cut-flowers, spikes of the deep red, star-like blossoms of this pretty Cape bulb, made up loose in vases with other subjects, are very effective, while for general bouquets, or even wreaths, few flowers are more useful. The single blooms, made up with white Bouvardias and Maiden-hair Fern, make very taking button-hole bouquets, and as cultivation is of the simplest character, one may hope that this beautiful flower may soon become more of a favourite than it appears to be at present.—R. H., *Clonmel, November 15, 1897.*

Flowers for long border (*F. H. H. G.*). —Plant the self-clinging Virginian Creeper (Ampelopsis Veitchi) against the wall at the back of illustration. The Cannas could again be relied upon to do service at the foot of the wall, and the twenty beds of Tagetes below the arches might be planted with the following plants, the majority of which would be in bloom about the time you mention: Godetia Duchess of Albany compacta (8 inches), flowers borne in clusters at the points of the growths, colour white, shaded with pink. G. Lady Satin Rose Improved (6 inches), very bushy compact habit, very free-flowering, flowers rich rose, white centre. Extra fine. Leptosiphon densiflorus albus rarely exceeds 10 inches height. Its flowers are pure white. Flowers abundantly on dry soils. Dianthus chinensis Heddewigi The Bride is very fine and the flowers very enduring. D. Heddewigi Crimson Belle is also very effective. The flowers are of extra large size and the colour very rich. Calliopsis nigra nana is one of the most beautiful of dwarf growing plants. It is a first-rate grower, of compact, bushy habit and a most profuse bloomer, flowers deep velvety crimson. It commences to bloom in July and keeps throwing up buds until cut by autumn frosts. Mignonette is a general favourite, and the variety named Machet is one of the best. It is a sturdy grower, and throws its well-formed spikes of sweet-scented crimson flowers well above the foliage. M. Golden Gem is another excellent variety. It is also of dwarf pyramidal habit, and bears very freely its fragrant golden-yellow flowers. Phlox Drummondi, Verbenas, Portulaccas, and Linums, would prove satisfactory. Pansy William Niel is of dwarf, spreading

habit, and carries a great profusion of pale rose-coloured flowers. This variety stands drought well. Blue Gown is a clear blue self and very free flowering. Habit very compact. Amongst Begonias, Lafayette is well worth growing. It is dwarf, distinct, and its rich crimson double flowers are produced with exceptional freedom. It begins to flower in summer, and continues blooming until well into the autumn. B. semperflorens Crimson Gem is very showy. Its chief beauty rests not so much in its flowers as in the rich chocolate-crimson and brown shades, which its foliage assumes towards the middle of September. It is one of the most beautiful of bedding Begonias, and well deserving of wider cultivation. Campanula garganica hirsuta grows to a height of 6 inches. Its pale blue flowers are exceedingly pretty. C. turbinata is another free-flowering variety; the violet-blue flowers are freely produced. Nasturtium Empress of India is a profuse bloomer, and throws its crimson flowers well above the foliage. Candytuft Tom Thumb is very floriferous. Habit dwarf and compact.

INDOOR PLANTS.

IVY-LEAVED PELARGONIUMS AS BASKET PLANTS.

Few tender plants are more suitable for baskets, whether in the open during the summer or under glass, than the Ivy-leaved Pelargonium, of which there are many varieties. Mme. Crousse, rose, is a very useful kind, flowering freely over a long season. Our illustration shows a variegated-leaved kind, which, if less pleasing than the green-leaved varieties, is bright, and makes a change from other things.

Variegated Ivy-leaved "Geranium" in a basket.

FRAME VIOLETS.

In your issue of October 23, "H. H.," writing of Violets, remarks that "the time is at hand when cultivated plants must be transferred to their quarters in the frame." I should say that it would have been better had this paragraph appeared a month ago. I believe that one of the greatest secrets of success in the culture of frame Violets is early planting, and would always endeavour to have this finished before the 1st of October. Even though the plants are carefully lifted with a good ball of earth, and in a week or ten days commence to open their plump buds, it is some time before the roots spread in the surrounding soil, and until they have done so a sharp frost, which necessitates the lights being put on and closed, gives the plants a check. In planting at the end of October, as advocated, it is not probable that for the space of a month the weather will be frostless; in fact, a sharp frost is quite likely to occur immediately after the planting is concluded. This is not at all uncommon, even in the mild, south-western counties, and the further north we go the less chance have these late-planted Violets of becoming established before the advent of frost. Plants placed in pits and frames towards the end of September begin to flower the first week in October, and keep it up for many months. A 200-feet brick-pit planted at the time indicated has already yielded considerably over one thousand bunches. These pits are preferable to frames, as in cold, windy weather they are appreciably warmer than the latter, while if they are fitted with a single 4-inch hot-water pipe running round the front and back, the plants will keep growing and flowering, even during the sharpest frosts, under the influence of the gentle heat, which is only applied at such times. In making the open-air beds in the spring runners are preferable to broken-up old plants for setting out. A mulch with spent hot-bed manure soon after planting is a great help to the young plants, as it helps to conserve the moisture, and also has a certain stimulating effect. S. W. F.

GREENHOUSE CLIMBERS.

Perhaps no greenhouse, whether lofty or not, would look so well without some climber or other among its varied subjects. It does not matter if cold or warm, a span-roof or a lean-to, climbers can be found which will vastly improve its appearance. So numerous and varied are these that we can only take a few of the most suitable for the various positions and temperatures. A judicious selection is half the battle, and if we also bear in mind that most climbers need more root-run than pot-plants we shall find little difficulty with them. First of all let us take the unheated amateur's house of about 20 feet long, 12 feet wide, and 8 feet high. Here we might grow such as Roses Maréchal Niel and William Allen Richardson upon part of the roof; or the pretty star like Clematis indivisa lobata. It would not be wise to overcrowd so small a roof and shade the lower occupants too much. For this reason we would plant upon the shady side of a span-roof or upon the back wall of a lean-to. The blue and white Passion-flowers, Plumbago capensis, and Cobæa scandens would all be useful in such a house. If turned into border see that it is moved to a depth of a foot or more, and enriched with turfy loam, leaf-soil, and dry cow-dung in equal proportions. Such a compost will suit all of the above, as well as Eccremocarpus scaber, Ipomæa Horsfalliæ, Jessamines, the many grand Clematises, and Tropæolum Jarrati. In a structure of this size, that can be heated so as to secure against frost during a severe winter, and generally keep up a temperature ranging from 45 degs. to 60 degs., we can have a great addition to those subjects already named, as the beautiful yellow Allamandas, Bougainvilleas, Chorozemas, Clerodendrons, Lapagerias (these need little root-run and a more peaty compost), Hoya carnosa, and that very pretty climber for a back wall, Ficus repens.

In larger and especially lofty conservatories (heated) we can supplement these with Tacsonias, than which few subjects look better when hanging from a high roof; Passiflora princeps, Stephanotis floribunda, and Aristolochia gigas, Then there are the grand Acacias, such a. Riceana, armata, dealbata, and Drummondis with the peculiar and very bright-flowered Clianthus puniceus magnificus. A great point in the culture of greenhouse climbers is to keep them free from insect enemies from the start. Once allow such as scale or mealy-bug to get a footing, and it is almost impossible to eradicate the pests from a strong growing climber. Far better to cut the plant down, thoroughly cleanse the roof or wall, and start afresh. All climbers enjoy a free use of the syringe at night and early morning, except during mid-winter. They also need much more root moisture and help from a liberal use of weak liquid-manures than are generally afforded.

Old wood should be kept cut out as far as possible, and the growth never allowed to get into a tangled mass. A few long growths trained carefully over the roof will have a much better effect, and not overshade the plants below. Where no convenient border exists it is an easy matter to have a large pot, tub, or box beneath the staging, filling this with compost, and drawing the stem of the climber through the staging to the roof; or a box can stand in the open, and be covered with rustic cork and small Ferns to take away any unsightly appearances. In all cases it would be well if we could afford some additional soil for their support, and no easier plan exists than these boxes; or one without a bottom, where it can be placed above a border. The compost keeps in better condition, and one is able to note and regulate root watering better. P.

FRIENDS OF THE GARDENER.

EARTHWORMS IN GARDENS.

Friends not foes.

In my last paper on these creatures I allude more particularly to their life history. Now I propose to give a short account of the work they perform, and the part they play generally in the world, and of some of their habits which I have not before mentioned.

To begin with the habits first. One of their habits is that of dragging leaves into their holes. This they apparently do partly for food and partly to line their burrows. They do not line the entire burrow, but only the upper part, where the worms generally live, the remainder being coated with earth that has passed through the worm's body, which when dry forms a beautiful smooth coating. These leaves which are thus taken below the surface help considerably when they decay to enrich the soil. At times, particularly in the autumn and the winter worms, are fonds of plugging up the entrance to their burrows with leaves, the stalks of leaves, small twigs, and, according to Darwin, bits of paper, feathers, tufts of wool, and horse hairs; in fact, I suppose they would make use of anything that was within reach. Where there are plenty of leaves quite a little pile is collected over the hole. Sometimes they use small stones for this purpose, and as many as thirty-four stones have been found over one hole, and a stone weighing no less than 2 oz. has been moved by a worm along a gravel path. This shows considerable strength in these creatures. At the edges of paths late in the year, if there are no loose stones to be had, the worms manage to pick out little stones which are well embedded in the path. I noticed one day in a garden path that a number of small stones had been picked out, leaving the holes from which they had been taken quite clean, and showing the exact shape of the stone. I wondered for a minute what could have been the cause of their disappearance, and then I saw that the worms had appropriated them. What the object of thus plugging up the entrances to the burrows may be is not very certain. It cannot be to keep the rain out, as loose stones would be of no use for this purpose, but it may be to prevent cold air from entering. In my previous paper I alluded to the amount of earth annually ejected by a worm; but though this may appear but small, when it is considered what a vast amount of this country is inhabited by worms, the total weight of the subsoil raised to the surface through the agency of these creatures is almost incalculable. From some experiments

made by a friend of Mr. Darwin's and quoted in his book before alluded to, it appears that on open common land, which was covered by short, fine turf, no less than 16 tons per acre is brought to the surface. The castings were collected from 1 square yard of turf, and were carefully dried before they were weighed, so that the weight quoted was of dry earth, and not of moist castings, which would have weighed very much more. Worm-casts seem to be much more abundant on poor land than on rich, and this can be accounted for by the fact that a worm has to pass a much larger quantity of poor soil through its body before it obtains a certain amount of nutriment than if the soil was rich. It is obvious that if such a large amount of soil as 16 tons per acre is annually added to the surface that unless the earth fell in and filled up the old burrows the general level of the ground must be raised. As this is not the case, what was the surface is now a certain distance below. The rate at which what was the surface is buried on common land is about 1½ inches in ten years. Stones lying on the surface gradually become buried. To quote Mr. Darwin's observations again, there was a steep field near his house, "clothed with scanty vegetation, and was so thickly covered with small and large flint stones, some of them half as large as a child's head. That field was always called by my sons the 'stony field.' When they ran down the slope the stones clattered together. I remember doubting if I should ever live to see these larger flints covered with vegetable mould and turf; but the smaller stones disappeared before many years had elapsed, as did every one of the larger ones after a time, so that after thirty years a horse could gallop over the compact turf from one end of the field to the other and not strike a single flint with his shoes." In the same way, no doubt, many antiquities, such as Roman pavements, stone implements, etc, have been buried and preserved from injury. After all that worms do for us by improving the soil and top-dressing the turf, it seems strange to see the question, "How can I destroy the worms in my garden?" so frequently asked. G. S. S.

NARCISSUS CERNUUS PLENUS.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

SIR,—The illustration of this Daffodil in your issue for Nov. 13 is one of the most remarkable I have seen in any gardening paper. That one man should possess over two hundred bulbs of a Daffodil that is probably the most difficult of the family to cultivate will strike hardy flower growers with wonder. It is seldom that one sees it catalogued, and even the great specialists have apparently no great stock, one pricing it at five shillings the bulb, and Mr. Barr says "price on application;" the only kind in his large collection which is not priced. In the majority of gardens the double Swan's Neck absolutely refuses to thrive, and where it will remain healthy the rate of increase is very slow. In the face of such facts the recorded rate of increase with Mr. Scholfield from twenty bulbs to two hundred and forty bulbs in seven years is phenomenal. Had I merely been told this I must confess I should have taken the statement with many grains of salt, and it was a most happy idea to send an illustration, or many would have thought that some error had been made, and some other kind mistaken for cernuus plenus. The elements of success apparently consist in a gritty soil without manure, good drainage, abundance of light and air, and annual lifting; though whether this last detail has any great potency would have to be proved. Where the natural conditions are favourable I am convinced that annual transplanting is a mistake, for I have found in my light loam all kinds of Daffodils, albino varieties included, flower better when left alone for several years. Cernuus, for instance, not the double form but the type, will produce flower stems 2½ feet high on clumps not disturbed for some years, whereas the same bulbs transplanted will not the first year after moving throw up more than half that height, the flowers also being considerably smaller. I do not know how the double cernuus would behave under similar circumstances, for I have never been able to get really good bulbs of it. As the white-flowered Daffodils do so well with me I fancy that cernuus plenus would also succeed, but it is discouraging to get bulbs that have already been weakened by adverse conditions. I have long wished to see a thriving colony of the double Swan's Neck, and if I had the time I would not mind journeying a hundred miles or more to see the display in that Devonshire garden. J. CORNHILL.

Byfleet, Surrey.

HOUSE AND WINDOW GARDENING.

Cypripedium acaule and Calypso borealis in a window.—Could I grow Cypripedium acaule or Calypso borealis in a window facing south? Which is the most suitable, if either? Also kindly give information as to compost, size of pot, shading, etc.? A bell-glass could be used if necessary.—READER.

*** It is improbable that either Cypripedium acaule or Calypso borealis would prove a success if grown in pots in a south window, shade and moisture being essential for both subjects. Cypripedium acaule, sometimes known as C. humile, is not easy to establish even in the rock garden, which is without doubt the most suitable site for its cultivation, though it often succeeds fairly well when grown as a pot-plant in a cold-frame. Spongy peat is the best rooting medium for this terrestrial Orchid, and a copious water supply is necessary to keep it in good health. Calypso borealis will succeed when grown in sandy peat in sheltered spots in the rock garden. In the dry atmosphere of a room, and the sunlight admitted by the south window, it would be well nigh impossible to obtain the cool, moist surroundings requisite. The use of a bell-glass would not improve matters, as it would raise the temperature and create a close, steamy atmosphere that would be injurious to the plants.

Roman Hyacinths—One of the few forced flowers I like is the Roman Hyacinth, with its delicate white bells and tender green stems. Unfortunately, one is unable to get the foliage in a cut state, but Maiden-hair Fern is acceptable. There are few prettier arrangements than a clear glass-vase full of Roman Hyacinths and Maiden-hair Fern, or better still, because more lasting, Asparagus plumosus. Nothing that one can do will preserve Maiden-hair Fern for more than a day or two, and even in a few hours it will shrivel. It is a good plan after gathering to lay it in a shallow dish full of water for an hour or two before it is used for decoration. After lightly shaking the fronds arrange them among the flowers, giving plenty of water and ample space in the jar.—A. E. C.

Growing Chinese Sacred or Joss Lilies *(A. B. C.)*.—These appear to be getting popular, and doubtless one of the things that renders them so is that they can be grown successfully without soil of any kind. The usual plan is to set the large bulb in a china bowl of sufficient size to hold about half-a-dozen bulbs, and fill up around the bulbs with pebbles or fine, shingly stones or sand. Add water to the depth of about 3 inches, then a covering of fresh, green Moss, and set the bowl in a dark cupboard or cellar for ten days or a fortnight, when the roots will have spread out considerably. The bowl should be set in one of the lightest places near the window to keep the foliage from getting drawn up and weakly, as the beauty of the whole arrangement depends considerably on the healthy, luxuriant look of the foliage, which, when fully developed, is like a large, naturally-grown clump of Narcissus. Why they are called Lilies at all I could never understand, as they are Narcissi, as anyone can see at a glance at the bulbs. A Lily-bulb is scaly and quite distinct from a Narcissus. I am just starting a few in the Jadoo-fibre, which I believe will suit them well, as any kind of soft, fleshy-rooted bulbs or plants that I have tried luxuriate in it.—J. G., *Gosport.*

Lilium candidum *(E. W. W.)*.—Your Lilium candidums are apparently attacked by the Lily disease fungus (Botrytis cinerea), a fungus that has lately played sad havoc among various kinds of Lilies. I do not imagine that the soil has anything to do with it attacking your plants, and I should let the roots remain where they are, but next year, if the disease again shows itself, lose no time in spraying the plants with Bordeaux-mixture, or ammonical solution of copper carbonate.—G. S. S.

ROSES.

AUTUMNAL ROSES IN ROSS-SHIRE.

I HAVE read your short article on this subject with great interest, and I agree with you in thinking that, were a few of your readers to send notes of the varieties they have found most serviceable, the result would prove interesting and useful—all the more interesting if growers in different parts of the country would give their experience.

Besides the varieties mentioned in your article, I, this season, found the following very satisfactory up to the end of October:—

Camoens, Gustave Regis, Viscountess Folkestone, Mme. Falcot, Duchess of York, and Duke of Edinburgh; and the following, among others, are yielding a few nice blooms: Mrs. Harkness, Clara Watson, Mme. Testout, and Marquis of Salisbury.

I may add that even here, in the far north, Belle Lyonnaise, as a climber, is still flowering almost as freely as the old Gloire de Dijon.

OLD SUBSCRIBER.

Ross shire, November 15th, 1897.

RULES FOR CORRESPONDENTS.

Questions—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rule here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2295—**Apple Charles Masque.**—I bought a Apple-tree by auction, named Charles Masque. Can you inform what sort it is? It came from Holland.—A. B. C.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2296—**Turf near Fir-trees** *(M. Shervill)*.—It is not advisable to put the turf close to the stems, but leave a bare space.

2297—**Carnation "Magnetic"** *(Lanfair)*.—We do not know the raiser's name; it will doubtless be advertised in the usual course, when ready to be put in commerce.

2298—**Moving Belladona Lilies** *(No Name)*.—Move these in the summer, not now. Plant out the Everlasting Pea. It would look very well growing over a hedge.

2299—**Growing Chinese Sacred Lily** *(Lily)*.—There have been several answers to this question lately in GARDENING. Kindly look through recent numbers. It is a very easily-grown root.

2300—**Shrubs for a screen** *(W. A. M.)*.—You will be safe in planting the English Yew and American Arbor-vitæ. Thuja Menziesi, Laurel of sorts, Berberis Darwini, and Cupressus Lawsoniana would also do satisfactorily.

2301—**Soil for Chrysanthemums** *(F. R. F.)*.—Blood is certainly not suitable for the plants; and as regards your note *re* final potting, we presume you mean for next year? Of course, all potting is over for this year's plants.

2302—**Spiræa palmata** *(F. R. F.)*.—This Spiræa requires a moist place, and is very happy by a stream or pond-side. It is very beautiful, and readily grown in pots too. You do not say whether you require notes upon their outdoor or indoor culture.

2303—**Palm unsatisfactory** *(Anxious)*.—Your best plan will be to turn the plant out and repot it in good loamy soil, ramming this hard. Give no water for a time, and keep in a warm house. Evidently the soil is thoroughly sour and water-logged.

2304—**Books on fruit culture** *(W. N.)*.—You can hardly do better than obtain "Fruit Growing for Profit," price 2s. 9d., post free; or "Profitable Fruit-growing," by J. Wright, price 1s. 2d. May be had of Messrs. G. Bunyard and Sons, Old Nurseries, Maidstone.

2305—**Plan of garden** *(F. H. Parks)*.—It is impossible for me to give a sketch in GARDENING, or I should be very pleased to do so. I think you do understand my meaning though, by the plan you sent me. If not, any gardener would explain it to you, if you show them that number of GARDENING. Any time this month is not at all too late to plant the things I mentioned.—MRS. JOCELYN.

2306—**Daffodil bulbs unsatisfactory** *(H. Narkillie).*—The bulbs have no actual disease, but are evidently in a very badly-drained, heavy soil, and the basal portion roots. This is shown by the poor, thin roots. You must lift them, and transfer to a warm, lighter soil.

2307—**To obtain the prefix "F.R.H.S."** *(Mischief).*—Simply pay your subscription and get someone to propose you at one of the fortnightly meetings. But you will obtain all the desired information by writing to the Secretary, 117, Victoria-street, Westminster, London.

2308—**Birds eating fruit-buds** *(Crouch End).*—Your complaint as to the birds eating the fruit-buds on Currant-bushes, we saw the same trouble the other day in a great garden, and no one could suggest a remedy beyond netting the bushes over to keep out the birds. You may shoot them, or syringe the bushes with Paris-green (poisonous) to make the buds nauseous. It is a great trouble, which, so far as we know, has its best remedy in netting.

2309—**Seedling Carnations at shows** *(Mischief).*—We do not think there is any barrier to any raiser of Carnations bringing forward his exhibits. There are the fortnightly meetings of the Royal Horticultural Society, which are practically held to encourage new flowers, fruits, and vegetables. You can show also at exhibitions of the National Carnation and Picotee Society, when certificates are given, as at the Royal Horticultural Society, for meritorious seedlings.

2310—**Hedychium Gardnerianum** (Garland Flower) *(Suburbia).*—The plants should be rested a bit during the winter months In spring shake the old soil away and repot into good loam and place in a warm house. When rooted and growth has been made, plenty of water must be given at the roots and overhead. It is very important that the pots should be well drained. If the plants are kept indoors all the summer, it is a very good plan to stand the pots in saucers of water. About the end of May it will be quite safe to plant them out in a sunny position in the open air. When the flowering spikes are being formed, liquid-manure may be given with excellent results.

2311—**Water-weed** *(C. C. J.).*—You will not find Water-weed a desirable substitute for leaf-soil. The Water-weed, being derived from water solely, is chiefly composed of water and nitrogen, and is practically devoid of potash and phosphoric acid. Leaf-soil, the product of decayed leaves from trees, has these elements in material proportion. Water-weed as it decays will wither up to almost nothing, and leave behind no solids. One bushel of fairly-well-decayed leaf-soil would be worth more to you than a cart-load of Water-weed. All the same, you may try a portion of the latter as a dressing, but it should be laid into a heap, and be turned occasionally for a few weeks ere it is put on the soil as dressing.

2312—**Clematises mildewed** *(G. S. D.).*—The mildew which appears on the petals of the large-flowered Clematises is a great disfigurement to them, and especially so to the dark-flowered varieties. It does not appear to be produced by damp, as in the dry summers of '87 and '96 we observed plants badly affected by it. A weak solution of sulphide of potassium was, in one case, tried as a preventive, but as the syringing had to be discontinued as soon as the blossoms opened, this proved ineffectual in staying the disease, which has apparently become more prevalent of late years. As far as we know there is at present no reliable preventive. The mildew seems to attack plants growing in shade and sunshine indiscriminately.—F.

2313—**Cider making** *(Cider).*—As your question rather relates to a subject outside of GARDENING, we advise you to write to Mr. Jas. Harper, Ebley, Stroud, Gloucester, enclosing a postage-stamp and ask for a copy of his lecture on cider-making. In that you will find the needful information. Another great cider authority is Mr. Radcliffe Cooke, M.P. for Hereford, who is a specialist in this matter. Cider Apples differ from ordinary eating Apples in being less sweet and having largely a peculiar property called tannin, necessary to the production of the required quality. Generally the trees are great croppers when they get old. Varieties differ, and the same ones are known by divers names in diverse counties. The Foxwhelp is held in high reputation. To get stock you cannot do better than apply to Mr. John Watkins, nurseryman, Hereford.

2314—**Peach-trees under glass** *(No Name).*—Peach-trees in a greenhouse where "Geraniums" are kept for the winter will take no appreciable harm, because some gentle warmth must occasionally be given to keep the frost from "Geraniums." Still, it is so much better, whenever the weather is mild and dry, to give your trees all the air you can to help plump the buds and mature the wood. If the wood be not well ripened, then in the spring the blooms fall, because there is a lack of pollen to fertilise them. You may not expect to get fruit from a newly-planted tree, although Royal George is one of the most productive of Peaches, for a couple of years, as a newly-planted one should have the shoots half shortened back to induce breaking close home, and thus furnish a good tree at the outset.

2315—**Digging garden** *(Amateur).*—Whether you dig your garden now or later depends on the nature of the garden, and whether it is at all cropped. We presume you refer to portions that are now bare of crops. So far as these are concerned, we prefer always, where it can be done, to have on them a crop of almost anything green. Tares, Oats, Mustard, Turnips, or even annual weeds, as these crops are really attracting food from the air and utilising it for the benefit of the soil, whilst barren soil is practically wasting itself. It is a good plan to strew a good dressing of manure over bare ground. Let it lie and wash in, and dig it in during dry weather early in the new year; then in March, before sowing and planting, add a fresh dressing of short manure and fork that in. Very early digging seldom gains anything to the soil.

2316—**Cordon fruit-trees** *(W. N.).*—Maiden cordons must of necessity have the leading shoots or stems partially shortened back to induce the formation of fruit-buds or spurs from the eyes left. You will do well to cut back fully one-half the leading shoots now to encourage spurring. As the cordons get stronger more leading growth may be left, but the effect of seeking to get too much length in any one season often is to leave a bare portion of the stem that is devoid of buds or spurs. A slower process of building up the cordons is the safest. The side-shoots thrown out up the stems should be cut back to about three to five buds from the middle to the end of July. Later the leading one will push a shoot, which can be pinched, and the back buds will plump up and change into fruit-buds. In the winter cut each spur back to two buds.

2317—**Mortar Mushroom-bed** *(T. G.).*—We confess with shame we have never before heard of the wonderful Mushroom-bed made with old mortar rubbish and watered with liquid-manure. It is a method of growing which may well blush to find itself fame. We have heard of many wonderful things in relation to gardening from time to time, but this is a novelty. We are therefore compelled to advise you to keep to the old practice if you want to ensure success, by making your beds of good fresh stable-manure, several times turned and mixed, and proceeding quite in the old way. None the less, and in spite of natural conservative ideas in relation to this matter, we should like to learn from any reader information as to success or failure in connection with this mortar-bed question. The odd thing about it is that Mushrooms seem to have no appreciation for lime.

2318—**Grapes shanking** *(Ricinus).*—Certainly there would be risk in entirely lifting the roots of Vines planted fifty years ago, but you may do so partially. As your border is 15 feet wide, open the trench all along its front fully three feet wide, and as deep That would secure all roots that run to one side and may be out of the border altogether. Then you may grub under the roots some 2 feet or 3 feet, and cut off all you can reach that are deep down. After filling up this trench and under-grubbing again, then remove the top soil down to the roots, and recover with fresh soil entirely. For this purpose have mixed good turfy loam, with equal quantity of good soil from a vegetable garden, adding some bone-dust and wood-ashes Then redress the roots with the mixture, but not more than 6 inches thick; that will encourage the formation of surface roots, and two years later you can add 2 inches more of soil to the surface of the border.

2319—**Cinerarias** *(Subscriber).*—Although Cinerarias are ordinarily termed annuals, tender, of course, yet they are usually treated as biennials, being sown one year to bloom early the next, when they seed. The plants however, are, to some extent, perennial, because if they be kept free from aphis—a very destructive insect, so far as these plants are concerned—they commence to throw up root shoots or growths even whilst in bloom, and if so soon as bloom is over the flowering stems be cut close to the soil, and the plants stood out-doors in a frame, or in a sheltered place, and kept watered, their root-growths become strong. The entire plant may be turned out of the old pot, and have one half the soil removed, repotting back into a pot of the same size, but quite clean with fresh soil, or the growths may be cut out singly, each with some root, and be grown on singly in pots just as though they were seedlings to flower the ensuing winter.

2320—**Mushroom culture** *(W. R. R.)*—Naturally it may seem odd to you that when the great purpose of manure in mildly fermenting is to furnish heat, that soil also artificially warmed should not answer the same purpose in growing Mushrooms. But the manure serves other purposes, because, for one thing, it is the chief medium of spawn production, and Mushrooms cannot be had except these conditions be furnished As evidence of that, we see Mushrooms in meadows growing only where cattle droppings are plentiful. Then whilst artificial heating is usually productive of dryness, the warmth generated by fermenting manure—and for Mushroom production it must be slowly fermenting to give a mild moist heat of an enduring nature—is rather productive of moisture for the spawn. Then the spawn feeds on decomposition of manure, chiefly sweet stable-manure, just as common funguses thrive on the decay of wood or other forms of vegetable material.

2321—**Black Hamburgh** *(Vine).*—The Vine you have just planted from out of a 12-inch pot was really a fruiting cane grown to be fruited the ensuing season in the pot. After that it might have been shaken out of the soil, be planted as you have done, and then cut hard back to induce the formation of a strong new permanent rod. For planting, as you have a Vine in a pot, half the size would have been better, as in any case the newly-planted Vine must be cut hard back to a strong bud, just inside the house to make the needful permanent rod. If you allow your rod to remain even but 6 feet long, and take a few bunches of Grapes from it, you will weaken its leader and probably cause all the fruiting part to be barren henceforth. The buds you see will push shoots or laterals, and on these, after being 12 inches or so long, sprays of flowers will come in the spring, and the flowers setting will produce bunches of fruit. Tomatoes will not injure the Vine, so long as they do not crowd it, nor will a gentle warmth beyond inducing rather earlier bursting of the buds.

2322—**Vine-eyes** *(Kismet).*—In taking eyes from Grape-Vines it will be well, after the season's leaves have quite fallen, to get the Vines hard pruned, cutting back the side laterals to a good stout bud, as near the main stem as possible. Then, selecting the stoutest of the ripe shoots or laterals, make the bottoms even, tie into a bundle, and then lay the bundle into the ground by burying the bottoms some 6 inches in the soil. Propagation should begin early in the year, say in January, if you can provide them the needful warmth. Cut the best buds or eyes off ½ inch above and ¾ inch below each bud. The top cut should be level and the lower one sloping, the longest point being just under the bud. Have 5-inch pots, well-drained, filled with good soil, on the upper portion of which is plenty of sharp sand, and into these set the eyes firmly, so that the bud just shows out of the sand. Water and stand in a close-shut frame or glass-covered box, stood in the warmest part of the greenhouse. If you have no little frame, then drop each pot into one two sizes larger, and cover with a piece of glass. Muscat of Alexandria is a difficult Grape for an amateur to grow. Black Hamburgh is an easy one.

2323—**The Flag Iris** (I. germanica) *(Haes).*—This is very accommodating as regards soil and situation. It may be seen growing strongly by the water-side in deep, heavy soil, and also blooming freely in steep, shady railway embankments. There will be no difficulty in procuring a good selection of handsome varieties from any of the well-known firms. Though not frequently advertised, an exhaustive list is usually to be found in most bulb catalogues. The following are pleasing varieties: Princess of Wales, pure white, very good; Florentina, whitish-grey; atro-purpurea, very dark purple; flavescens, light primrose; aurea, golden-yellow; Celeste, light lavender; Darius, gold and purple, reticulated; L'Innocence, white, reticulated purple and yellow; Jacquiana, velvety red; Mme. Chereau, white, edged with violet; Queen of the May, rose-lilac, very good; Victorine, purple and white; venusta, rosy-purple and old-gold. Two very beautiful and strong-growing Flags are I. pallida and I. pallida dalmatica, the former light lavender and the latter lavender tinged with purple. These two have also the additional merit of being sweetly scented. Your Apple-trees are probably on the wrong stock.—S. W. F.

2324—**Bowling-green.**—I have a bowling-green under my care. It has been patched with rubbishy turf, and is very bad in places (bare). Would you kindly say in your paper the best treatment to get a good nice root-growth?—S. PAINTER.

*** *As the turf is of an inferior character, you should either relay with good close turf, or sow seed in the bare, unsightly places in April. The soil should be made quite level and fine on the surface, and a roller passed over it after the seed is sown.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A Weekly Subscriber.*—Nos 1, 2, and 3 were damaged beyond recognition; 4 is Chas Davis; 5, William Seward; 6, Viviand Morel. When sending flowers of Chrysanthemums for naming, pieces of stem and foliage should always accompany them.——*S. Painter.*—Probably Clematis Virginiana, but in the absence of flowers cannot say definitely. Plant in spring. Any garden soil suits it——*Allegin.*—Boussingaultia baseloides——*E. Sealy.*—The shrub is Garrya elliptica, and the other plant Purple Clary (Salvia Sclarea); 1, Pteris cretica; 2, Pteris serrulata; 3, Shield Fern (Polystichum angulare); 4, Adiantum microphyllum; 5, Cheilanthes sp.; 6, Asplenium bulbiferum; 7, Scolopendrium sp.; 8, Dennstædtia davallioides; 9, Cyrtomium falcatum; 10, Phlebodium aureum; 11, Parsley Fern (Allosurus crispus)——*Crofton.*—Phalangium variegatum.——*H. G. H.*—1, Sparmannia africana; 2, Farfugium grande.——*J. Noble.*—Farfugium grande.——*Nemo.*—You have sent too many specimens. We name the following: 1, Pteris serrulata; 2, Pteris cretica; 4, P. cretica albo-lineata; 8, Prickly Shield Fern (Polystichum angulare); 9, Cyrtomium falcatum; 11, Apparently Lycodium scandens, but specimen very poor; 13, Asplenium bulbiferum. Send better specimens of the others.——*Chas. McC.*—We would help you if we could, but from such a scrap it is almost impossible to say what the plant may be. It looks like a Genista, but please send a better specimen, and in flower.——*S. P. Ford.*—1, La Triomphante; 2, Not recognised. It is very difficult at any time to name Chrysanthemums, but this flower might represent a dozen kinds; 3, Perle Precieuse. We could find no Fern-frond.——*Mrs. Gethring.*—Sparmannia africana——*T. A. Richardson.*—You have not numbered the flowers, so we cannot help you.——*Erin*—The Maiden-hair Fern is Adiantum cuneatum, the other Asplenium bulbiferum——*W. R.*—The Clematis is, we should think, Lord Neville; but its not easy to tell from late blooms. These Clematises are very beautiful and late-flowering.——*E. S.*—Asparagus Sprengeri.——*J. Eckford.*—1, Euonymus latifolius aureus; 2, E. radicans; 3, Veronica speciosa var.; 4, Escallonia macrantha; 5, Please send better specimen; 6, Ruscus aculeatus; 7, Veronica speciosa; 8, Arctotis arborescens.

Names of fruits.—*F. H. B. Carlow.*—1, and 3, King of the Pippins; 2, Probably Ribston Pippin, but very poor fruit; 4, Mère de Ménage; 6, Adams' Pearmain. The fruit was very poor. Evidently the trees want thorough renovation.——*C Dowling.*—1, Apple Crimson Queening; 2, King of the Pippins; 4, Rymer Pear; 3, Old Colmar. Others too poor to name. Is there anything wrong with your trees? The fruit of both Apples and Pears was very poor.——*J. Noble.*—1, Lady Henniker; 2, Hollandbury. Plant named under the proper heading.——*W.*—Scarlet Nonpareil.——*Lincolnshire.*—Fondante d'Automne.

LAW.

Premises taken for nursery grounds, etc.—I have taken some premises for the purpose of carrying on the business of a nurseryman and florist and have put up some glass and planted a lot of shrubs, etc. This has been done with the full verbal approval of the landlord, who also promises that whatever I build or plant I shall be at liberty to remove whenever I choose, and he is willing to enter into a written agreement to that effect. To provide against such contingencies as the death of either of the parties, or the sale of the place, what kind of an agreement should be drawn up? Will it be necessary to employ a solicitor? Six months' notice to be given by either side.—VIRGINIA.

*** It will certainly be most desirable that a written agreement of tenancy should be drawn up, as probably the tenancy commenced since January 1st, 1896, and if it did, the Market Gardeners' Compensation Act will not apply, the premises being let on a verbal agreement. You would in any case be able to remove the buildings and fixtures erected for trade purposes, and also the plants and shrubs planted for sale, but not those permanently planted. It is

not imperative to employ a solicitor, and from your letter I think you are capable of drawing an agreement for yourself. I give you a rough draft of such an agreement: "An agreement made this — day of —, 1897, between (landlord of) — and Virginia, of —, whereby the landlord agrees to let and Virginia agrees to take the (here describe the holding) upon a yearly tenancy from the (here set out the date when the year of tenancy commences), at the yearly rent of £—, payable half yearly on the — day of —, and the — day of —, the first such payment to be made on the — day of — (if quarterly payments or otherwise make the necessary alterations), the tenancy to be terminable on the — day of — in any year by half a year's previous notice in writing given by either of the parties to the other of them. (Here set out any conditions as to rates and taxes, next as to proper management and cultivation, and as to repairs, if there is a house and buildings, etc.") Then: "On quitting the holding the tenant shall be at liberty to remove all shrubs, plants, flowers, bushes, trees, etc., planted by him since the (here set out the day and year when you first entered into occupation), and all buildings, sheds, greenhouses, fixtures, and fencing erected by him since the last-mentioned date." A forfeiture clause should be added, in case the rent is in arrear forty days, or in case the tenant becomes bankrupt, etc., and any other provisions desired by either of you. Then sign the document and make an exact copy of it. Both the agreement and the copy should be signed by you both, and when finished you should take both the agreement and the copy to a stamp-office to be sent to Somerset House to be properly stamped.—K. C. T.

Greenhouse overlooking adjoining garden.—I am about to build a greenhouse, and the windows of it will overlook my neighbour's garden. How near to his wall may I place those windows, as I am sure he will compel me to board them up if he can do so?—X. Y. Z.

*** You may erect your greenhouse as near your neighbour's wall as you think proper, so long as you build it upon your own land. And you may make it all glass, if you think proper, and he cannot hinder you. All that he can do is to heighten his own wall or erect some hoarding upon his own land which will shut out the view from your windows or will prevent the passage of light and air to your greenhouse. Whatever he does must be done on his own land.

Meaning of the term "a bushel" of Apples.—I sold, by sample, 6 bushels of Apples to a London salesman at seven and sixpence per bushel, and forwarded the Apples in due course in bushel baskets filled as full as possible. The salesman contends that it is a recognised custom of the London trade that a bushel of Apples shall weigh about 48 lb., and he states that the consignment sent was about 10 lb. per bushel short weight. Nothing was said about weight at the time of the sale. Can I recover the full price originally agreed upon?—H. W. B.

*** I am not sufficiently acquainted with the London fruit trade to say whether the term bushel of Apples is understood in the trade as meaning about 48 lb.; but even if is so understood it would not apply to your case, as there is no evidence that the custom was incorporated into your contract. I think that you could recover the full price of seven and sixpence in an action, but it will cost you far more to recover the small sum at stake than the sum itself, and I strongly advise you to put up with the loss, and to sell by weight on a future occasion.—K. C. T.

BIRDS.

Treatment of rose-breasted Cockatoo (*F. Clark*).—You cannot do more than constantly repeat, in the hearing of your birds such words as you wish it to acquire. There is, however, but little probability of its ever becoming a good talker, its natural voice being so very harsh, the yells of some individuals of this species being absolutely demoniacal. It is a good plan to supply to all the Parrot tribe a piece of soft wood on which to exercise their beaks and afford them healthful occupation, the want of which often causes them to become feather-eaters, and to denude themselves of nature's covering. This might cure your bird of the objectionable habit of squeezing one's fingers rather hard whenever he gets a chance of doing so. Supply it with plenty of coarse grit sand to assist in the digestion of its food, which may consist of Hemp and Canary-seed, Nuts, Maize (which should be boiled and given fresh daily), and plain biscuit. No animal food of any kind should be given, and "sop," in the form of bread-and-milk, so commonly given to Parrots in unlimited quantities, should be carefully avoided, as it often brings on over-distention of the crop and indigestion. You would find Dr. Greene's "Favourite Foreign Birds" useful; it is published by L. Upcott Gill, 170, Strand, London (2s. 6d.).

Teaching Jackdaws to talk (*F. A.*).—Jackdaws will readily learn to repeat words, and imitate all kinds of domestic sounds, if taken in hand at an early age; but to split their tongues to enable them to do so is a brutal and criminal practice. Indeed, these birds will acquire much without any special teaching, although, in order to become proficient scholars, the words or sounds it is wished they should learn must be constantly repeated to them, while they are kept as much as possible from hearing a general combination of noises. The best place for imparting instruction to these birds is a somewhat dark, quiet room, into which more light can be admitted upon their attempting to repeat what it is wished they should learn.

POULTRY.

Gas-lime on poultry and rabbit-run (*E. B.*).—We cannot lose sight of the fact that gas-lime contains poisonous matter which destroys everything it touches, so far as vegetation is concerned. Whether it would have the same effect upon Fowls or Rabbits I am not prepared to say. I believe, however, the Fowls would be inclined to give the lime a rather wide berth, if it were possible for them to satisfy their requirements elsewhere. The Rabbits, too, would naturally seek for more dainty morsels if such were obtainable. But you cannot prevent either Fowls or Rabbits running upon the land which has been dressed with the gas-lime, and therefore it seems to me the wiser plan to run no risks, particularly as caustic-lime would answer the same purpose as regards purification, and not destroy the Grass which you cannot wish to kill. Hot slaked lime is dangerous to Fowls until its caustic properties have passed off—a question of a day or two.—DOULTING.

Soil in Fowl-house (*Mach*).—Fine soil from the garden, if dry when put in, is perhaps the best possible article to use underneath the perches of a Fowl-house. It absorbs the droppings as they fall, and possesses no injurious properties for manurial purposes, as is the case with some kinds of sawdust. The manure thus obtained will do well for all kinds of garden crops, particularly for vegetables, such as Cabbage, where a profuse growth of leaf is desirable. Being already mixed with soil the Fowl-manure will go farther than would be the case if it were applied direct in an undiluted state. On your porous soil, however, I think it likely there would be a considerable waste of fertilising matter in the course of the year, and therefore I question whether you could satisfy the wants of the crops by the limited supply of Fowl-manure obtainable. To economise the manure you should be careful to keep such light soil cropped in the winter, and as far as circumstances permit, apply the manure just when a crop is ready to take advantage of it, or immediately previous to the crop being sown. Fowl-manure dried and kept in tubs, makes an excellent top-dressing for Onions and the like.—DOULTING.

Cures for poultry ailments (*Seven Years' Reader*).—For an ordinary cold I think it would suffice to house the bird in a comfortable coop, feed on warm food seasoned with Cayenne, and give a roup pill or two daily. Roup requires more prolonged treatment. House and feed as before advised, give a half teaspoonful of Epsom salts, and a roup pill morning and evening, and two or three times daily wash the mouth, throat, nostrils, and eyes with Labarraque's solution of chlorinated soda, diluted with twice its bulk of water. Prescription for roup pills: Cayenne pepper, 20 grains; copper sulphate, 10 grains; copaiba, 1 fluid drachm. Sufficient for twenty pills. Gapes are cured by making the birds inhale the fumes of carbolic acid, or by removing the worms which cause the gaping by putting a horse hair down the windpipe, and twisting it round and withdrawing it, when the worms will adhere. This treatment cannot be fully described in a brief reply. Diarrhœa is caused either by a cold, injudicious feeding, or insanitary conditions, and cannot be cured until these conditions are removed. I will try to go into these matters at greater length shortly. But are not your surroundings just a little bit insanitary?—DOULTING.

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INDOOR PLANTS.

A GAY GREENHOUSE ALL THE YEAR.

Observing that amateur gardeners are continually asking how to maintain a greenhouse gay all the year round, especially in the dull season, I venture as an amateur to give the results of an experience of half-a-century in that direction. Where a staff of skilled gardeners can be kept, and there is a succession of houses of various degrees of heat and moisture, any hints of mine would naturally be superfluous; but to such as myself the knowledge of what can be done without much expense never comes amiss. One of the best pieces of advice I ever had came from the pages of a horticultural journal many years ago, contributed by an eminent authority upon all gardening questions. He was writing about the abuse of heat, and said that when he went from home in the summer he had the back lights taken off his greenhouses. It has been my aim ever since to ascertain how little heat was necessary for such plants as I fancied, and to keep up to and within the limit. My house is about 20 miles inland, and beyond a propagating-house about 10 feet square none of my three greenhouses can be heated above a moderate greenhouse heat, which I am careful to keep up, as occasion requires, without fluctuation, especially at night, not following nature in that respect, because I consider that the whole system of growing plants under glass is artificial, and that if plants get plenty of air in the daytime they should be warm by night. Nor am I an advocate for swimming the floors every night, as some do. All my greenhouse cultivation is pot culture, with the exception of Plumbago and Ficus repens upon the wall. If I have a system it is founded upon the idea that plants under glass need a summer outing as much as a City clerk. After this preface a statement of what I have in bloom and vigour in the middle of November will suffice to show how much can be effected by personal care and experience.

In addition to a display of the best Chrysanthemums chosen for succession, and left out in the open air as long as frost keeps off, in order to have a supply for Christmas, a selection of Primulas, including P. obconica, as a standing dish, not forgetting two or three pans of Saintpaulia ionantha (which has bloomed all the summer in a warm corner), accompanied by pans of Cypripedium, Begonia Rex and other Begonias, Coleuses, Streptocarpus, and Gloxinias (the last two just going off). The larger plants scattered on the stages and about the houses include bushes of Sparmannia africana, Lasiandras, Abutilons, Plumbago (on the walls), Heliotrope, Lantanas, Nile Lilies, Genistas, scarlet, white, and pink Pelargoniums, a crimson Passion-flower, Chorozema ilicifolia, Linum trigynum, and, most prized of all, four 10-inch pots of the floriferous Jasminum grandiflorum, the white sweet-scented flowers of which continue throughout the winter, and furnish many bouquets for wear and for the table when mixed with the yellow and red Chorozemas, and Aloysia citriodora, with the addition of a sprig of Heliotrope, if its scent is liked.

The above-named plants are all covered with bloom, which I attribute to their having been out-of-doors all the summer under a thick, sunny hedge. The Lasiandras are a picture (to use a common expression here), and are as thickly covered with flowers as a Dog Rose-bush in June. In bloom also—or shortly will be—are the Epiphyllums, Euphorbiums, Vincas, Cœlogynes, Dendrobiums, Oncidiums, Zygopetalon Mackayi, and a few other Orchids. These get help from the propagating-house, in which I have a few Crotons; but the half-hardy yellow and green varieties of Euonymus, well chosen, are equally serviceable, and almost equally handsome in pots. Other foliage plants, such as Palms, Ferns, Grevilleas, Artillery-plants, and many others which we grow, need not be enumerated; but it is worth mention that we make a practice of sowing a few seeds of Eucalyptus each year, which in their second and third years come in most usefully for house and church decoration. They are planted out in their pots each summer until the third year, when they get too tall for our houses, and then are allowed to die in the winter. Linum trigynum puzzled me for a long time, but by placing the pots in a cold-frame, usually wide open, I have been rewarded by getting bushy plants about 2½ feet in height, which flower profusely, and are our substitute for Allamandas. The exposure out-of-doors keeps the plants from flowering until they are wanted for the dead season, and by pursuing this system it is not too much to say that winter makes no difference to us, either in the glasshouses or indoors. With the new year come bulbs, quickly followed by our W. A. Richardson and other pot-Roses, Azaleas, and Rhododendrons; and so we go on until short days return. If interesting to your readers, it will be a pleasure to me occasionally to report progress during the year. In addition, I grow Black Hamburgh and Buckland Sweet-water Grapes in two of the houses with outside roots. The Grapes ripen by the end of August, and the foliage acts as a screen. The fruit does not, of course, hang well longer than a month or two.

North-west Cheshire.

MIGNONETTE IN POTS.

This plant is always a favourite for greenhouse, conservatory, and room decoration, and by sowing seed at different times a constant supply of its flowers for cutting may be had during the greater part of the year. Mignonette thrives well in a compost of rich yellow loam, put through a ½-inch sieve, one-third rotten leaf-mould, and if at hand some powdered charcoal, mixing all well together. The charcoal keeps the soil open and sweet, and a good portion of sharp silver or river sand may also be used. The pots must be perfectly clean, and plenty of drainage must be used, covered with a thin layer of Moss. Fill the pots nearly full with soil, gently pressing it down, and sow a few seeds over the surface, pressing them gently down, and covering them with some fine sandy soil. Water through a fine-rosed watering-pot, and place them in a temperature of about 60 degs., keeping the pots as close to the glass as possible. If the surface of the pots is shaded until the young plants appear, so much the better, but after they are up they should have as much light as possible to keep them dwarf and stocky. As soon as they are large enough to handle thin them out, leaving six of the strongest in each pot. Tie each plant as it grows long enough to a thin neat stake, repeating the tying as needful until they come into bloom, when they will be ready for conservatory or house decoration. Some weak manure-water should be applied to keep them healthy, when they will yield an abundance of flowers for cutting. If grown in 4½ inch pots, leave only four plants in each pot. In order to grow specimen plants, fill 3-inch pots with compost, placing a few seeds in each pot, and when large enough pull the plants, leaving the strongest one in the middle. After four leaves have been made, pinch out the tops of the plant, when it will throw out strong side-shoots, and these will require to be kept pinched back to three or four leaves, thus inducing the production of plenty of side-shoots. Shift into larger pots when necessary, giving small shifts at a time, until they get their move into their flowering pots. A good-sized pot for a specimen plant will be found to be an 8-inch one. Now, as to

Tree-Mignonette. To be in flower in November the seed should be sown by the middle of March. Use 3-inch pots, which should be thoroughly clean and well drained; place a thin layer of Moss or some rough material over the crocks, and on this put the compost, pressing it firmly into the pots. Place a few seeds in the centre of each, covering them lightly with some fine soil. Give a good watering, and place the pots near the glass in a temperature of 60 degs. As soon as the plants are large enough to show which are the strongest pull out all except these. Put a small stick to each one left, and tie it up as it grows in order to keep it breaking off at the neck. When from 6 inches to 9 inches in length a shift will be required into 6-inch pots, when every care should be taken both as to soil and drainage. A little soot produces fine dark green foliage. Sprinkle it over the Moss on the top of the crocks, where it will also keep out worms. Pots of different sizes can be used, in each of which plants may be grown successfully, but 11-inch pots are the largest ones generally employed. In the matter of

Training, the bulbing stem should not be stopped until it has reached the height required, and this is generally from 2 feet to 3 feet. The side-shoots will be found to form a fine head if properly attended to with regard to pinching and tying down to a trellis made of wire in the shape of an umbrella when opened out. Care must be taken in pinching out the points of the shoots not to injure the stem leaves; a pair of sharp Grape scissors will be found useful in performing this operation. Allow them a temperature of 60 degs., place them near the glass, and give liquid-manure twice a week after they have filled the pots with roots, syringing overhead in hot weather, and by the month of November they will amply repay all the labour bestowed on them. Make another sowing early in June,

using 6 inch and 4½-inch pots, and growing several plants in a pot. They will be found useful for flowering late in the autumn and early in spring. Mignonette, when grown in quantity, is useful to cut from for filling vases when other flowers are scarce. A sowing should be made the second week in August, placing the pots in a cold-frame and thinning out the plants when large enough. Support each one with a thin stick. On the approach of frost they should be placed in a warm-house or pit, as near to the glass as possible. From 45 degs. to 50 degs. will be found a suitable temperature for them during winter. Early in spring the plants will commence to bloom and continue to flower freely for several months. B. H.

Poinsettias.—These are now approaching their full beauty, and at any season of the year it would be difficult to find anything to surpass them in brightness. A great point in their favour is that they last a long time; they may also be grown in the neighbourhood of London without being seriously affected by smoke and fogs. Strong and healthy plants I have never known to fail to produce good heads of their brightly-coloured bracts. I find that after the bracts are well developed sunshine is rather detrimental than otherwise, as it takes the colour out to some extent. I believe many growers fail to grow Poinsettias successfully through propagating too early in the year. It is difficult to keep the old stock plants dormant after April, but if when they have made some growth they are cut back close they will make a fresh start later on. The end of June, or even July, is quite early enough to propagate, and if good, strong cuttings can be had in August there will be time to make good plants. Where stock is limited it may be well to start propagating early, and the tops may be taken off the young plants after they are well established. Poinsettias do not require a great heat, but should be grown close to the glass and fully exposed to the light. A little extra warmth when the bracts begin to show colour will be beneficial.—A.

Manettia bicolor.—This is not so often met with as it deserves, and I find it is a stranger to many gardeners, who on making its acquaintance at once recognise it as a useful though not a very conspicuous plant. Where there is a daily demand for button-hole flowers this little Manettia might be frequently used alone or in company with other flowers of a suitable kind, the only objection being that its short and slight stems need wiring in order to set them up. This in many cases would not be regarded as an objection, because the resultant bouquet would have a light and pleasing quality about it, equal to many Orchids, which are such favourites for button-hole work nowadays. Another valuable point in connection with the Manettia is the continuous nature of blooming. On a healthy plant flowers are constantly developing during the summer and autumn months—at least, this is my experience of it growing on strained wires near the glass and in a pot. No doubt if planted out the flowers would be larger and the stems of greater length and stiffer, so that the necessity for wiring would be minimised. It is strange that provincial exhibitors of épergnes, which are always an interesting feature, should not have brought this into greater prominence. Light sprays would have a decidedly telling effect arranged among other flowers, Ferns, and Grasses. For house decoration, too, it would have, or ought to have, a similar value.—W.

GARDEN WORK.*

Conservatory.

Exhibitors are now busy taking cuttings of certain kinds of Chrysanthemums. It will be found an advantage if cuttings can be obtained from plants grown in a more natural way than is adopted by exhibitors. We find it best to take cuttings from plants which have not been fed up to produce large blooms. Where there is a lot of late plants coming on now a change is easily effected, and there will be other things coming on to make a change, and one gets tired even of Chrysanthemums—beautiful though they are. Heaths, Epacrises, Abutilons, Zonal "Geraniums," Begonias (fibrous-rooted sections), Roman Hyacinths, Cyclamens, Genistas, etc, will form groups mixed with foliage plants. Well-grown Orange-trees, laden with ripe fruit, used to be a special feature in the conservatory 40 years ago, but fashion changes, and Oranges and Camellias have, for the time being, disappeared. In a light house baskets of Ivy-leaved "Geraniums" will be bright now. Ryecroft Surprise is very gay, and other sorts are equally useful, and if planted out in a warm greenhouse temperature they flower freely for a long time. Good-sized bushes of Eupatorium odoratum are very useful all the winter. The best way to manage these is to prune back after flowering, and plant out in an open position early in June, and pot up again in September, but stand in the shade till the roots are active. I have had dense plants 4 feet high, and as much through, covered with flowers. Of course, the plants were several years old, and had been cut back annually.

The Unheated Conservatory.

This has been a fine season for the cold-house Chrysanthemums have been as bright in the cold-house with ventilators open all night as where fire has been used I know, of course, the fat blooms will not keep long in the cold-house. One foggy night will bring on decay if there is no fire-heat to dry up the damp. Up to the present Heaths have been blooming well in the cold-house, and with a few Grasses (Eulalias) in variety, and Golden Euonymus and Coprosmas to give colour, standard Laurestinus and yellow-flowered Jasmines, and hardy Ferns, especially the Shield Ferns and Hart's-tongues, a very effective arrangement may be made. Give plenty of air, and on mild, calm nights do not close at all. Do the watering in the morning, so that the damp may be dried up before night. If severe frost should set in by-and-bye all the upright glass may be matted up, and if the house is not too large, the roof, or a part of it, may be covered also, and the house made fairly comfortable. A few Auriculas and hardy Primroses, Snowdrops, etc., in pots should be coming on.

Stove.

The warm-house gives us floral and leaf beauty of a different kind. Masses of Poinsettias and Euphorbias can only be seen where there is artificial heat, and the foliage plants from the warm islands and the Tropics have a distinct character, and can only be seen in their best condition in a stove temperature. There is a good deal of decorative value, especially in winter, in handsome foliage. Crotons, Dracænas, Pandanus Veitchi, and the Red-leaved Acalyphas are very attractive when in good condition, and where there is heat there will be a few Orchids, and, of course, there may be Orchids in a cool-house. The Odontoglots and others from the Andes, if they have moisture enough, will feel at home. But the Dendrobes, Oncidiums, &c., must have heat. Still, a stove need not be so hot as it commonly is to suit a great many species of what are termed stove plants. If the house is rather cool for any plant keep it on the side of dryness at the root; it will be none the worse for a partial rest for a time till the days lengthen; 60 degs. to 65 degs. need not be exceeded, especially if cold weather comes.

The Rose House.

The moment heat is applied to Roses vaporise to clear off the green-flies, and prepare a wash for the mildew, which will probably appear on some variety, no matter how carefully the ventilation may be managed. Mildew is supposed to originate in a stuffy atmosphere, or through some check given by a rush of cold air through tender foliage. There is a good deal in being in time with the remedies before the parasite is well established. Do not over-water Roses. Keep the roots moist, but not drenched with water. Roses will stand a good deal of heat, but if really fine blooms are wanted do not go much beyond 55 degs., and ventilate on the south side only when the wind is cool.

In the Mushroom House

Rhubarb, Seakale, and Chicory may be brought on in addition to the Mushrooms, which are sure to be in demand, and it is very gratifying to the gardener when he has a good supply of the produce which may be produced in the Musbroom-house. There may be plenty of good Cauliflowers and Brussels Sprouts, but Asparagus, Seakale, and Mushrooms will be wanted now.

Early Peach House.

Begin with a night temperature of 45 degs. Peaches will not bear hard forcing at the beginning. Get the buds on the move, and then increase the night temperature to 48 degs., afterwards to 50 degs., and so on, advancing as progress is made. Syringe the trees twice a day, especially in fine weather, when there has been sunshine enough to warm the house. Give air when the thermometer approaches 70 degs.

Window Gardening.

Berry-bearing plants are charming in the window-boxes outside. Pernettya speciosa and some of the hybrids from P. macronata are very effective. They are also very bright room plants, more useful, I think, than the Solanums, and the Solanums are often so disappointing. As soon as one gets a plant indoors, first the leaves begin to fall, then the berries. The Pernettyas, Skimmias, and Aucubas will hang on for some time.

Outdoor Garden.

Sweet Peas may still be sown on a well-drained site. Scatter a few sifted ashes along the rows, if sown in rows, to keep mice and slugs from eating them. We find the Everlasting Peas very useful for cutting. The blooms are more lasting than their fragrant relatives, and the plants do not suffer so much from drought. Last season in our district the Sweet Peas after two or three weeks of great beauty went to seed with the heat and drought, and then we were glad to clear them off and fill up with something else. I think I have never seen the white and yellow Marguerites so full of blossoms as they are at this season. The yellow kind especially is supplying handfuls of flowers for cutting, and Roses are still abundant, especially the Dijon Teas. These are the Roses for difficult situations. They have vigour of constitution, and are sure to acquit themselves well. Hardy annuals sown in August will transplant now to fill beds and borders. These are so beautiful that more use ought to be made of them. It is not, of course, necessary to transplant when they happen to be in the right position, and when sown in autumn they flower so much better and are more robust. If the Gladioli are not yet lifted, they will be safer out of the ground, especially if the soil is heavy and damp. If frozen, they die.

Fruit Garden.

When pruning Vines, lay a few of the strongest shoots on one side, and place in ordinary soil to keep the wood fresh for propagating purposes. Very strong canes may be obtained by layering young rods from permanent Vines. They are supported by the parent plants, and consequently receive no check. Vines may be readily struck from eyes, but good canes cannot be obtained in one season without bottom-heat. It does not matter much whether the Vine-eyes are started in pots or in sods of turf fixed close together on a board on the hot-water pipes. For many years we have struck them in this way over the hot-water pipes, and, when it is necessary to have them in pots, transferred them when about a foot of growth has been made. In pruning bush fruit-trees very little shortening will be necessary—only sufficient to prevent robbery by the strong branches and to maintain symmetry. It is always worth some trouble to secure balance in any tree. A well-grown fruit-tree is as much an object of interest to the fruit-grower when bare of fruit and foliage as it is in the summer. We can then get behind the scenes and see the round, fat, fertile buds swelling up, ready to begin work again. Every pruner ought to be able to distinguish between the buds that produce blossoms and those which produce wood and leaves only. It is true that some of the buds which have begun to round up into fertility stop half-way and fail us. It is difficult, if not impossible, to tell when the work of building up the fertility of the bud is complete. If Strawberries in pots have developed more crowns than one it would be as well to disbud so as to leave only one. I like plants with one well-developed crown.

Vegetable Garden.

The frost has kept off in a wonderful manner, and green crops are very full of sap. Look after Cauliflowers turning in. It will be safer to lift them and plant in a trench where the stems can be buried and the tops sheltered by mats when frost comes. A dry bank is the best position. The forcing gardener is busy now making hot-beds for Asparagus and other things. Lettuces force well on mild hot-beds. Beds of leaves do for the purpose, with any rough frames and lights over them. They come on well in the frames from which the first lot of Asparagus has been taken. The small, quick-hearting Cabbage Lettuces Tom Thumb and Paris Market are best for early work. The Cos varieties may be planted on a later bed. Protect Globe Artichokes, if not already done, with litter, with enough earth over it to keep the wind from shifting it. Turn over manure and compost heaps to get them ready for the land when the frost comes. Some material of this kind, especially charred rubbish, should be kept at hand for top-dressing, covering seeds, etc. Drains and outfalls should be seen to if necessary. Box edgings may be repaired. Very often the best way of making edgings right is to take up and replant. Put worn paths into shape to throw off water. E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 29th.—Finished pruning bush fruits, and gave the bushes a dressing of soot and lime. Prepared and planted cuttings of Gooseberries and Currants. Finished planting standard and dwarf Briers for next season's budding. Reduced the growth of some of the rampant-growing Roses to relieve the wind pressure. Looked round standard Roses, and renewed stakes where necessary. Still busy pruning and training fruit-trees. Cut and bottled the Hamburgh Grapes.

November 30th.—Put in cuttings of Chrysanthemums. We are striking them in frames in a house where heat can be used when necessary. In previous years we have used a cold-house for this work, but shall not do so again. Started the early Peach-house at a night temperature of 45 degs., giving air on bright days at 60 degs. Of course, air-giving is done a little at a time to avoid sudden changes. Sowed seeds of Ham Green and Freedom Tomatoes for planting as soon after Christmas as the plants are ready.

December 1st.—Mulched beds of herbaceous plants and bulbs with Moss-litter-manure. Transplanted deciduous trees and shrubs of various kinds. Moved bulbs to forcing-house. Flowers will be wanted at Christmas. Potted more Lily of the Valley. Pruned, washed, and trained late Peaches under glass. Also pruned and trained Apricots on wall. The borders in front of the trees are not cropped nearer than 5 feet. Neither is this reserved space dug with spade, but it is light pricked over when the trees are trained.

December 2nd.—Wheeled manure over vacant land intended for Onions. Planted rather a long arch spanning walk with Roses Crimson Rambler and Félicité-Perpetue and Clematis Jackmani. Planted a low wall with Pyrus japonica in variety. Another bit of low wall has been planted with Berberis stenophylla. We already have a low wall covered with Laurustinus, and very charming it looks. Sowed Mustard and Cress in boxes in warm-house. Planted more Seakale in Mushroom-house.

December 3rd.—Trenched vacant ground. Our soil is holding enough to permit of the manure being given now, and the soil is consequently in good condition for cropping early. Forked over early border ready for cropping early in the new year. Early Potato sets have been placed in shallow trays, crowns upwards, to develop crown-eyes. Mulched a few tender things in rock garden with Cocoa-nut-fibre. Top-dressed lightly early Cucumbers, now bearing freely. Planted more French Beans in 6-inch pots.

December 4th.—Loosened branches of Peaches and Nectarines from wall ready for pruning. Pruned Plums, Morello Cherries on north wall, and syringed with Gishurst compound, 4 oz to gallon. The black-fly gave a little trouble on Cherries last season. Planted a hedge of Thuja erecta viridis. Moved a few dozen pots of Royal Sovereign and Viscountess de Thury Strawberries to pits to start into growth for early fruit. Retained specimen Azaleas and other hard-wooded plants. Cut down Salvia Bruanti, which has done flowering.

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** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

FERNS.

NATIVE ASPIDIUMS (POLYSTICHUMS), OR PRICKLY SHIELD FERNS.

These are represented by two species and numerous varieties, divided into two classes—the common Prickly Shield Fern, botanically known as Aspidium (Polystichum) aculeatum, and the soft Prickly Shield Fern, under which denomination Aspidium (Polystichum) angulare and its many varieties are classified.

A. aculeatum is a particularly strong, bold-growing Fern, with numerous fronds, attaining a height of 30 inches and a breadth of about 6 inches at their widest part, and disposed in such a way as to give the plant the appearance of a gigantic shuttlecock. The fronds are of a dark bluish-green shining colour on their upper side, while their under side is of a paler tint; the stipes as well as the crown of the plant are densely covered with large blackish-brown scales.

A variety of the Prickly Shield Fern (Aspidium (Polystichum) angulare Kitsonæ). From a photograph by Mr. W. Doodson, Islam, Manchester.

The common Prickly Fern is one of the oldest known British kinds, for mention of it is made by Johnson in his edition of "Gerard's Herbal," when in this instance not only the name of the discoverer of the plant, but even the very day of its discovery, is given:—"It groweth abundantly on the shadowy moist rocks by Maple Durham, near Petersfield, in Hampshire. John Goodyer, July 4, 1633."

We may also add that the Prickly Shield Fern is common in certain districts in England, where it is found in a wild state in widely-separated habitats.

A. aculeatum has produced but comparatively few striking varieties. The most striking variety at present in cultivation is P. aculeatum lobatum, a form so entirely distinct that by several authorities it has been admitted as a species, and its constancy is such that it has never been noted anywhere to have under cultivation assumed the form of P. aculeatum. It is exactly intermediate in size and also in character between that species and P. Lonchitis, its fronds being from 12 inches to 18 inches long.

Of the several crested forms of A. aculeatum known, the most exquisite is undoubtedly the one called acrocladon, which, we believe, was discovered some thirty years ago in the west of England. In this variety the greater portion of the frond, which attains some 20 inches in length, is narrow, the short pinnæ being slightly crested; while its upper portion is many times divided, forming at the apex a head of dense multifid segments four times the width of the lower portion of the frond. In general appearance this splendid form may be said to correspond to the variety grandiceps in the section of A. angulare. The variety densum, originally found in Devonshire, is a very handsome, bold, and distinct form, with lanceolate fronds about 15 inches long by 4 inches wide, and whose ample and somewhat crowded pinnules give the plant an imbricated appearance. A. aculeatum proliferum is a very elegant form, with finely divided fronds.

A. angulare is really a form of A. aculeatum, but for garden purposes treated as a species. Of this there are many forms, such as A. a. acutilobum, A. divisilobum, and the variety illustrated, Kitsonæ, which is very handsome, with broad, sturdy fronds.

The Prickly Shield Fern and its varieties are free growing, easily managed, and very desirable Ferns for the rock garden, fernery, and also for pot culture, as they are all evergreen, delighting in a mixture of sandy loam and fibrous peat in equal parts, resting on a sound drainage. Although when once established the influence of strong light is not injurious to them, they produce finer foliage when grown in a shady position. They require during the growing season to be supplied freely with water, and their roots must be kept constantly moist also during the winter. A. aculeatum is also an excellent Fern for pot culture, as it bears indoor treatment much better than most British Ferns. Its propagation is generally effected by means of its spores, which, if sown when they ripen at the end of the summer, make very nice young plants during the following summer, and are very valuable for the decoration of the greenhouse and conservatory during the winter.

THE KITCHEN GARDEN.

NOTES ON PARSLEY CULTURE.

Parsley is one of the most important of our kitchen garden crops, as there is a constant demand for it throughout the year for cooking and garnishing purposes. Now, people who can gather abundance of it daily from the beginning of January to the end of December are very fortunate. It will not, however, be produced for all that time, or, indeed, for half of it, unless a good deal of forethought and attention are devoted to its culture. It grows like a weed in some gardens, and in others the reverse is the case, and even in places where it has been doing well it may take a turn any day the other way; so capricious is it that it may all go off in a short time and cause much inconvenience, as Parsley is one of those things which is in daily use. Of varieties, many are recommended in seed catalogues, but all kinds are valued about alike by the cook, the main object being to have the leaves large and well curled, and any good kind will supply leaves of this sort. Myatt's Green Curled, when selected with ordinary care, is a good variety. In most plantations of Parsley young plants will be observed with an appearance like that of hybrids between Celery and Parsley. These are not valuable, and should be drawn up and thrown away. In order to have plenty of good Parsley all the year round it is well to make three sowings. The first sowing should be made as early in spring as the weather will allow, the second in April, and the third in July.

Gatherings may be made from the first sowing in May, the second in July, and from the third during the whole of the winter. Where the first sowing succeeds really well it may keep up a supply for a whole year or longer, but with a crop that is so liable to go off and so indispensable it is always a satisfactory plan to sow, as I have stated, at three different times. The best part of the garden is not too good for Parsley. In many instances it is sown in odd corners, and treated as something of little importance; but those who wish to have it good and plentiful should not follow that practice. A little corner of it badly grown will never meet the demands of a large establishment, but a good place in the main kitchen garden quarters will do so if properly managed. A light soil does not suit Parsley, as in dry weather it shrivels up, and fails to produce large, healthy, green leaves, which alone are useful. A deep, cool, and good soil is best. Plenty of manure is required to produce luxuriant growth, and some salt, lime, or soot should be added to prevent insects from harming it, and then dig in. For the April sowing the manure may be dug in in January, and before putting in the seed fork some lime into the surface of the ground. I do not mention any weight or quantity of lime to be put on the square yard, because this should be in accordance with the character of the soil and the insect pests therein. The young plants are very hardy, although they do not come up very quickly early in the season. Seed sown on a dry day during the early part of February will produce plants in about four or five weeks, if the weather is mild. Sowing broadcast is not a good way. Rows are the best, but they should not, however, be too close together. Some may think they are saving good ground and valuable space by sowing closely and in odd corners, but that is not my opinion. I have tried both ways, and found the close rows very unsatisfactory; 15 inches from row to row is none too close in good soil, and where the plants are expected to develop good leaves the drills should be opened to the depth of 2 inches and the seed sown in them very thinly. By placing some sandy soil over the seed germination is much assisted. This is of more importance for early than late sowings.

Thinning out.—As soon as the young plants are about 1½ inches in height they should be thinned out to 3 inches apart. As growth proceeds they may be thinned again to 6 inches from plant to plant. This practice applies to all young Parsley plantations. To sow seed in rows widely apart from each other, and then neglect to thin out in the rows, would destroy all the benefit derived therefrom. When the plants are fully established and producing more leaves than can be used some of them may become yellow in colour from old age. These are of no advantage to the plants, and may be removed before they become too numerous. As winter approaches each plant should be furnished with a quantity of robust, healthy, green leaves, which will be in great demand in December and January, and, indeed, throughout the winter; but as growth is not rapid in winter it is best to depend on that formed in autumn. In many instances, doubtless, a good deal of the Parsley has been gathered, and all that remains is root and some too old or very young growths. The old ones are of no use, and should be picked off; then sprinkle a little soot all over the surface, even between the plants, and fork it in slightly. This will induce the young growths to push out and become ready for gathering, and useful before the spring seedlings will furnish any supply. B. H.

Benefit of digging.—Certain of our crops, such as Peas and Onions, succeed best on ground made ready to receive them some months in advance of sowing, and the first opportunity should be taken of preparing for them. For Peas the ground had better be double-dug, and most of the manure buried in the bottom spit; but for Onions I like to keep the manure nearer the surface, and am content to grow these on plain-dug land, especially where this has been trenched or double-dug within recent years, or where the crop is to follow Celery, which has been grown on the close-planting system that I have often recommended. Onions enjoy plenty of well-rotted manure, and I always contrive to give them as much as can be buried in digging, and, to provide for this, I am careful to have a wide trench or opening made at the end of the plot where digging is to commence. This opening should be at least three spits wide, as the best of diggers cannot prevent a gradual closing up as work proceeds, and, unless a good start is made, the whole space is closed before the end of the plot is reached. I alluded above to the Celery ground, and I find that this is one of the best positions that can be selected for Peas or Onions. I do not recommend simply levelling down the ridges and leaving the ground without further digging for the successive crops, as I find it pays best to dig all through after levelling, this certainly leaving the whole plot in a more satisfactory condition, besides preventing an irregular settlement.—T.

Globe Artichokes.—Protection of some kind must be kept in readiness for these, but I avoid its application as long as I dare, for, being in the open, any material used is liable to get wet, in which condition it does far more harm than good. Something may, however, be done at once towards preparing to protect, and that is to arch over each stool three or four fairly stout pieces of Willow, Hazel, or any other easily bent stick. These should be long enough to keep the covering material well above the plants, and the ends may be brought loose up to the stools. I am aware that sticks or any other means of keeping the covering from direct contact with the crowns are seldom used, but they are easily applied, and my experience is that plants so treated winter much better than do those which have the Bracken or litter packed directly round and on to them. Of this I had ample proof in the spring of last year. Whatever is used for protection should be replaced by a fresh supply whenever it gets soaked with rain, a wet covering left on all winter being more harmful even than a severe frost.—T.

Winter Turnips.—Many have a desire to see their Turnips, Carrots, Parsnips, Beet, Celeriac, and other vegetables housed and the store made neat for the winter supplies. I am sure there is too much haste often displayed in the lifting of roots. Many need no storing at all. I have often seen such as Carrots and Turnips very scarce, the farm having to supply such in country districts. We coddle our roots too much, with the result that they lose quality, grow out badly, and are not fit for use. I often see winter Turnips in the store long before this; whereas they would be much better freely exposed and would remain solid longer. I am aware roots much overgrown will not stand much frost, but these are useless in any form; it is the medium or even undersized roots which keep best. If Turnips are grown purposely for winter use they give little trouble if not stored too early. My plan is to place them in bulk and cover with enough Bracken to ward off severe frost.—M.

CHINESE PRIMULAS.

With no class of greenhouse plants has greater progress been made than with the Chinese Primula, a flower now making many greenhouses gay. Some thirty years ago we had to be content with two or three shades of colour, and poor, washed-out colours they were too, while the trusses were small, the flowers puny, and the plants straggling in habit. At the present time there is quite a wealth of varieties available, the colours comprising white, pink, rose, scarlet, crimson, and blue shades, while the trusses are stout, the flowers of great size but perfect in form, and the habit compact yet robust. So many and beautiful are the single varieties that a collection proves most attractive, added to which there is nearly as great a variety of double and semi-double forms that are also beautiful in their way. Early in May is quite soon enough to make the first sowing of seed, a successional pinch being sown a month later. The seed germinates most surely when pressed into the surface of pans of fine peaty soil and scarcely covered with sand, placing it in a moist gentle heat, covering with glass, keeping it well darkened and uniformly moist till it is growing. Soon after the seedlings are pricked out into pans or singly into 2-inch pots frames are the best places for them, keeping the plants well up to the glass with a view to having them sturdy. Those in pans should be moved early into 3-inch pots, and from these transferred to well drained 6 inch pots before they become root-bound. From the smaller-sized pots they may be shifted into 5-inch pots, or even a size larger if properly watered afterwards. Sink the seedlings into the soil up to the seed-leaves when pricking them out, and if when repotted any portion of what should be an underground stem is exposed, pot deep enough to bury this without actually burying the heart. An exposed stem is a source of weakness, necessitating the use of "crutches" and frequently ending in the loss of plants from canker. A compost consisting of two parts of sound fibrous loam to one of leaf-soil, with a little fine charcoal and sand added, suits Primulas well. Pot rather firmly. Water very carefully at first, keep the frames somewhat close for a week, and shade from bright sunshine. When growing freely admit air in abundance, drawing the lights off on mild nights and shading from strong sunshine only. In this way the plants are kept robust and sturdy, and they will flower abundantly on light, warm greenhouse stagings and shelves. They become weedy if smothered by other plants, and are liable to damp off in low temperatures. Liquid-manure in moderation improves the colour of the flowers.

A single-flowered Chinese Primula.

HOUSE AND WINDOW GARDENING.

ARRANGING CHRYSANTHEMUMS.

There is no flower more decorative than the Chrysanthemum, particularly the populae Japanese kinds. It is a great pity that those who arrange flowers do not, as a rule, know how to display the Japanese varieties to advantage, the rows of boxes that one sees at shows quite spoiling any individual beauty they may possess. There is another thing, too, that seems to me to be misdirected energy—that is, in getting flowers of abnormal size, for no one with any love for beautiful things could find pleasure in a flower as large as a mop and as pretty in form. It is very usual for the petals in the centre to decay before the flower has fully unfolded itself. They are of little use in decoration, their heaviness and size making them quite unsuitable, a few smaller blossoms having a much more beautiful and artistic effect.

There are many valuable single varieties for arranging in vases, among others a single quill-petalled kind of a soft buff colour, with vivid green centre, crimson ones, too, of the same variety, and many other colours. Another single kind greatly resembles the wild Dog Daisy. One called Purity is very beautiful with its snow-white curled petals and golden centre. Chrysanthemums are very simple flowers to arrange, the chief point to remember being to keep the colours separate and not to put too many in one jar, as they are flowers that will not bear crowding together. Their curious blossoms want plenty of room to show their individual beauty and characteristics.

There are many colours, of course, that may be safely blended together, one of the richest effects I have seen being an old china bowl full of bronze and crimson blooms. The yellow ones, too, are very cheerful, brightening up the most gloomy corner. Do not forget what I have said before, and that is to arrange their own foliage

with them; no other suits the flower so well. To the possessor of Venetian glass there is no end to the beautiful effects obtained with Chrysanthemum blossom, for there is nothing to equal the lovely colouring in this glass, especially the green and amber tones. There are many other delicate tints that will harmonise with various flowers, but the flowers never look so well as in green, amber, or quite colourless glass.

A. E. C.

FRUIT.

PEACHES ON WALLS.

In the northern parts of the kingdom there is often much difficulty in getting the wood of these well matured, particularly when there has been so little sunshine during the autumn. To assist the ripening allow the trees to remain nailed to the wall, as what little warmth is generated thereby will be of great benefit in maturing the sappy growths. By so doing this will not only be of great value in hardening the wood, but will also afford some protection from the frost's severity during winter. On the other hand, those trees growing against south walls in the southern counties will be greatly benefited by having the shoots liberated and allowed to remain in that position till the buds begin to swell in spring. The wood being well ripened causes the flower-buds to be very prominent, and these, when the shoots are left nailed close to the wall, being excited by the first rays of genial sunshine, burst into bloom. A severe frost or two then follows, killing not only the flowers, but often injuring the young wood to such a serious extent that it is a considerable time before the trees recover. It is therefore advisable to retard growth as long as possible in spring, that there may be less risk from inclement weather. To do this effectually the trees ought to be left unnailed as long as possible, that the heat from the walls may not bring them forward. Care must, however, be taken to secure them in such a manner that no injury may be done by the wind swaying the branches to and fro. If the leading growths are securely fastened, the others may be tied to them till the time comes for nailing in spring. Where walls are wired the growth is not so much affected early in the season, as there is always a cold current of air passing between the trees and the wall; therefore tying of such shoots as required may be done at the present time, taking care in doing so not to make the ties too tight. Peaches on the open walls are in many places subject to blister of the foliage; this in a measure is due to cold currents at a time when the leaves are very small. It may also be traced to ill-ripened wood, as the young growth from such is always more sappy than that from those shoots that were thoroughly matured. To enable the wood to become better ripened allow more space between the shoots when tying. Where the trees are in good health and make fair sized-shoots a space of at least 5 inches ought to be allowed between them, for be it remembered that not only must there be ample room for the present wood, but sufficient for the young of next year also. Mildew is sometimes prevalent in cold springs. Where the trees were affected last spring both they and the wall should be washed with Gishurst compound or a mixture of soft-soap and sulphur. It will be necessary, however, to be careful not to injure the buds in so doing, or they will fail to expand in spring. Much harm is often done by a careless use of too strong insecticides, even when the trees are in a dormant state, the injury not showing itself till growth commences in spring.

Gros Colman Grape.—Growers of this Grape privately or for market are apt to be much elated when they secure well-finished bunches and fine berries. But, after all, there is hardly a Grape grown that naturally carries finer berries, especially where thinning has been hard and the Vines are well established. Colour, too, is not at all difficult to get if the Vines be young and the crop not excessive. It is when the Vines get to be seven or eight years old, and really enormous crops are taken from them—and it is only such crops that pay—that colour is more difficult to obtain. Still, very much depends on earliness or lateness in starting, as the berries need a long season. For market purposes, poor as the Grape is in flavour, the variety is one of the easiest to grow and greatest weight bearers. Those who have seen this Grape grown by hundreds of tons in our leading market nurseries will admit that there is nothing to be proud of in getting a few extra good bunches.—A. D.

APPLE NORFOLK BEAUFIN.

This famous old Norfolk Apple is still highly thought of in the eastern counties, and deservedly ranks with the best of our late cooking Apples. As a keeper it has few rivals, for it may easily be kept in good condition until the end of July, when new season fruits of the early varieties come into use. Though not so juicy as the Wellington and some others, its firm flesh makes it suitable for a greater variety of the purposes to which cooking Apples are put, it being excellent for baking whole, for stewing (though cooked in this way it requires more time than do the more juicy varieties), for preserving, and for drying. Varying seasons do not apparently affect its keeping, and the remark so frequently heard in most seasons that "Apples are keeping badly this year" is never applicable to the Norfolk Beaufin, a quality it

Apple Norfolk Beaufin.

shares almost solely with that much inferior Apple the Easter Pippin. The tree here, on a light and sandy soil, is a robust and healthy grower, and old trees bear fruit equally as fine and clear as do younger ones; in fact, the variety, in common with some other robust growers, is not seen at its best while the trees are young, neither will it respond to the close spurring system of pruning, and for all growers of that type I only prune sufficiently to admit light and air to the trees. The tree on which the branch here illustrated was growing is a low bush some eighteen years from the graft, and it has only borne freely during the past few years. It is in a Grass orchard where it and its neighbours get an annual mulching of charred rubbish. On cold, heavy soils the tree is said to canker badly, and the fruit is small and much spotted in wet seasons, but where it grows well the fruit is clean, handsome, above medium size, and of a uniform dull red colour except at the base, which is generally of a deep green.

J.

Cox's Orange Pippin.—With reference to Mr. Newton's interesting letter about this and other Apples, permit me to say that I think that, while his estimate may be correct for his own district, it is not so for England generally. For some reason this Apple is not a fruitful Apple everywhere. If it were so the excellent price we see given for it in the market would surely bring quantities in, whereas it is most rare to find a good barrel or bushel of Cox's late in the season, when any number could be disposed of at a high price. I have myself seen market gardeners cutting down fine trees of it in the Thames Valley because, they said, they never could get it to bear. How is this accounted for?—R.

Orchard-house (*S. C. D.*).—We can only reply to you in this way: The book you inquire for is "The Orchard House," by Rivers, price, we believe, 3s.; can be had of Longmans, publishers, or doubtless obtained through any bookseller. In asking for information as to treatment of fruit-trees in pots in an orchard-house, we have to face the difficulty that you have no knowledge whatever about the subject, and that successful orchard-house culture, especially of trees in pots, is difficult unless thoroughly understood. We do not know how long your trees may have been in pots. You say you have been in the place two years, but mention nothing as to whether in that time the trees have been either repotted or top-dressed. It is our impression that as the trees, though blooming, fail to fruit, all need repotting, turning them out of the pots, reducing the balls of soil fully one-third, and then repotting with good turfy loam, a little old hot-bed manure, and some fine-crushed bone-dust, very firmly, in fresh pots a size larger than the old ones. If that be not done, then remove all the soil possible from the top, 4 inches deep, and replace with fresh soil, such as mentioned. In each case press the soil in firmly, but leave ample room at the tops for watering. Do the pruning needful some few weeks later. Perhaps your trees have suffered from lack of root-moisture. Really they need plenty of water to thoroughly moisten the soil, and when in fruit some liquid-manure twice a week at least. Orchard-house trees of this nature want little heat. The sun under glass usually furnishes sufficient, unless the fruit be desired specially early. The trees are apt under glass to become infested with aphis, and frequent fumigations are needful as well as often washing. Tomatoes in pots give little trouble, and may easily be grown.

Pear Uvedale's Saint Germain.—It may not be generally known that this monstrous stewing Pear is slow in coming into bearing. I have never known it to fruit in a young state except once, and that was a tree double-grafted and grown in a pot. The fruits were enormous, and received first prize for weight at an important exhibition. I remember a horizontal tree on a west wall in an east garden which did not bear a single fruit until it had grown to a large size, or until it was at least eight or nine years old. When, however, it commenced to bear, it did so regularly, the fruit being very fine. I have had it in this garden, both on a north and south wall, for the past nine years, but even with root-pruning I have not been able to induce the trees to fruit. I have it both in the horizontal and cordon form, both alike being unfruitful. I really think age is the only thing which induces fruitfulness in this variety.—C.

Apple Scarlet Nonpareil.—This small but very showy and good-flavoured late Apple, for some unexplained reason, has been discarded of late years. This is the more strange considering that the tree is very hardy and a good cropper. Moreover, the very late date at which the fruit comes into use adds to its value, it being often plump and good as late as the beginning of June. It stands an unfavourable spring well and generally yields a good crop. Where dessert Apples are being planted for late use Scarlet Nonpareil should be included.—C.

Marguerite Carnations.—The enclosed is a bloom from a Marguerite Carnation raised from seed, the plant being lifted from the garden and potted about a month ago while in bud. Please say if new and worth naming?—F. W.

*** A very bright flower, but we have seen as good. This Carnation varies greatly. See short replies for other question.

CHRYSANTHEMUMS.

Chrysanthemum "crown"-buds (*Venus*).—We think you were exceedingly fortunate with your incurved varieties, as we have never before heard of an instance in which incurved varieties, early and late sorts, were together stopped first of April, and first "crown"-buds retained, yet giving such excellent results as you describe. Princess of Teck is certainly seen at its best on buds on the second run from the "break"—*i.e.*, second crowns, and to get these buds we should prefer to take out the points of the plants about the beginning of the last week in March and taking the second buds. We are aware that Baron Hirsch comes beautifully from first "crown"-buds, but then these flowers are usually a long way past their best before the show days; the same also applies to Mr. Bunn. For refinement and evenness in build, together with a neat finish, we should prefer the second bud from the break for these varieties. So much depends upon the circumstances under which the plants are grown. If they are cultivated in a nice open position, and plenty of room given to each plant, the timing and the resulting growth are so different to plants grown in a confined area and less natural condition. We will endeavour to give a series of articles as you suggest.

Chrysanthemums—twelve Japanese early flowering (*Amateur*).—Although you ask for early-flowering sorts we take it you mean a selection to cover the period between the first week in September and until mid-October. The following are the result of a careful selection: Harvest Home, crimson and golden-yellow, height 3 feet; Mme. Marie Masse, lilac-mauve, rather over 2 feet, very free and branching; Lady Fitzwygram, pure white, very dwarf and compact; Edie Wright, lilac-pink, paling with age, height about 3 feet, very free; Mons. Dupuis, deep yellow, height about 2½ feet; Ivy Stark, like an early Source d'Or, bright orange-yellow, very free and a splendid habit, slightly over 3 feet high; Francois Vuillermet, soft lilac-rose, silvery reverse, very free flowering and dwarf; Mons. George Menier, rich velvety amaranth, very free, and most effective in the border, should be regularly tied up; Mychett White, pure white, very dwarf, and one of the best sorts of recent introduction; Ambroise Thomas, rich crimson-red, with pretty narrow florets, height about 3 feet, free flowering; Ryecroft Glory, golden-yellow, sometimes suffused rich bronze, height under 3 feet; and Mme. la Comtesse Foucher de Cariel, a rich orange-yellow, very free, dwarf and branching. We should also like to add Notaire Groz, a most refined and delicate lilac-mauve, nice bushy habit, about 4 feet in height.

Chrysanthemums—suckers of early flowering kinds (*Amateur*).—It would be quite safe to allow some varieties to remain outdoors in the borders throughout the winter, although some of the choicer sorts, unfortunately, do not possess so robust a constitution as to permit us to recommend the collection as a whole to be treated so. Protection can be given to the roots by mulching them with litter of any kind, such as rotten horse-manure, Cocoa-nut-fibre-refuse, leaf-mould, or sifted ashes. With this attention, and during an ordinary winter season, this would be quite sufficient protection. You might leave in the ground such sorts as Harvest Home, Lady Fitzwygram, Mme. la Comtesse Foucher de Cariel, Blushing Bride, Flora, and others equally robust, but we should advise you to lift and repot such lovely sorts, yet delicate varieties, as Mons. Gustave Grunnerwald, Mme. Eulalie Morel, Mme. Carmioux, Arthur Crèpy, and Ambroise Thomas. The plants may be divided in the spring if that is more convenient, when the suckers may be detached bristling with roots. However, as they root so readily in the spring, we should prefer to insert cuttings then, and grow them on strongly afterwards, planting them out during the latter end of May.

Chrysanthemums Miss Dorothea Shea and Chas. H. Curtis (*Quebec*).—You cannot treat these two sorts in a similar manner to E. Molyneux, as advised in our issue of November 13th last. The first-named sort may be stopped during third week in April, and second "crown"-buds retained; and in the case of the incurved C. H. Curtis we would rather pinch this at end of March and retain second "crown"-buds. What you say about the second "crown"-bud is all right, but by pinching the plants of some sorts early in the year you induce these plants to produce the first "crown"-buds earlier than they would do naturally. Consequently, you are able to get the second "crown"-bud so much earlier.

Chrysanthemum sport (*Sportsman*).—The flower you send to us is none other than the old reflexed sort Pink Christine. We cannot help thinking that a very serious mistake was made when the cuttings were taken, and that the thirty-two plants were in error taken from one plant. Sports usually assume a different colour, but very rarely partake of a different form of florets. The only change we have previously noticed in this variation of form is an inclination of the florets to become slightly quilled in appearance only. We can understand you can have too much of a good thing, but to avoid such a recurrence be exceedingly careful when selecting stock for another season.

Chrysanthemums—white, of good habit (*Alice*).—You ask for any white variety of a similar habit to Viviand Morel, but you do not say whether the flower is to be of similar form to that excellent sort. We take it you wish for Japanese sorts, and have pleasure in submitting a few varieties which should produce as many and as large blooms as the variety mentioned above. Emily Silsbury is a very beautiful pure white flower with long florets, and building up a large bloom similar in shape to Mlle. Thérèse Rey, but a much easier sort to grow; it is also a free-flowering variety, and possesses a fairly dwarf habit. Alice M. Love is another very pure white kind for October. Mme. Ad. Chatin is an easily grown pure white incurved-Japanese, forming a lovely bloom when finished; capital dwarf habit. Mme. Ad. Moullin is another large spreading flower with long, drooping florets, and building up a bloom of handsome proportions, white, faintly tinted green. This variety also possesses a splendid dwarf habit. Mutual Friend is a blossom of grace and refinement, although the florets are long, broad, and curling at the tips; it is pure white and beautifully dwarf. The list should be concluded with Souvenir de Petite Amie, pure white, very dwarf, sturdy habit, and a free-growing sort.

Chrysanthemums—buds failing to open (*A. B. C.*).—From the appearance of the partially-developed flower of Reine d'Angleterre you sent us, there is no doubt it is the result of a "hen and chicken bud." This fact, together with the bud being infested with green-fly, is quite sufficient to account for the unsatisfactory character of your buds. If buds of Reine d'Angleterre be retained so early as middle of August, you will always run the risk of a repetition of this failure. A fortnight later in August would suit this variety much better. Then again, if the weather was very warm at the time the buds were retained, you would find it necessary to shade them until they were progressing satisfactorily. On the other hand, you should have retained buds of Miss Dorothea Shea by the middle of August, as this is a variety needing high culture and a long season for the buds to develop. We can quite understand you getting thin flowers from buds retained so late as early September. You should not be afraid to fumigate your plants when the buds are so badly infested with green-fly as the one you sent to us. The temperature of the greenhouse should be kept between 45 degs. and 50 degs.

Chrysanthemums—when to take cuttings (*Reader*).—You ask when is the proper and latest time to take cuttings of the undermentioned varieties. To this we are pleased to respond, and give you an approximate date for them all. Some sorts, no doubt, need propagating earlier than others, as by a proper recognition of this fact, we may so suit ourselves as to assist in the production of the necessary buds at a time best suited to the different varieties. It may happen, however, that it is impossible to get cuttings from your plants when recommended; in which case, you had better get them as soon after as possible. Commence with the following Japanese during the first week in December:—John Shrimpton, Etoile de Lyon, Edouard Audiguier, Mlle. Thérèse Rey, Gloire du Rocher, Stanstead White, Oliver D. Smith, Lord Brooke, E. Molyneux, Mrs. Richard Jones, W. W. Coles, Mme. Carnot, Lilian Bird, James May, and the reflexed Cullingfordi. The following incurved might also be taken at the same time, Barbara; Nelson (Anemone), for hurrying forward a bud on the third run, should also be taken at this time. Follow ten days later with Source d'Or, Col. W. B. Smith, Lady Churchill (single), John Lambert, and Lord Alcester. About the second week in January you might see to Mlle. Lacroix, Lady Selborne, James Salter, Madame de Sevin, Mons. W. Holmes, Elaine, Viviand Morel, and W. H. Lincoln, each of the foregoing being Japanese, and the remaining incurved varieties at the same time: Madame Darrier, Mrs. Dixon, and Mrs. George Rundle. You will find the above periods assist you considerably, and a great advantage over taking cuttings without giving a thought as to their earliness or lateness of flowering.

Chrysanthemum Edwin Molyneux (*Alice*).—This kind is not suited for making a bush plant, as the resulting blooms would not be full enough. It is a sort needing high culture, and as this term is generally understood, this could not be accorded to a plant grown in the bush form. In fact, it would be more like a large-flowered single than anything else, if grown to produce a large quantity of flowers, as there would be but a few rows of florets. As an exhibition sort, when grown well, there are few even now that can surpass its rich colouring and massive form.

Chrysanthemums (*Autumn*).—We cannot advise you regarding your flowers without first seeing a sample. See reply to another inquiry as to books on Chrysanthemum culture. The leaves of your plants have turned yellow in all probability through overwatering or a lack of the water supply. We think there must be something wrong at the roots. It would very seriously injure the plants to burn sulphur in the greenhouse to kill insects. Fumigate with Tobacco-paper for half an hour on two successive evenings. This should effectually rid the plants of insect pests.

Chrysanthemum Good Gracious (*Alice*).—The form of this flower is quite unique, its long, narrow, tubular florets curling in a peculiar manner, and unless the plant is strongly grown it invariably produces ill-shapen blossoms of medium size. It is very important that the buds should be kept in a perfectly upright position while they are developing, otherwise the florets do not fall down evenly all round, as they should do. As you state, the blossoms appear to be too heavy for the stalks, and this gives them a one-sided appearance unless they are kept in an upright position all through their development. Get Molyneux's shilling book from the author, E. Molyneux, the Gardens, Swanmore Park, Bishop's Waltham.

Chrysanthemums—feeding (*Pakeha*).—Both the manures named may be commenced with at the rate of ½ ounce to a gallon of clear water. Used alternately, they would be better appreciated by the plants. We cannot safely advise you what quantity of strong liquid-manure, drained from the manure-heap, should be added to a gallon of clear water. The strength of such manure varies so much that it is difficult for us to definitely lay down a rule. We have observed the rule to use the manure-water when it has been of the same colour as pale brandy. Soot-water is an excellent stimulant and tonic at any time, and may be advantageously used after you have commenced feeding with strong manures.

Cambridgeshire Chrysanthemum show.—An excellent show was held recently at Cambridge. The flowers and groups were very fine. The Silver Cup for a group was won by Messrs. Hobday and Son, Cambridge, who had also the premier award for 24 incurved flowers in the class open to all England. Mr. W. H. Apthorpe was first for 36 flowers of Japanese varieties.

Chrysanthemum Mrs. C. E. Shea.—This is a beautiful late variety. The colour is a soft, creamy-white, with large drooping, interlaced petals, and of great depth. It is a large flower, and very refined. By taking the crown-bud it may be had in bloom about the second week in November, but if left till the terminal it will flower at Christmas.—W. J.

Chrysanthemum Marie Stuart.—What has become of this old, but most attractive Anemone-pompon variety? Fifteen years ago it was to be found in all good collections,

and I do not know a single variety now that can beat it, all points considered. It is such a free-grower and bloomer, that dense bushes can be had for conservatory decoration or for producing lots of cut flowers from a cutting in one season. I once saw a plant grown from a cutting in eleven months some 5 feet in diameter and literally crowded with its elegant blooms, these having a yellowish centre with a pink edge. I have been looking lately in vain in the various trade catalogues in order to find it mentioned.—J.

TREES AND SHRUBS.

THE SKIMMIAS.

THE only species of this genus—there are but four altogether—worth cultivating are S. japonica and S. Fortunei. The former, as its name implies, is Japanese; the latter is a native of China.

First of all, I must state that there has been very much confusion between these two species. The plant universally known in gardens as S. japonica is really not Japanese at all, but a native of China, whence it was introduced to the nursery of Standish and Noble in 1849. Mr. Fortune—the discoverer of the species—met with it in 1848 in a garden at Shanghai, the nurseryman from whom he obtained it informing him that the plant was brought from a high

Skimmia Fortunei.

mountain in the interior called Wang Shang. Of all the plants Fortune sent to the nurserymen above mentioned only one reached England alive, and this identical plant was exhibited at the Horticultural Society's rooms, 21, Regent-street, on October 23rd, 1852. The proper name of this species is Skimmia Fortunei. The true S. japonica is a Japanese plant, and did not find its way into British gardens for some years after S. Fortunei.

The Skimmias thrive under very varied conditions as regards soil, etc. I have seen them thrive splendidly in strong clay and also in poor sandy soil and peat. The true S japonica is one of the very best town evergreens we possess.

In the Kew list Skimmia Fortunei has for synonyms S. fragrans, S. fragrantissima, and S. intermedia. S. laureola is grouped with S. oblata, Rogersi, and rubella. S. Foremani is a garden kind. N.

Evergreens for clay soil.—Will you please tell me what shrubs (Evergreens) would be suitable for clay soil near the sea in an exposed position?—J. C. L.

*** Euonymus japonicus thrives splendidly. It grows into large bushy specimens, and the rich green foliage is the picture of good health. Several of the variegated forms deserve special mention, especially the varieties named aureo-variegatus and argenteo-variegatus. Of the radicans section, Silver Gem is by far the best. It is not of such vigorous growth as the above named varieties, but its small silvery-white foliage stamps it as one of the choicest of ornamental foliage shrubs. The Laurustinus (Viburnum Tinus) is a first rate seaside shrub. It is a capital grower and a profuse bloomer. Berberis Darwini and B. stenophylla succeed well near the sea. They are also very ornamental when in flower. The St. John's Wort (Hypericum calycinum) is of dwarf habit and splendidly suited for planting on the sea-coast. Amongst Cotoneasters Simmonsi, microphylla, and buxifolia are well worth planting. They all carry large crops of scarlet berries during autumn. Olearia Haasti is very fine. It is of good habit, free growth, and an abundant bloomer. Escallonia Philippiana, E. macrantha, E rubra, and E. Ingrami are fine free-flowering shrubs. The double-flowered Gorse grows freely. Its rich yellow flowers are freely produced. Osmanthus ilicifolius is a very beautiful Holly-like shrub, which grows well near the sea. The variegated forms are also well adapted for the same purpose. Arbutus Unedo (Strawberry-tree) grows famously on the sea coast. Amongst Veronicas are to be found several excellent seaside shrubs. They are also very free flowering. A few good varieties are Purple Queen, Traversi, ligustrifolia, and salicifolia. Cassinia fulvida and the Myrtle are first-rate subjects. Aucuba japonica in its many varieties are very fine and very beautiful when in fruit. The White Broom (Cytisus albus) and Choisya ternata are a couple of white-blossomed shrubs which grow luxuriantly and flower profusely near the sea. Several varieties of Elæagnus japonica can be well recommended. They are all of quick growth and very ornamental. The undermentioned varieties are about the best: Albo marginata, pungens maculatus, Frederichi variegata, and aurea media. Ligustrum sinense and L. ovalifolium are also well worth planting. Phillyreas and Tamarix grow freely close to the sea.

Golden Elder *(E. J. Chinnick).*—Sambucus nigra aurea is the correct name of the Golden Elder. It is a very fine, golden-leaved, deciduous, hardy shrub, which grows well in all kinds of soil; but to bring out its brightest colour it is advisable to plant in somewhat poor and rather dry soil. A position fully exposed to the sun should always be selected.

Poison Ivy *(S. P. Hawes).*—The Poison Ivy is botanically known as Rhus Toxicodendron. It has about eight synonyms, of which R. radicans and Ampelopsis japonica are the most common. It is a plant that should be handled with care on account of its poisonous properties. We know of several rather serious cases that have resulted from merely handling or rubbing against the plant.

The mild November.—I read in GARDENING last week the effects of the mild weather on vegetation. I have now in my flower garden in full beauty annual Chrysanthemums, Sweet Peas, Night-scented Stocks, Ten-week Stocks, African Marigolds, Verbenas, Carnations, the large Scarlet Poppy, Roses, and Wallflowers in abundance, spring flowers, and the old purple native Violet of our hedgerows, while in my kitchen garden I have Peas, Lettuce, Potatoes (1 foot high), Raspberries, and Strawberries in bloom.—E. V., *Kingsworthy.*

Mild weather.—We are having very mild weather, and are still ripening Tomatoes out-of-doors, one of which I send you. I have also in full bloom Shirley Poppies, Mignonette, Nicotiana affinis, Wallflowers, Erigerons, Love-in-a-Mist, Marguerites, and some Roses, and I am sitting without a fire. Our climate is delightfully mild.—HELSTON.

GARDEN PESTS.

Scale on Palm-leaf *(Erin).*—The Palm-leaf you sent is attacked by one of the scale insects (one of the many species of Lecanium). They collect near the base of the leaves in the folds, though they may be found on any part of the leaf. The best way to destroy them is to wash them off with a stiff small brush, dipped in soft-soap and water, with a little Tobacco-juice added to it. Another way is to dip a camel's-hair brush in methylated spirits, and give each insect a dab with it.—G. S. S.

Grubs *(H. A.).*—The grubs you sent are the caterpillars of either the common swift-moth (Hepialus Lupulinus), or the ghost-moth (Hepialus Humuli). The caterpillars of these two moths are so much alike that it is very difficult to distinguish one from the other. They are decidedly injurious in gardens as they feed on the roots of many kinds of plants, and it is quite likely that they have attacked your Gladioli. I can suggest no other remedy than turning them out of the ground and killing them.—G. S. S.

Grubs in Potato land *(C. G. B. Ord).*—The grubs you forwarded are those of a fly, but I cannot say of what kind. They probably feed on decaying vegetable or animal substances. I do not think you would be able to kill them with any insecticide short of a good dressing of gas-lime well dug in. If that is not advisable keep the ground broken up so as to give the birds a chance of getting at them.—G. S. S.

Diseased Hollyhocks *(Qu-Ann).*—I am very sorry to have to tell you that your Hollyhocks are attacked with the Hollyhock-disease (Puccinia malvacearum). Cut off and burn all the affected parts, and next season sponge or spray the plants as soon as the slightest sign of the fungus is visible with two tablespoonfuls of permanganate of potash to 1 quart of water. This fungus attacks also wild and cultivated Mallows, which, in some places with Hollyhocks, it has practically exterminated—G. S. S.

Destroying wireworms.—"Knowles" might try this plan to free ground from wireworms. Our gardener bought for a few pence some empty salt herring barrels in which there was the refuse salt and fish-oil. He dug shallow drills and put in the salt and fish-oil, and covered them up. The barrels were broken up and scattered over the ground, which was well dug up in the spring after picking up pieces of barrels, and in the summer we were able to plant Cauliflowers and Broccoli, and had fine crops. Before that the fine roots were eaten off and plants died. The year after we had fine clean Carrots. When trying this in another garden I added some soot with like good results. We lived in a midland county in Ireland, where salt herrings were largely sold in the village near, and by telling the sellers beforehand they kept all the refuse salt and fish-oil in the barrels. —NORTH DEVON.

Caterpillars *(Carnation).*—The caterpillars you sent were those of the angle-shades moth (Phlogophora meticulosa), a very common insect. Unless you could catch the moths in a butterfly net or destroy the chrysalides, which are formed in the ground, I cannot suggest any way of killing this insect but by picking the caterpillars off the plants. This, no doubt, is troublesome, but it is very effective.—G. S. S.

Violets eaten *(H. E. Brooke).*—I am sorry to say that I cannot tell what has attacked your Violets. If you cannot find the enemy during the day you should search the plants at night with a lantern. If they were woodlice or earwigs, you should have caught some in the traps you set.—G. S. S.

OUTDOOR PLANTS.

BOLD FLOWER GROUPS.

IN order to be bold and effective, a flower-bed must be so placed as to stand out clearly from its surroundings, and these must of course be of a kind to assist in producing the effect. The bedding-out system, in whatever form it is adopted, does not present good opportunities of planting bold beds, because of the great extent and variety of colour which it permits; but the promiscuous style, if we may use the term, does, and by this style is meant that of placing beds of flowers singly here and there on a garden lawn against shrubs or among the shrubs themselves—a style which permits great variety and freedom of arrangement without much trouble. Masses of one kind of flower, or even two or three kinds, can hardly ever be wrongly placed on Grass or against shrubs or green verdure of any kind, so long as they are not so near each other as to show an attempt at harmony and contrast, or any purpose of that kind. Thus a good bed, of a size proportionate, of Gladiolus of one or more sorts may be planted here, another bed of single Dahlias there, a third of another plant in another place—whether within sight of each other or not does not matter—and all look well from any point of view; just as in planting ground with select shrubs the same sorts appear at intervals without any apparent design, and look natural.

There is much to be said in favour of the plea that all flowers in the mass should be surrounded by a wealth of green foliage or verdure of some kind. One rule to be observed in the promiscuous style is to avoid planting the groups in formal patterns. When they are in shrubberies they should stand as a part of them, only filling up so much space well and fully, or occupying a piece of ground of an informal shape like the shrubs themselves. Beds of some shape or other would be required on the lawn, but these, too, must be informal, and all on the curvilinear principle. It is very easy to lay out such beds, as no measuring or geometrical design is at all necessary. Any one with a moderately just perception of proportion may soon mark such beds out with a stake, and he can hardly go wrong as to shape, provided all the beds are large in proportion to the space and the curves easy and fairly well balanced. For planting beds of this description some of the most suitable subjects are Hollyhocks, single Dahlias, Gladioli, Everlastings, Sunflowers, Delphiniums, Wallflowers, Phloxes, Tritomas (Kniphofias), Christmas Roses, Carnations, Violas, Pansies, Antirrhinums, Daffodils, Irises of sorts, Columbines; in fact, any plant will do that will grow out-of-doors in summer, but those named are amongst the best for the purpose. The semi-double Sunflowers, and also the single kinds with the broad petals, make magnificent groups planted alone.

The beds should be well drained, and care should be taken in making them to secure good drainage. If the soil be naturally deep and dry no extra drainage will be needed, but in grounds where the beds have to be made specially they are very apt to become reservoirs of water in wet weather if simply scooped out in soil that is perhaps retentive in itself. The beds need not, however, be very deep if any danger of this exists, and draining is difficult, and we daresay, as a rule, no draining will be needed. All that is usually required is to mark out the bed, and dig, manure, and plant it.

Herbaceous bed (*E. M. D.*).—You do not give the size of your bed. But Hollyhocks, perennial Sunflowers, Asters, Pæonies, English, German, Spanish, and Siberian Irises, Delphiniums, Lupins, Lilium candidum, Davuricum Lilies, Tiger Lilies, Phloxes, Narcissus, Scillas, May-flowering Tulips, Tritomas, Japanese Anemones, Rockets, Foxgloves, Campanulas, and Pansies would make it bright throughout the spring, summer, and autumn. Any catalogue from nurserymen will give the probable height of these plants. But if you want me to arrange your bed you must tell me the width and length of it, also its aspect. But I have arranged several borders for other people in GARDENING lately, and perhaps one of them may be what you require.—MRS. JOCELYN.

MAKING MIXED BORDERS IN DIFFERENT SITUATIONS.

SHOULD be glad of suggestions for the making of a mixed border, 50 feet in length, 6 feet in width, wall at back covered with fruit-trees, faces the north, and soil very light; also for another border which comes at right-angles to that mentioned, 30 feet in length, 6 feet in width, faces west, and also fruit-trees on the wall at back?—CONSTANT READER.

*** "Constant Reader" wants to have two borders, one 50 feet long and 6 feet wide, and another 30 feet long and 6 feet wide, the first facing north and the latter facing west, the soil being very light. So is mine. I wish very much it was very heavy. To begin with, dig it well over, and add a large proportion of farmyard manure and some well-rotted leaf-mould. The latter is a light substance, I know; but my experience is that nearly all plants love it, and that it assists them to root quickly and well. As to the manure, with a light soil I put a large quantity just below where the plants will be, and a smaller quantity, well mixed with leaf-mould, nearer the surface. If enough is thus added, it will not only nourish the plants, but keep the border more cool and moist in dry weather than it otherwise would be. Although shrubs and Rose-trees ought to be discouraged to root too deeply, I have never found that deep-rooting injures hardy plants. I should mulch it also well every November.

A group of Flame-flowers (Kniphofia Uvaria) in Scotland. Engraved from a photograph by Miss B. Fleming Hamilton, Craighlest, Kirkcowan, N.B.

Having thus prepared the borders, I should make the border facing north into a spring and early summer border, and the one facing west into a spring and autumn-flowering border, because it so happens that some of the best spring and early summer-flowering herbaceous plants like a situation where they do not get too much sun, and that the later summer and autumn-flowering plants need sun if they are to be satisfactory. Also, I think a far better effect would thus be produced, and one which would be more uncommon. I will first write about

THE EARLY SUMMER AND SPRING BORDER.

It is the one 50 feet by 6 feet, and I will begin by the edge near the walk. Let it be a row of Primroses and immediately behind it a row of Polyanthuses. I suggest that the Primroses be mixed (easily raised from seed), and the Polyanthuses the giant white and yellow. This will occupy about 9 inches, if the Primroses are planted close to the edge and are allowed to grow over it, and if the Polyanthuses are planted about 6 inches behind them. Immediately behind the Polyanthuses plant groups of four bulbs each of Trumpet Narcissus. I have given a list of some of the hardiest and most suitable to "Ethel," in GARDENING, p. 560, last week. If you want a collection of Narcissus, you could plant all I recommended to her, as they would flower at a time which would not interfere with the plants in the border, but if you merely want a bright colour effect I should plant first four bulbs of Emperor, then four bulbs of Empress, and then four bulbs of P. R. Barr, all along the line. They all flower at the same time. This will occupy another 9 inches. Allow that amount, I mean, and plant the bulbs in the centre of it (2 inches apart). Thus a foot and a half is occupied. I should then plant a complete row of German Irises, and in the width of the bed occupy another foot with these Irises. If you buy two roots of each kind you require you will, of course, have a quicker effect from them; but one root of each kind of those I name will soon make a good clump.

Plant it in the middle of the foot of soil I have allowed for it in the width of the bed, and in the length of the bed plant the Irises 18 inches from plant to plant. This will allow you to have a collection of about thirty-six or thirty-seven kinds. I should plant the early-flowering kinds alternately with the later-flowering kinds, and thus keep a succession of bloom through May and June.

Of the early-flowering kinds I plant the Blue Flag Iris Germanica (the type), G. Purple King, G. Fontarabie, and G. Kharput, all shades of blue or violet; and Florentina, which is one of the Irises which generally comes under the heading of "Various" in the catalogues of good bulb firms. It is a grey-white, grows quickly, is very hardy, and flowers profusely at the same time as Germanica. I should plant a Florentine Iris, then one of the Germanica blue Irises, and then another Florentine Iris all the length of the row. I have tried this plan and know it looks well; but do not forget that all down the row one of the later-flowering Irises has to go between every two plants of the earlier-flowering ones. As soon as the earlier-flowering ones have done blooming cut off their dead flowers and part of their stems, and then when the later ones flower it will seem (as it did when the earlier ones flowered) as if there was a complete row of them. The fact that no Iris flowers between each two flowering ones improves the effect, as it makes each kind stand out more distinctly than it would otherwise do, at the distance apart which I recommend. Of the late-flowering Irises I have recently given a list in a reply to another reader of GARDENING. They belong to the section of aphylla, amœna, neglecta, pallida, squalens, and variegata, and those I mentioned are some of the very best and most satisfactory. Amongst them have a few flavescens. It is the only primrose-yellow one, and though it flowers a little earlier than the late-flowering Irises, it is not over when they are at their best, and it is one of the prettiest, most free-flowering, and hardiest kinds I know.

We have now disposed of the front 2½ feet of the bed. Occupy the next 1½ feet with good groups of nine bulbs each of the Narcissus Telamonious plenus and Charles Dickens Hyacinths. Put these clumps alternately all down the length of the 50 feet, allowing a square 1½ feet of soil for each clump. Plant the clump in the middle of it, the Narcissus 2½ inches apart, and the Hyacinths 4 inches. The Hyacinths plant 4 inches deep and the Narcissus 2 inches deep. You will then have 2 feet at the back of the border still unoccupied. Fill it with Herbaceous Pæonies, the European and Chinese section alternately, and put the European Pæonies in front of the June-flowering Irises, and the Chinese Pæonies in front of the early-flowering ones. Into this back 2 feet put as much manure as you like, the more the better for Pæonies—they can hardly have

too much—and plant them about 2 feet from plant to plant. I saw an article in GARDENING, saying that Pæonies could only be grown in good soil and under favourable circumstances. I happen to have proved this to be incorrect. I have known them to flower profusely and flourish luxuriantly on a hot, dry spot, robbed at their roots by the roots of trees and totally uncared for. I have proved they will grow in a poor, light soil in my garden here (well fed with manure), and I have also proved they like a rich, heavy soil best of all. They also like moisture at their roots, but they will dispense with it. They are worthy of the best of treatment.

There is no reason why every inch of remaining soil in this border should not be planted with either Winter Aconites or Snowdrops. They would flower before the foliage of the other bulbs or plants interfered with them, and if the border is mulched every autumn, as it certainly ought to be, with leaf-mould and rotted manure, the underplanting of these little bulbs will do no harm at all. I underplant most of my own borders thus, and have done so for many years.

PLANTING A WEST BORDER.

This border is 30 feet long and 6 feet wide, and it faces west. I should make an edge between it and the path of a complete row of Mrs. Sinkins Pinks. We will allow about 10 inches of this edge to encroach upon the border, and the rest to overhang the path. The next 8 inches of soil behind this 10 inches which is occupied by Pinks I should fill with a thick row of Tulips, planting the bulbs only about 2 inches apart all down the length of the bed. If single scarlet Duc Van Thol Tulips were planted alternately with the double Tulip named Tournesol, the latter would come into flower when the former had ceased to be in bloom, and thus a succession would be kept up. At 2 inches apart the ones that did not flower would never be missed. We thus occupy 1½ feet of the bed. The next 1½ feet I should fill with bold clumps of Davuricum Lilies, six bulbs in a clump of 1½ feet square, and these clumps to be alternately all down the row with clumps of white Foxgloves, which must also occupy 1½ feet square, and leave nine plants in each clump. (Foxgloves are easily grown from seed, but if so grown must first be planted on a seed bed in the open in April, and then transplanted when large enough.) The two best Davuricum Lilies I know are those named erectum and Incomparable. These could be planted in alternate clumps, or only one of the kinds chosen. They both flower at the same time. Some people would think that this length of 1½ feet of border was now full of plants, but I want a lot of either Gesneriana, Darwin, or single Cottage Tulips to be planted all amongst the Lilies and Foxgloves.

We have thus occupied 3 feet of the border. There are 3 feet at the back of it still to be planted. In the 1½ feet at the back plant a complete row of Double Hollyhocks, and in the 1½ feet between the Hollyhocks and the Foxgloves and Lilies plant a row of Delphiniums. In every other 1½ feet, and between them all down the row, a plant of one of the Helianthuses, the Heliopsises, Heleniums, or Coreopsises. There could be a selection of ten of these, and I should select the following: Helianthus Miss Mellish, Helianthus plenus, Helianthus Bouquet d'Or, Helianthus grandiflorus, Coreopsis grandiflora, Coreopsis lanceolata, Helenium Bigelowi, Heliopsis lævis superba, Helianthus semi-plenus, and Helenium Hooperi. Where the Delphiniums are I should plant no bulbs. Their foliage is often massive early in the spring. But in every 1½ feet of soil devoted to the Helianthuses and their allies I should plant thickly a group of Crocuses. It is rather interesting to make a collection of these by planting groups of them thus in a row, each group a different kind. Some of the best-named kinds of Crocuses are these:—Cloth of Silver, Giant Golden Yellow, King of the Blues, David Rizzio, Mme. Mina, Mont Blanc, Queen of the Purples, purpureus grandiflorus, Duke of York, Bleu celeste, and Margot. These are, of course, all spring-flowering Crocuses.

I think if these two borders are thus planted the owner of them will find a succession of bright flowers is kept up, and that he has an interesting collection of several kinds of good herbaceous plants and bulbs. MRS. JOCELYN.

A GARDEN IN FIFESHIRE.

THE illustration shows a view of the garden at Whitehill, Aberdour, Fife. This garden contains a large and varied collection of hardy shrubs, herbaceous, alpine, and bulbous plants. The shrubs comprise many fine varieties of Veronicas, Olearias, and other New Zealand shrubs; also Spiræas, Genistas, Cytisus, and Roses. Of the Roses, a great many are single varieties, and they thrive well in the soil, which is a strong, rich clay. The collection of herbaceous plants is also extensive, and includes almost every hardy species worth growing. Amongst them are a great many varieties of Hellebore, also of the Iris. The garden is informal, and laid out in large beds and borders, shrubs and herbaceous plants being mixed together, and bulbs planted abundantly amongst them. The alpine flowers are mostly grown in the rock garden and amongst the stones with which the walks are edged. Alpines do very well. There is a large collection of Helianthe-

View in the garden of Mr. P. H. Normand, at Whitehill, Aberdour-on-Forth, Fife, N B. From a photograph by Mr. Lindsey Douglas Normand.

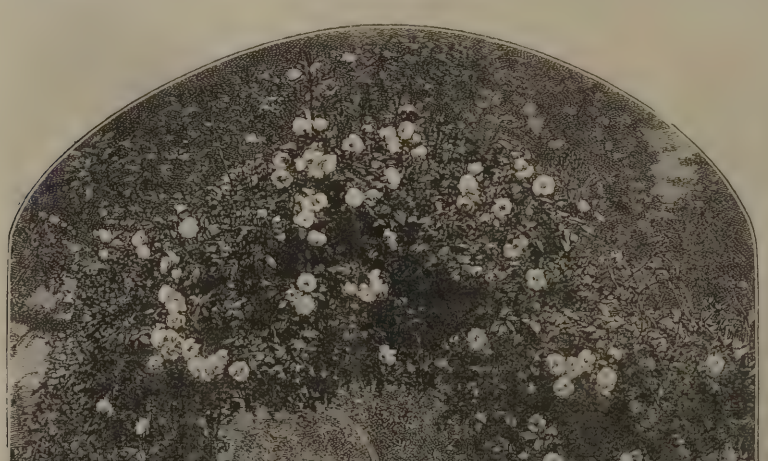
mums (Sun Roses), which grow into spreading bushes. There are Saxifrages in great variety, Aubrietias, Iberises, Lithospermums, etc. The bulbs are Liliums, bulbous Iris, Colchicums, Scillas, Chionodoxas, and a very large collection of Narcissi. The finer and rarer Narcissi are planted in clumps in the spaces between the shrubs and herbaceous plants, and an old pasture field which bounds the garden on the south is planted in profusion with the larger and stronger-growing varieties. These make a grand show in spring, the masses of yellow contrasting well with the green Grass.

Saxifraga Fortunei is a late, almost too late, flower, but as by the time it comes the rank and file have passed away its value is enhanced. Another feature of this plant is, that until a severe frost occurs its foliage is both ample and fresh. The flowers, too, unlike those of most Saxifrages, are large, showy, and beautiful. A keen frost in November brings a sudden change; all is withered up in a day; the only consolation is that the roots remain sound, and we shall see it flourish the following year.

ROSES.

CLIMBING ROSES.

AMONGST the most useful of these are the climbing Tea Roses of the Dijon class. Gloire de Dijon must still be included; to it should be added Mme. Berard, of a deeper shade; Kaiserin Friedrich, a beautiful newer kind, very vigorous; Mme. Eugène Verdier, chamois-yellow; Waltham Climber No. 3, bright crimson; and Belle Lyonnaise or Bouquet d'Or, the former a pale kind, the latter a deep salmon-yellow. To these must be added Celine Forestier, pale yellow; Rêve d'Or, buff; the well-known W. A. Richardson, and Lamarque, pure white (should have a warm spot), from the Noisette class. For poor or cold soils the selection should chiefly be made from the Hybrid Bourbons, the Evergreen Roses, and the hardiest of the Teas and Noisettes, as Gloire de Dijon and Rêve d'Or. In such positions manure should be used freely, that from the farmyard being preferable; draining should also receive attention, being most essential. Moderate pruning the first season is advisable to form a good base. The ground for these Roses should be deeply dug or trenched, adding fresh soil as well as manure if the ground is not up to the mark. A mulching after the planting is done is advisable; for this I would prefer Cocoa-nut-fibre to manure, as the birds would not be so disposed to interfere. R.



Climbing Roses on an arch.

Penzance Briers.—I have planted four strong plants in a small circular bed in the hope that they will grow together and form a compact mass. Will it be sufficient if I give each plant an ordinary iron stake and tie them loosely, or should I run wire round the stakes? A good gardener tells me that soil and position are excellent. I shall be much obliged if you will give me a hint.—H. P. H.

*** It would be better to fix a few iron stakes around the plants, and fasten strong wire around the former. These Briers grow so strongly that ordinary ties are hardly sufficient. We have used stout Hop-poles, and the wires from peat-Moss-litter bales and compressed hay.

Roses under glass (*H. Birch*).—We are always glad of such full information as you give, and think it more than probable you overdid the syringing, and did not afford enough water to the soil under the stage. All three of the Roses you mention are excellent for the purpose, and you could scarcely have improved upon the loam from a pasture field as compost. But such loam too often has a large number of wireworms; if so, they would soon increase and kill the roots of your plants. There is no reason why a climbing Rose should not do well when planted beneath the stage. Your second compost is also suitable; but it will not do to try Roses in pots upon a shelf close to the glass. We would have creeping Ferns and Lycopodiums beneath the stage. Have you any idea what is upon the other side of your neighbour's wall, and against which we understand your house leans?

Protecting Roses in spring.—I have a 4-feet wall in my garden, facing south, covered with climbing Roses, but which are so injured by the winds in spring that all early bloom is lost. Can you suggest a simple means of protection?—SHAMROCK.

*** If you could plant a few of the Hybrid Sweet Briers a little distance from the wall they would form a good break to severe winds and not be harmed themselves, but they must be at least 10 feet from the wall. It is difficult to shelter without overshading.

Rose Cloth of Gold.—Will you kindly let me know in your excellent paper, GARDENING, the best position for Rose Cloth of Gold to get it to flower, as well as the treatment? Mine is on a wall due south in full sun, looks healthy, and throws up long shoots but no flowers. I am told an east wall, where the shoots get round into the sun, is best. Is this so? The soil is heavy.—R. E.

*** Cloth of Gold is a rather tender Rose, needing a warm and sheltered position without the extreme changes we so often experience when facing due south. The greatest enemy of this old Rose is the repeated thawing and freezing during a spell of cold and yet bright weather. We have seen it good both in the midland and in southern counties, and last summer saw a specimen of great beauty in full bloom, and quite thirty years old. This was facing east, and sheltered from north and north-east winds by a wood. It is not, however, a satisfactory or free-flowering Rose.

Tea Roses in beds.—I have just built a greenhouse 14 feet by 9 feet, and I propose growing Tea Roses in beds, and about six dark Hybrid Perpetuals. Will you kindly tell me how many plants the house will hold?—BENJ. SCHOFIELD.

*** Please let us know how much bench or border space you will have; also, if a lean-to or span-roof, and if the former, give height of back wall, when we will reply fully and suggest varieties.

Rose L'Ideal.—Please tell me if Rose L'Idéal is a strong-growing variety or not, and whether it resembles W. A. Richardson in growth as well as form of bloom, and if sweet-scented?—SHAMROCK.

*** The growths of these two are very similar, but we do not find L'Idéal quite so hardy as William Allen Richardson. There is no sweeter-scented Rose; its colours are unique, and although quickly expanding the petals are retained for a long time.

Roses in frames.—I have six garden lights (6 by 4), which I thought of having made into two frames for growing Roses in. Am I likely to succeed with the Roses pegged down, or should they be in pots? Any information as to height of frame, etc., will be thankfully received by—TIM BOBBIN.

*** You would do better to make a small span-roof or lean-to house with the lights than frames, which are not suited for Roses. If a lean-to, you can have climbers on the wall; but we would advise all others to be grown in pots. There would not be much expense in building the front wall and making the ends and door, while you could then get among the plants at any time, besides having more top room.

Budding Briers.—What is the earliest date next year that Briers can be budded? Briers and plants are both in heated house, and when should they be placed in the house? The plants have been potted from the open this month.—J. BARROW.

*** As your plants have only been potted this month it would not be wise to introduce them to strong heat just yet. They may, however, be placed at once in a cold-frame and brought into the house about end of December. Gentle heat should be applied at first, increasing the temperature as soon as white roots are seen. Roses do not appreciate strong heat until well established in their pots. The plants should be in flower about April, and the Briers, if grown on in the same house, would then be in a condition for budding. Do not cut the buds from the plants until after the shoots have flowered.

Plants for Rose-bed.—Having just made up a large Rose-bed, 18 feet by 12 feet, on my lawn, I should be glad to know how many bush Roses it will take? Do you advise my planting the more tender Roses in the centre for protection during frosty weather? Kindly say what kinds you recommend for free flowering?—SIRIUS.

*** We would advise you to plant the varieties mentioned for massing in our list of selections, which appeared in the issue of October 30th. These may be planted 18 inches apart each way. If you decide to have those usually pegged down, 3½ feet between each plant will be needed.

Climbing Roses (*E. V. S.*).—If your climbing Roses were overcrowded with growths you were right in pruning—or, rather, thinning out—some of these growths, so that plenty of light and air were admitted. Established climbers, where they have been somewhat neglected, often become too crowded with growths, consequently the flower-buds become a prey to the usual enemies of the Rose, and, consequently, they never properly develop. If the plants are overhauled each spring, taking care to retain intact as much as possible of the previous season's growth, little anxiety need be felt but that climbing Roses will blossom well each year. The shoots, when they are being nailed to the wall, should be bent somewhat horizontally. After flowering, a few of the older shoots may be removed, so as to encourage new growths from the base of the plant. These new growths will provide a part of the next season's supply of flowers.

Roses for exposed wall (*W. G. Duck*).—You would do better to plant Gloire de Dijon, Emilie Dupuy, or Reine Marie Henriette upon the wall marked A, and facing north-east. Crimson Rambler is not sufficiently hardy for your position. Both Pyracantha Lælandi and Cotoneaster microphylla would do well on the house walls marked E and D, planting Ivy upon the wall marked C, and apparently facing north. On the front wall, F, we would plant such Roses as Marie Van Houtte, Mme. Lambard, and Anna Ollivier. Your flower-beds face much better, and here such Roses as G. Nabonnand, Mme. Charles, La France, and Princesse de Sagan might be massed.

Grafting Tea Roses on seedling Briers.—I wish to graft some Tea Roses on seedling Briers next spring, mainly for use in a heated greenhouse in pots, and should be much obliged for information as to the present and future treatment of the stocks, and the trees from which the scions are to be taken; and also as to when and how the actual grafting is to be done.—GLOIRE.

*** If you will kindly procure our issue for February 13th you will find the subject fully treated upon, and illustrated as regards the various methods.

Planting a Brier-hedge.—I am thinking of planting a Brier-hedge, as suggested in

your last issue. My soil is clay. Would you please tell me if I should require to prepare it as one would ordinarily do for Roses, if the Polyantha Briers ought to be much pruned the first year and afterwards, and how high the stakes ought to be that you recommend to have fixed when they are first planted?—H. Frampton Stallard.

*** The Briers we mentioned as suited for hedges are not Polyanthas, but a new form of Hybrids raised by the Right Hon. Lord Penzance. You must limit the height of posts to a foot or so below that you wish the hedge to attain.

Manuring Roses in winter.—I read in last week's Gardening that rotten stable-manure should not be used for covering Roses in winter. I conclude this refers to England?—O. F.

*** If you will read over notes upon the winter protection of Roses once more you will see we mention the case of a Scottish grower who does not protect. The reason we object to rotten manure is fully explained in the second paragraph of the same article (page 542), and you will gather that the colder the position the less would we be inclined to use any agent so retentive of moisture.

Rose Perle des Jardins (*Be*).—Of course you have procured the climbing variety of this yellow Tea Rose. In that case simply wait for a stronger shoot or two to be made next summer, and which will either flower late or in the following spring. Train these, and future growths, to wires fastened 6 inches from the glass; 9 inches would be better, but unless you have good head room in your lean-to this may be difficult. We do not like the idea of planting a Rose outside and growing the tops inside. There is invariably a great contrast between what the wood growth is subjected to and the roots. The latter cannot possibly do justice to the demands made upon them by the top growth under cover, one being under summer treatment, while the other is still in very cold soil.

Growing the Austrian Brier Roses (*A Constant Reader*).—There are four varieties of Austrian Briers in general cultivation—namely, the Single Yellow, the Single Copper, also called Punicea, the Persian Yellow, double, a very rich yellow, and Harrisoni, double, rich primrose-yellow. The habit of each one is very similar, therefore cultural remarks given would apply to all four. Although they will grow and flower well on walls, the bush form is most natural. They should not be pruned at all; merely thin out when crowded, as the plants flower from the terminal shoots of the old wood. On standards they form pretty objects if the shoots are bent over in umbrella form when flowers are produced from every eye. The aspect they prefer is south or west, and they like liberal treatment with manure and a good proportion of lime in the soil.

Protecting Roses (*Clifton*).—If secure from disturbance at the root, no harm will result from east winds when the plants are dormant. Do not protect unless severe frost sets in, then straw or Bracken Fern among branches for standards, and moulding up with earth for bushes, is all that is needful. If long, straggling growths, shorten at once to lessen the effect of the wind in disturbing the roots.

Roses for easterly position.—What Rose-trees would you recommend should be planted in a position facing east? Sandy soil, elevated position.

*** Hardy Hybrid Perpetuals, Hybrid Chinese rugosas, and Mosses, such as Jules Margottin, John Hopper, Magna Charta, Mrs. John Laing, Charles Lawson, Common Moss, etc.

Rosa calocarpa (*W. P.*).—It is one of the newer rugosa or Japanese Roses, and you should be able to procure a good plant from any Rose-grower for a few pence.

Cleansing Marechal Niel Rose-leaves (*E. H.*).—Your plant requires a thorough washing after the oldest and worst affected leaves are removed. Any of the insecticides advertised in our pages will answer for this; or you can use a solution of soft-soap at the rate of 2 oz. to a gallon of water, at a temperature of 65 degs. to 70 degs. (Fahr.). The green-fly is the cause of your dirty foliage, the sticky "honey-dew" from these insects having retained any impurity that came into contact with the growth.

Roses.—1, Is Rose macrantha a good Rose for a wall? 2, Would the "Crimson Rambler" be likely to do well against a common hedge? The hedge is composed of Brambles, Thorns, etc., and is an eyesore at present.—Welston.

*** Rosa macrantha is seen at its best over an arch or an arbour. It may be grown upon a warm wall. Both this and the Crimson Rambler would be grand to ramble among your old Thorn hedge. Add L'Ideale, W. A. Richardson, and Polyantha simplex, with a few Honeysuckles and Clematis, and you will have a grand feature in place of the present eyesore.

Ayrshire Roses.—Which is the best Ayrshire Rose and the best evergreen climbing Rose for a south-east aspect? The east wind is very keen in the spring, and although the Aimée Vibert I now have has grown very freely and produced many buds, they hardly ever mature, or, if they do, last but a very few days. —Easterly Point of England.

*** The best Ayrshire Rose is undoubtedly the one named Ruga, but Virginian Rambler and Dundee Rambler are also very beautiful and exceedingly vigorous. The best Evergreen Rose (R. sempervirens) is Félicité-Perpetue, and certainly one of the best rambling Roses in cultivation. Flora and Myrianthus renoncule are also good. Another Rose that retains its foliage well is the Hybrid Tea Reine Olga de Wurtemburg. This is a semi-double crimson variety, and quite suitable for the aspect named. A Rose with larger blossoms suitable for this bleak aspect would be Charles Lawson, a very fine, deep rose-coloured variety.

Rose Mme. Plantier (*Hawkweed*).—Mme. Plantier is a Hybrid Noisette, was sent out by Plantier in 1836, and is our oldest good White Rose. It is a fairly vigorous grower, flowers in clusters, is of medium size, and fit for pots, pillars, or climbing. We consider it our best pure White Rose for massing, and it is an exceptionally free bloomer.

Growing Roses in tubs (*W. P.*).—We would omit Cramoisie Superieur and Perle des Jardins, replacing them with G. Nabonnand and Homère. Grow them the same as if in pots. Why should tubs need different treatment? As your plants will be outside, protect the tubs from fierce sun or sharp frost by wrapping a piece of sacking around. We have seen a pretty use made of the rustic cork, nailed on to the tub, and this would also be sufficient protection.

Marechal Niel Rose with split stem (*Learner*).—The plant with the split stem is evidently affected with canker, for which there is no known remedy. It may linger on for some time, but we advise you to cut it out and plant another. Try a William Allen Richardson or Climbing Niphetos next time.

Rose Countess G. de Berne (*A. P., Wimbledon*).—We do not know of any Rose under the name you give, nor can we find it in a list of more than 2,000 varieties; but all strong growers should be sparingly pruned, and we trust your long growths may be satisfactory next season. Do not cut out any but dead wood.

Fluffy substance on Roses (*Perplexed*).—Your Roses are attacked by mildew, either brought on by extremes of heat, water supply, or a draught. Remedy these, and wash freely with some insecticide in which a little extra sulphur has been stirred.

A hedge to screen garden from north and east (*Tyro*).—Yes; you could not possibly select a better class than these running or Ayrshire Roses.

THE NEW ZEALAND CLEMATIS.

This is a delightful climber, as those who are fortunate to have it climbing over the rafters of the greenhouse or conservatory can testify. Clematis indivisa is very distinct, and in its native country, New Zealand, garnishes the trees on the outskirts of woods with its profusion of flowers and free, graceful growth. Although usually grown in a greenhouse, it will live outdoors in many southern gardens, especially in Devonshire. In one garden in the southern division of the county it lives and flowers with freedom, and makes a distinct and pleasing feature. In midland and northern counties, of course, the greenhouse is its proper place, and it is best planted out in a well-prepared border of good turfy loam and peat mixed with a moderate quantity of sharp sand to lighten it. It is of value for one great reason—its season of blooming, which is early spring, when amongst climbers the principal things in flower are the yellow-flowered Hibbertia and Kennedya Marryattiæ. The vigorous growth of the New Zealand Clematis scarcely adapts it for the small greenhouse, unless confined to a small root space, but there are many fairly large structures absolutely bare of good climbing plants that would suit this free and lovely flower. Aphides are troublesome, but may be kept down by the usual precautions. Mildew will often make its appearance in the winter, but a free circulation of air and dusting of sulphur will eradicate the pest. There is a well-

The larger New Zealand Clematis (C. indivisa lobata).

known variety called indivisa lobata, which has lobed leaves and bolder flowers than those of the type, but otherwise they are much the same.

THE SCARBOROUGH LILY.

(In reply to "J. B.")

It appears to be the desire of many amateurs who have limited glass space and equally limited experience to obtain plants which are easy to grow and at the same time showy and consistent in blooming. Fortunately, there are many charming flowers which are easy to grow and readily lend themselves to the requirements of the amateur. Amongst these is Vallota purpurea, whose bright scarlet Lily-like flowers are so well known that explanation is unnecessary. Either for the adornment of a greenhouse or grown as a window plant the Scarborough Lily has few superiors, and frequently have I seen plants supporting three and four spikes of flower in windows of the humblest cottages. By careful management the stock may be increased, and from a few bulbs to commence with others large enough to flower may be raised in a few seasons. At no time does the plant require heat more than the ordinary greenhouse affords, yet in order to ensure a regular and constant supply of flower a few points in cultivation should be noticed. If a few bulbs of flowering size are obtained in the summer or autumn they should be placed singly in 6-inch pots, leaving half the bulb protruding above the soil. A good compost is formed of three parts fibrous loam and one part leaf-mould and coarse sand. Place the plants on a shelf in the greenhouse, giving little water till growth commences. When the pots are well filled with roots, and flower-spikes show in the spring and early summer, liquid-manure may be given with advantage, and it is after the blooming period is over that the most care is necessary to ensure a supply for the following season. When the plants have finished flowering keep them in a light sunny position and supply water as required, with an occasional feeding of liquid-manure in order to obtain large sound bulbs. Gradually discontinue the watering as the foliage decays, eventually drying off, and stand the leafless bulbs to rest for a few weeks in a cold-frame.

When shaking out the bulbs for repotting, numerous small ones will often be found adhering to the parents, and these should be removed and placed thickly together in a box, receiving exactly the same treatment as the older plants, when they will form bulbs large enough for blooming the next or the following season. By this means the stock may be readily increased. Frequently Vallotas are grown without any resting period; but unless the bulbs are thoroughly ripened and allowed a period of rest during the summer months it is rarely that above one spike is thrown up from a bulb. By following the above lines of treatment it is possible to have bulbs producing three and four spikes of bright scarlet flowers, which are a charming adornment for greenhouse or drawing-room. By potting the plants in the spring instead of the autumn, and keeping them growing through the summer, a supply of bloom may be had in the autumn, and if this method is followed the plants should be kept growing for some weeks after flowering, and allowed to rest during the opening months of the year. The Scarborough Lily is of hardy constitution, and suffers little from insects or disease, and these good qualities, coupled with consistent flowering habits, are sufficient to recommend it to amateurs requiring plants which do not call forth the skill of an experienced gardener to grow. H. H.

Plants for bed of poor soil (*E. M. D.*).—It is evident that the soil in your rock garden is very poor. The aspect is very good. It is very easy to make the soil better. Take it out of each crevice, and in returning it put one part of leaf-mould, one part soil, one part well-rotted manure, and add to this a little sharp sand. Then, as you are a novice, I recommend you to plant such plants as these in it, as I gather that a bright effect and hardy plants are wanted, and not rock plants, which require special treatment. The plants I mention are all very hardy, will quickly fill your space, and give a bright effect. Alyssum saxatile compactum, Anemone sylvestris, Arabis albida, Aubrietia græca, A. purpurea violacea, A. Campbelli, A. rosea, Campanula turbinata, C. nobilis, C. carpatica, Corydalis nobilis, Gentiana septemfida, Geranium ibericum, G. pratense fl.-pl., G. sanguineum, Geum chiloense plenum, G. montanum, Hemerocallis Dumortieri, Hepatica major and other Hepaticas, Heuchera sanguinea, Hypericum calycinum, Iberis sempervirens, Lychnis Flos-cuculi fl.-pl, L. Viscaria, L. V. splendens plena, Mertensia sibirica, Nepeta Mussini, Phlox amœna, P. divaricata, P. subulata alba, Potentillas, Primula denticulata, P. Sieboldi, Saponaria ocymoides splendidissima, Saxifraga umbrosa (London Pride), S. cordifolia (Megasea), S. cæspitosa, Ranunculus aconitifolius, R. amplexicaulis, Sedum album, S. dasyphyllum, S. Kamtschaticum, S. spectabile, S. spurium, S. Lydium, Silene maritimum fl.-pl, Solidago Virgaurea cambrica, Tiarella cordifolia (Foam flower), Trollius napellifolius, T. Fortunei fl.-pl., T. giganteus, Veronica repens, V. Teucrium nana, and V. prostrata. I have just such a rough piece of rock garden as you describe, and I have found that all these plants thrive well in it.—Mrs. Jocelyn.

Planting flower-beds (*L. L.*).—Very beautiful effects may be obtained by planting Narcissus poeticus among Myosotis dissitiflora and yellow Trumpet Narcissi among Anemone apennina. Two charming spring bulbs are Chionodoxa Luciliæ and C. sardensis; while of Tulips the vivid-coloured vermilion Brilliant and the yellow Pottebakker, which both bloom at the same time, are very showy. Clumps of the brighter-coloured Lilies might be planted, such as L. umbellatum, L. davuricum, L. elegans, L. chalcedonicum, and L. tigrinum; and Irises of the Spanish and German sections, massed in self colours, are very effective. The Crown Imperials are handsome in the spring, while in autumn the Montbretias give bright colour. Carnations should do well in the beds, and when well grown there are few more charming subjects. The brilliant Dianthus Napoleon III. is of striking colour, and lasts in bloom a long while. Other good perennials, from which a selection might be made, are: Achillea Ptarmica flore-pleno the Pearl, which is a lengthy bloomer; Adonis vernalis, a pretty, yellow spring flower; hybrid Alstrœmerias, beautiful flowers, ranging in colour from cream to crimson; Anemone blanda, bright blue, larger than A. apennina; hybrid Aquilegias, which, however, are better replenished by yearly sowings; the great Sea Pink (Armeria cephalotes); Aster Amellus bessarabicus, for autumn bloom; Camassia esculenta, Campanula carpatica, C. glomerata, C. persicifolia alba, and its double variety; Coreopsis grandiflora, a wonderful bloomer, bright yellow; Erigeron speciosus, deep mauve; Gaillardia grandiflora, Geum coccineum, Hemerocallis flava, Heuchera sanguinea, the scarlet Lobelia, which may be associated with Salvia patens, the contrast of colour being very distinct and pleasing (the latter subject will, however, have to be lifted and its roots stored during the winter); Lychnis chalcedonica and L. Haageana, Œnothera fruticosa, Oxalis floribunda rosea, the Iceland Poppies (P. nudicaule), herbaceous Phlox, Platycodon Mariesi, Ranunculus aconitifolius fl.-pl., Rudbeckia Newmani; Scabiosa caucasica, a lovely light blue flower; the Globe-flower (Trollius), and Violas or Tufted Pansies. There are many other fine perennials, such as Anemone japonica, Delphiniums, Dicentra spectabilis, Dictamnus Fraxinella, Gypsophila paniculata, Helianthus multiflorus, Inula glandulosa, Lupines, Monarda didyma, Papaver bracteatum, Polemonium cœruleum, and Solidago ambigua, that are very ornamental in the garden, but which would, presumably, prove too large for the beds in question, the sizes of which are not given. The plan forwarded of the nine beds is, perhaps, a trifle too formal to allow of herbaceous plants being shown off to the best advantage. If bright colour is indispensable, and the objection to "bedding plants" not insuperable, two beds might be filled with Tuberous Begonias.

Carnations. — Amateur gardeners experience great loss and disappointment sometimes in the culture of the Carnation through being unable to select or obtain varieties that do not split their calyx. The varieties mentioned, which must be layers grown in the open garden of the present year, and planted in March or April, I have found a useful selection: Germania, yellow; Mrs. Muir, white; Duchess of Fife, coral-pink; Ketton Rose, pale rose; Uriah Pike, dark crimson; Terra Cotta, terra-cotta, pink edge; Mrs. Hamlet Riley, flesh; Duchess of Portland, white, edged pink; and George Cruikshank, buff, flaked red.—M. S.

ORCHIDS.

DENDROBIUM NOBILE.

Plants of this old but useful species are now sufficiently plentiful, moderate in cost, and easy of cultivation, to admit of their being grown in quantities, either for market, cut flowers, or decorations generally. Where several plants of D. nobile are grown it is sometimes found desirable to bring them into bloom in succession. Some plants are now showing their flower-buds, and may be placed in a warm stove-like temperature; but no water should be afforded to the roots until the flowers are distinctly discernible. It frequently happens at this period, when the bloom-buds are in the first stages of development, that young growths are produced from the nodes instead of flowers. The principal cause of this is through giving the plants too much water at the root at this juncture. By keeping some plants cool—that is, a few degrees warmer than the ordinary greenhouse—they will succeed the earliest in bloom. Such species as D. Wardianum and D. crassinode are now showing flower-buds along the pseudo-bulbs that were made during the past summer. For several weeks past plants of both species have shown flower-buds at the extreme end nodes of the bulb, and now the back nodes are gradually showing flower. Had the plants been placed in heat when the first buds appeared only a few flowers at the end of the bulb would have opened, whereas by keeping the plants cool and dry a larger quantity of bloom is obtained. As soon as the flower-buds are well advanced place the plants in an intermediate temperature for a few weeks, after which they will require the warmth of the plant-stove or East Indian-house. Whether the plants are suspended to the roof or stood down upon the stage, they should occupy the lightest position available, so that the colours of the blooms may come out clear and rich. In some cases it will be observed that young growths are already showing at the base of the current season's flowering bulb. Some persons are under the impression that immediately these growths appear the plants require water; such treatment is entirely erroneous. The plants, until the flowers are fully open, only require water at long intervals, if kept moist at the root. These young growths that are starting will grow away quickly, and the flower-buds will drop off prematurely. The beautiful Dendrobium Phalænopsis is certainly one of the best of late autumn-flowering plants we have, and where convenience exists it should be grown in large quantities, because showing, as it does, a great range of colour in the different plants, a batch of them is extremely interesting. Plants of this popular species are now going out of bloom, and should be placed in a cool, dry corner of the stove, and during their long period of rest only sufficient water is needed at the root to prevent undue shrivelling of the pseudo-bulbs. W., *B.*

LIGHT FOR ORCHIDS.

Hints for amateurs.

Although this subject has been repeatedly treated on by writers on Orchids, yet by far the greater number of amateur and small cultivators fail to grasp its importance. The value of a good clear light is of the greatest importance, for not only are plants grown in it more free flowering than others kept in a more or less dense shade, but they are hardier, so to speak—that is, they are not so susceptible to the effects of slight errors of treatment in other ways. For instance, it is quite easy to a grow a houseful of Phalænopsids under a dense shade all through the summer months, and the fresh green appearance of some of the plants would doubtless deceive any but a practical eye, but the growth made under such conditions is not

the kind to withstand the least check, and let the temperature drop but a few degrees below the normal, in all probability many of the leaves so ill built up would perish. The same with Cattleyas. These beautiful Orchids cannot be satisfactorily grown in any house that does not admit plenty of light on every side. Even such shade-loving plants as Odontoglossums and Masdevallias can be easily ruined by keeping them in a dark house during the winter months. Cypripedium insigne will produce twice as many blossoms if kept in a good light as it will heavily shaded, and the liking that such kinds as Dendrobiums, Catasetums, and all the distichous race of Aërides, Saccolabiums, and Vandas have for light is so well known that one would think everyone who possesses a few Orchids would strive to give them all the light possible from January to December. That it is not so is evident to anyone in the habit of visiting these small collections, for, assiduous as the cultivators referred to are in potting, watering, and cleaning their plants, they often do this under a glass-roof rendered almost opaque with dirt for months together. Not only this, but when shading has to be resorted to it is applied at certain stated times every day, and no matter what the weather may be, it is left on until the time comes round for its removal. This is decidedly wrong, and as the time of year is approaching when light is of the most vital importance, I would urge on beginners to give the matter a little thought. Imagine an Orchid growing naturally, it may be, on the top of some tree where the only shade it gets is that afforded by a few leaves while the latter are on, and none at all when they have fallen. This plant is brought home, confined to a glasshouse, in many cases in a partially shaded position. The least we can do is to keep the glass clean and never to allow shading unless it is absolutely necessary to avoid scorching the foliage. In the neighbourhood of large towns the trouble is of course worst, but in country places where the houses are in proximity to decidious trees, the leaves in autumn, and in many cases the flowers in spring, make a lot of work in keeping the glass always clean. In the former localities the glass should be well mopped down at least once a week on the outside, unless it is during the brightest and sunniest weather, and the inside should be so frequently sponged that nothing like a film can ever be seen upon it. Then, other conditions being favourable, the plants will be satisfactory, and it only remains to be careful not to overshade in spring and summer. While not recommending anyone to be always running to the shading when a cloud comes up, the blinds ought never to be down during the best part of a dull day following a bright morning, nor should the neglect of early ventilation render it necessary to put the shading on before the plants have become dry overhead.

To return to the present season. Anything that can be done in the way of shifting plants to bring them nearer the glass, or any alterations that can be made to give each one room to stand clear of its neighbour, will be time well spent. Especially is this the case with plants that are for some reason backward in growth, such as imported plants received too late in the season to mature their pseudo-bulbs, or plants that were retarded in their flowering season for exhibition and are in a like state. Light, even more than heat, will be necessary to harden the tissues and give the foliage that robust and finished appearance that cultivators know is the forerunner of a bounteous crop of flowers.

An Orchid Grower.

Evil of concrete floor for Orchids (*E. H. S E V. W.*).—As it is impossible for you to remove the concrete floor of your conservatory, it would be advisable to make a bed of garden soil under the staging, or, perhaps, it would be better still if leaves (Oak) were used instead of the soil. A great amount of moisture would evaporate through the house from the leaves if they were kept damp, and leaves could easily be removed and replaced annually. Cœlogyne cristata would probably do well in your house. Grow it at the warmest end whilst making its growth, and in the cooler and drier part while in bloom and during its period of rest.

Treatment of Odontoglossum Rossi majus (*Subscriber*).—Your plant of Odontoglossum Rossi majus should not be disturbed at the root now. The proper time for repotting or rebasketing this species is immediately after the flower-spikes are cut. It is then that the plant commences to root from the base of the new flowering growths, and if planted in fresh sweet compost quickly becomes re-established. Unless the compost has become sour and decomposed, the plant should not be disturbed by repotting. It will be advisable to allow it to remain as it is until it blooms again. The best compost for it is peat and Sphagnum Moss in about equal parts, and a moderate quantity of broken crocks, mixing the whole well together before use.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rule here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2325—**Mice destroying bulbs**—My bulbs in cold-frames and under Cocoa-nut-fibre, especially Tulips, are being devoured by mice, also in the flower-beds out in the open. What can I do to prevent them? I have tried traps set with toasted cheese, and put red lead round and over the pots. Traps do not catch them, and the lead does not stop them.—R

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2326—**Artillery plant** (*F. W.*).—The botanical name of this is Pilea muscosa.

2327—**Pampas Grass** (*Mary*).—Cut the Pampas Grass down, and apply slacked lime to the ground infested with snails.

2328—**Cannas** (*Qu-Ann*).—These must be kept in a cool cellar, absolutely frost-proof, and not damp. They must rest during the winter.

2329—**Treatment of Palms** (*Snowball*).—Peruvian guano dissolved at the rate of 1 oz. to a gallon of water, and applied once a week is good for all Palms.

2330—**Ink for zinc labels** (*Subscriber*).—We have used ordinary writing-ink and a stylograph pen for this purpose successfully, giving a coat of varnish when dry.

2331—**Palms for fireless room** (*O. F.*).—You will find Corypha australis very hardy, also Latania borbonica; but these do not grow so tall as Euterpe edulis, a very graceful Palm of not quite so hardy a character.

2332—**Cobæa scandens** (*Tyro*).—Cut it down completely. But if you raise some more seedlings early next year, and plant these out, they should flower and not be so bare at the bottom. Do not give too rich a compost.

2333—**Calceolarias** (*G. D.*).—This depends entirely upon the variety. If half hardy, you can keep them in the frame safely. But there are such a large number of Echeverias, and of widely different needs, that we cannot answer you definitely.

2334—**Tulips and Narcissi for Easter** (*Mr. Bowen*).—You cannot do anything except leave the bulbs to take the usual course. But as Easter is fairly late next year we should think that the flowers will be at their best about that time.

2335—**Pruning Asparagus plumosus** (*E. C.*).—When the African Asparagus grow so strongly as this it is certain that they are being too well treated. Cut away such growths (unless you can afford plenty of room for their development), and do not treat quite so liberally.

2336—**Forcing Seakale** (*G. D.*).—Boxes will do as well as Seakale-pots, and if covered with leaves you will succeed with them. We are ignorant of the "smother fly," but suppose you mean the common green-fly, and these must be washed off the Arums with weak soapy-water.

2337—**Ten-week Stocks** (*Constant Reader*).—Keep your little plants in the boxes and in a frame close to the glass, but not to touch. They will be safest there till March, when you may transplant into a frame thinly, and then replant outdoors about the middle of May, preserving the roots and small balls of soil.

2338—**Pruning Vine** (*Vine*).—If your Vine has shed its leaves you may cut the side or past season's wood back to a stout bud as near to the main rods as you can at once. If you have long rods instead of old rods, hard spurred, then cut out old rods to replace with long new ones. Still these should be shortened back to one-half.

2339—**Treatment of Maiden-hair Ferns** (*A Young Beginner*).—Will you please let us know a little of your accommodation—whether you have some bottom-heat, more than one house, or only a small one? It would be useless for us to give you information without knowing your facilities for carrying them out.

2340—**Begonia** (*Subscriber*).—Your plant of Begonia Weltoniensis is probably losing its leaves because in a temperature that is too low or cold. If in warmth, it should keep green and fresh all the winter. If you have no warmth, then keep the plant from frost and somewhat dry, and no doubt it will break up again in good form in the spring.

2341—**Keeping back Poinsettias** (*Mrs. P. H.*).—Yes; they are often used for Christmas decorations, and it is only necessary to be less liberal in the early stages of growth, and not afford so much heat. But if you mean plants now carrying fully-developed bracts, the matter is not so easy, as you can scarcely keep them well with less heat than they have recently enjoyed.

2342—**Panicums** (*F. H. M.*).—As there are upward of 250 species of Panicums, and these have many varieties, we are obliged to guess that you allude to the pretty little greenhouse perennials. Cuttings should be taken and inserted thickly in pots of rich and porous soil. They need a temperature of 60 degs. to 70 degs., a moist atmosphere, and are very unsuited to room culture.

2343—**Vegetable Marrows** (*J. M.*).—Doubtless the reason why your young Marrows decayed at the points at the first was from lack of fertilisation. Another year, take pollen on a brush or rabbit's tail from the male or fruitless flowers, and place it on the centres of the fruit or female blooms. That is fertilisation. The insects will do it for all the later fruits after the weather is warmer.

2344—**Begonias and Calceolarias in pots** (*G. D.*).—Yes; a slight sprinkle of soot or lime will do very well. Do not use both together, and be careful to only give slight dustings at intervals. Quite immaterial, so long as they are dry; but as you will be repotting next spring it is wiser to remove now. They also do better when started in small pots, and shifted on as they progress.

2345—**Side-shoots on Carnations** (*Be*).—It is a law of floriculture that if you want good blooms of extra quality you must grow well and limit the number. Therefore, the weakest of your side-shoots must be removed But we would not do so, simply because by leaving them you get a larger number of blossoms, and generally better finished than those from the main growth, although not of so large a size.

2346—**Failure of greenhouse plants** (*Alpha*).—Smilax often resents root disturbance, and either this or drought are probably the cause of your failure. Both from the Bouvardia and Grevillea-leaf we think you have kept them too dry. If your oil-stove is allowed to burn too high, the unconsumed oil that goes off in the offensive smoke would also account for the mischief. Your temperature is about right.

2347—**Abutilons and Aralia Sieboldi** (*Leo*).—You should keep the Abutilons in pots, and bring them into the greenhouse at the time Azaleas, Arums, etc., are housed; then feed well with liquid-manure, and give them a temperature of 55 degs. to 65 degs. Do not repot the Aralia, and wait until the spring, when propagate in the manner we illustrated in our issue for February 6, where the subject is fully dealt with.

2348—**Gloriosa superba** (*R. Lee*).—This is a native of tropical Asia and Africa. Pot in February, give good drainage, and a compost of leaf-mould and loam in equal proportions. They need a warm temperature when starting—70 degs. is none too high—must have plenty of moisture during summer, and be gradually dried off as growth ripens. When died down the tubers must be kept dry and warm. You will scarcely succeed in an ordinary greenhouse.

2349—**Melon book** (*Communis*).—We have examined book lists, and fail to find any one, cheap or dear, specially devoted to Melon culture. So far as the old books are concerned where they treated of Melons, the method of treatment differs materially from what now prevails generally. Could you indicate what your conditions as to houses or frames are, so that some special information could be furnished to you in our columns more fully than can be given in a reply?

2350—**Freesias** (*Inquirer*).—If your Freesias be in a very small pot, or the roots seem cramped, wanting more room and soil, no harm can follow if you shift the plants into a clean pot one size larger than is the present one, using about the roots, and well worked in round them with a thin piece of wood, fine sandy pot soil. Such a repotting will not necessitate harm to the roots or check growth in any way, whilst you may find better leaf growth and finer bloom to follow in consequence.

2351—**Christmas Roses** (*G. D.*).—Place round the Christmas Roses the sides of a box, and place sheets of glass over the top during bad weather. Your Violets will probably come better in the spring. You should not have picked off the "Geranium"-leaves so closely; do not gather more until decaying. Frost will not harm the Spiræa. It is either the old grass dying down or the brown, downy appearance of new leaves. Our limit to number of questions at one time is six.

2352—**Oil-stove for greenhouse** (*Inquirer*).—There would be an advantage of gas over oil-stoves, as the former are more reliably supplied with fuel, but many of the oil-stoves advertised in these pages are all that is claimed for them. Get a Black Hamburgh Vine and plant at any time now. If you may not drive in nails, could you not persuade the owner to allow of a few staples being fixed at top and bottom, and stretch wires from these? Ampelopsis Veitchi will cling to cement or glass even

2353—**Seedling plants** (*Dorking*).—Judging by the little sketch attached to your query, we should say that the plants which you find amongst your seedling Carnations are the Common Sorrel. The seed probably was present in the soil, hence the singularity of the plants appearance simultaneously in two lots of seedlings. If,

however, you have doubts as to our naming of the plants, will you please to send us a live specimen when growth is more fully developed? We may then better recognise it.

2354—**Plants to flower in July** (*Romalcam*).—In addition to your already long list, the under-mentioned are good, and would be in flower about the time you mention: Hemerocallis (Day Lily), Statice (Sea Lavender), Bocconia cordata, Monarda didyma, Spiræas, Lychnis, Inulas, Gladiolus, Solidagos, Brodiæas, Canterbury Bells (Campanulas), Calochortus (Mariposa Lilies), Dictamnus Fraxinella albus, Phloxes, Liliums, Saponarias, Anemones, Rudbeckias, Francoas, Delphiniums, Sidalcea candida, and Dianthus chinensis Heddewegi varieties.

2355—**Evening Primrose** (*Ouida*).—It is too late to sow seed of the Evening Primrose (Œnothera fruticosa), or other varieties outdoors now. You may, however, if you want to push on plants early, sow some seed in pots or pans, and raise seedlings in a frame, and plant them out in April; or you may wait and sow seed outdoors either to transplant later on, where to bloom at the end of April. Sow in little rings if where to bloom, and thin out later to about three plants. Do not be too lavish in sowing, as the plants grow strong, and in time seem to dominate all else. Plants are hardy, and increase rapidly.

2356—**White Pyramid Campanulas and Canterbury Bells in a hot situation** (*Pandora*).—We fear you would be trying too much by attempting Roses under pegged down, or any other treatment in conjunction with the taller-growing Campanulas. These vary much in their requirements, and the "Canterbury Bells" need a rather rich and close loam to do them well. They are quite hardy, but we cannot recommend them in so warm and chalky a soil as you name. Use the "Blue Pansies" for the outer ring of the centre bed of Roses, and try other subjects than Canterbury Bells for the surrounding beds.

2357—**Plums and Apples** (*Amateur*).—With respect to Green Gage Plums, so much depends on how grown. Generally, they do best on walls, where several varieties are excellent croppers; but if you want to grow them as standards or bush-trees, then the best are the old Green Gage and Oullin's Green Gage. Of Apples for cropping and cooking there are none, on the whole, heavier or more constant croppers, in bush or standard form, than Stirling Castle (fairly early) and Prince Albert (late). Both give good-sized, though not extremely large, fruits. If you specially want large Apples, then have Warner's King and Lord Derby. We prefer the former for general use.

2358—**Lily of the Valley** (*H.*).—Yes; you can plant out the roots of Lily of the Valley, although they did not flower last year. But if we understand you rightly, the bed is planted, but failed to flower. In that case do not remove. Lily of the Valley prefers a rich and deep loam; one that will not dry up quickly in summer. If you cannot afford this, the bed must be well watered after flowering. Provided you water well, a partially-shaded position beneath trees is good. Your question upon Herbs needs too long a reply for these columns, and we shall be having an exhaustive article upon the subject early in the year; a far more suitable time than the present.

2359—**Fern-manure** (*Pteris*).—Ferns, as a rule, want little of special manure feeding. If they do badly it is usually a sign that the soil is sour, the drainage choked, and the roots are dying. Let your Pteris cristata have only just enough of water during the winter to keep it alive. Then in the spring turn it out of the pot, rub off a third or so of the old soil, and repot, using a clean pot, and compost one-half fibrous loam and the other half composed of peat-soil, leaf-soil well decayed, sand, and crushed charcoal, all mixed up. In such a compost your Fern will soon make new, strong growth. The addition of manure, especially at this time of the year, would probably serve only to make the soil more sour than it previously was.

2360—**Heating greenhouse** (*G. M.*).—To give anything like a fair warmth, and especially in very cold weather, you ought to have at least three lengths of piping in your lean-to greenhouse, two flows falling into one return. Still, two returns would be better. The pipes would be best about 2 feet from the front, running the flows above and the returns in under. If your boiler is fixed at the far end from the door, you should have the pipes run across that end, then turn along the front of the house its entire length, and return. It would, if three lengths, take about 60 feet run, and in four pipes, 80 feet. You should in that way keep up a very comfortable temperature for flowering plants, and help start the Vine fairly early also.

2361—**Netting Strawberries** (*Somerset*).—The netting over of your early Strawberries as you suggest would do no harm, as the interference with light would be inappreciable. The need for doing so depends very much on the nature of the spring weather then, but white frosts come like thieves in the night, or rather early morning. The chief good the net might do to the bloom in such case would be to catch some of the prevailing moisture in the form of vapour, and also for that reason might arrest some of the frost. Your walls must be very close together, if 8 feet in height, to enable you to throw nets from one to the other. Could you arrange to remove the nets in the morning and replace at night? If so, you could then put them double, and thus obtain some real protection.

2362—**Hyacinths in glasses** (*J. McD*).—Seeing that your first glassed bulbs did so well, and assuming that you used water for the second lot, just as used for the first ones, the only conclusion we can arrive at why the second lot have made little or no root, is because the temperature of the place, where kept in the dark, must be lower. Are you sure that the water has touched and moistened the bases of the bulbs? Some of them, too, may be naturally earlier than others, and thus the difference in root-production. It seems to be quite a question of patience. No doubt if you could give more warmth you would see more rapid growth. You may make inquiry as to the water, as if not the same as that in the first glasses, then the latter may be hard, and somewhat limey; no other explanation seems possible.

2363—**Pear-tree** (*Wantage*).—A north wall is hardly the best position for a Pear-tree trained, as the wood and buds need more warmth than can be thus obtained to thoroughly ripen them. If you could lift the tree with great care and remove to an east or west wall, it might do better. Failing that, it may be better to lift the tree entirely and replant at once where it now is, as it seems evident the roots have gone too deep. This may be better than attempts at root-pruning, which may be badly done. When the tree is lifted, cut off all roots that strike downwards. Also, in replanting, do not bury the roots deep, neither add manure; but after planting lay a mulch of long manure about over the roots. Leave nailing until the soil is settled, and pruning should be moderate and done at the same time.

2364—**Peach-trees dying** (*Cornwall*).—As your Peach-trees have died away so badly, we should strongly advise you, ere planting others on the same border, to remove most of the soil, and replace it with fresh soil from the vegetable quarters. The soil may well be excavated to a depth of 2 feet, the bottom being left well broken up, several inches in depth, to admit of free drainage. To replant in the old soil would be but to court failure. It is possible that the soil may lack potash, and be too full of iron, but that cannot be told except by personal inspection. In making the border add, if you can, some wood-ashes and soot, also a little bone-meal. As the trees grow they will benefit by a forked-in light dressing once a year of sulphate of potash or gypsum, for potash is a very important element in both wood and fruit.

2365—**Black Currant-bushes** (*Perplexed*).—If the buds on your Black Currant-bushes are broad, big, and burst, then we fear they are suffering from a bad attack of the Currant-mite, and the case is a bad one. When such buds as these are few only, and they are pulled and burnt, often much good is done; but when bushes are badly infested we regret to say there seems to be no other course open but to grub up the bushes and burn them. Could you send along some of the buds in a little tin or wooden box, that we may see whether mite infested or not? If you have a good lens, and picking a bud will pull it open, then examine it, you will soon see if tiny, whitish mites are present. It is because they get into the bud that dressings of any insecticide seem useless. You may now, at least, thin your bushes, removing very old wood. That will be something.

2366—**Tomatoes as pot-plants** (*Wm.*).—It is rather too bad to grow two Tomato-plants in a 9-inch pot. Only one plant should be sown, as the roots need all the room when in full crop. Your first flowers fail to set because the pollen wants to be assisted to disperse. Hold a sheet of white paper under the clusters of bloom, and shake them carefully to catch the pollen on it. Then dip a hare's-tail or soft-foot into the pollen, and touch the pistils of the flowers with it to set them, then they will produce fruit. A Tomato-house in the spring should be heated to about 55 degs., but the sun then gets power in the day. The heating is mostly needed at night. Fowl-manure is best soaked in a coarse bag at the rate of a peck to 10 gallons of water, giving the plants some when fruits are swelling, and the pots are full of roots, twice a week. The manure should not be mixed with the soil, as it is too strong.

2367—**Planting fruit-trees** (*Tyro*).—If you have no road on the north side of your ground an iron-fence will do, if you plant a row of Spruce Firs close to it, and 4 feet within a row of the broad-leaved Privet. These combined will soon give you a fine wind-break. Plant the first row from the Privet of Farleigh Prolific Damson, very hardy. Then run the rows north and south of Apples: Lord Suffield, Lord Grosvenor, Pott's Seedling, Frogmore Prolific, and Lane's Prince Albert. Pears: Williams' Bon Chrétien, Louise Bonne of Jersey, and Beurré Rance. Plums: Rivers' Early Prolific, Czar, Victoria, and Monarch, and Morello Cherries, with, if you wish, Gooseberry and Currant-bushes amongst them. Well trench and clean the ground, break it up 20 inches deep, but leave the bottom soil where it is. Add a thin dressing of well-decayed manure, get this done at once, and then the planting immediately also.

2368—**Cactus Dahlias** (*Subscriber*).—There is some danger in allowing Dahlia roots to remain in the ground all the winter, as very severe frosts may kill them; or if they do survive you have so many shoots break up from the root, whereas for all ordinary purposes one stout stem is enough. We do not understand why you should have difficulty in keeping the roots that others do not find. Preferably lift the roots now, shake them as free from soil as you can, removing any that clings with the aid of a pointed stick. Turn them bottom upwards to drain the hollow stems, then, when fairly dry, put them as close together as you can into shallow boxes, and fill in round them with fairly dry soil or fine ashes, and stand in a cool, dry place where frost does not penetrate. There the roots should keep well, and from them in the spring, when placed in a frame or greenhouse, no difficulty should be experienced in getting good cuttings.

2369—**Growing Sparaxis pulcherrima** (*B. C. W.*)—Sparaxis should do well in a light, well-drained soil, and should, preferably, be planted in front of a wall. In such situations Sparaxis, Ixias, and Babianas flower well in the south-west, though, possibly, the different climatic influences of the south-east might prejudicially affect the vigour of these Cape bulbs. Lilium Browni, L. chalcedonicum, L. Martagon album, L. Hansoni, and L. Henryi are all good garden Lilies, the last-named variety being an especially strong grower. L. Humboldti does best in deep loam and leaf-mould, while L. superbum (a Swamp Lily), is best suited by peat. L. pardalinum, equally beautiful with L. superbum, is not so fastidious as to soil, and may often be seen doing well in a staple in which peat is absent. The excessively free drainage is, certainly, rather inimical to successful Lily culture, and every opportunity should be taken to make the soil heavier.—S. W. F.

2370—**Currant-buds** (*D. C. B*).—The complaint you make of birds eating out the dormant fruit-buds of Currant and Gooseberry-bushes is, we regret to find, a very common one. It is all the more remarkable because the birds have not the excuse of hard weather compelling hunger. Kind-hearted people have been protecting the birds, and these repay that kindness by doing all the mischief they can. If you will get some soft-soap, add to it some boiling water, then put the soot you employ into a bag, the warmer the better, soak that, too, for 24 hours in water, keeping it frequently moved, then add the two liquids together, you will have a more effective dressing; or spray your bushes with the soap mixture first, as it is sticky, and then whilst wet dust the bushes with soot or lime. These things will do the buds no harm. Where it is possible to do so, the best protection is found in covering up the bushes with fish-nets, leaving the pruning till the spring.

2371—**Making rock garden, etc.** (*Amateur, Exmouth*).—Whatever you use for the proposed rock garden, omit all roots and stumps of trees. They not only rot, but harbour insects and produce many dangerous fungi. Try the following subjects, but give up the thought of Palms: Adiantum cuneatum, A. decorum, Davallia canariense, D. bullata, Pteris tremula, P. serrulata, P. cretica, Scolopendriums. All of these are Ferns. For colour, we would select from such greenhouse plants as Zonal and Ivy-leaved Pelargoniums, Epiphyllums, Begonias, Tradescantias, etc. But you had much better state the size of your rockery to a trade grower and request him to make up a collection of twenty-five or fifty, as the case may be. Do not overcrowd at first, or you will lose effect and soon have a tangled masses of plant life fighting among themselves for existence.

2372—**Tomato disease** (*Love Apple*).—Your house, heating, and general culture of Tomatoes seems to be quite correct, and you seem to take every precaution against the disease which attacks your plants. Still, it seems as if the fungus—for that is the nature of the disease—left behind resting spores in the house. Could you empty it absolutely at any time, and then fumigate it by burning sulphur in it two or three times? Again, the soil you use should be obtained from some little distance, as your own is doubtless infested with spores. Use also as little soil as possible, keeping the roots rather restricted if not in pots, then in boxes or troughs 18 inches wide, and 7 inches deep. Get seed also from a different source, but we fear there is no variety more disease proof than another. Good varieties are Conference, Duke of York, Frogmore Selected, and Polegate, though these offer very little variation. Very strong growers are not the best fruiters, on the whole.

2373—**White Celery** (*Ignorant*).—There is not so very much difference in white Celeries. Some are stronger growers than others, and that is about all. Grove White has a high reputation if you get a true stock. Of course, all depends on that. Suppose you try Solid White, as it is a very fine market variety? Red Celeries seem most in favour in the London market, the selection known as Market Red, when well grown a very heavy Celery, being most grown. Reds in any case seem to be the best keepers. Quality in Celery is often due to culture—sowing seed in gentle warmth in March, pricking out the young plants ere they become too dense into other pans thinly, and keeping them growing on and not starving for want of water. Planting out into a bed of good soil 4 inches apart, watering and shading, and keeping the plants active, and then planting out when strong, with balls of soil, into trenches, again watering and shading until they are well established.

2374—**Diseased Violets** (*J. R. B. W.*).—If your Violets are badly affected by the fungus, as seen on the curled, closed leaves, we should advise entire destruction, and replanting on other soil with a fresh stock. It is a distinctly uncommon attack, though not new—indeed, it closely resembles the fungus sometimes seen on Violas and Pansies, though never in such case very harmful. If the disease is not extensive with you, then pick off all the affected leaves and burn them, and top-dress the Violets with some fresh and fine soil, giving, to well wash in later, a good dressing of fresh soot, which, if not washed in by rain, should by watering in a couple of days. All the same, it would be as well to get stock from elsewhere, and plant in fresh soil, so that, should farther trouble arise, you can after the spring blooming destroy the old bed, digging in with it a dressing of lime. Violets should not endure longer than three years, a fresh bed for succession being made every spring from clean, young growths.

2375—**Diseased Celery** (*Young Gardener*).—Your stem of Celery proved to be the most rotten, offensive, diseased, worm-affected example we have even seen. It was, so soon as opened and looked at, committed to the dust-bin. Eel-worms were literally swarming all over it. You had better at once lift every plant you have, and any that are sound wash them well, without destroying the roots, then dust with lime, and lay them right up to the tops in fresh soil. Let any that are too far gone be collected in a heap and smothered in lime, and, if possible, destroyed utterly—if possible, scalded or burnt. The soil where growing should be turned up well and be also smothered with fresh lime, doing so two or three times during the winter, also exposing the soil by forking up frequently for birds to eat the eel-worms. Plant the ground next year with Broad Beans or Cabbages, but not with roots. Have you used pig-manure? It seems to have been horrible stuff. Use no more of it in its present condition.

2376—**Black Hamburgh Vines** (*Scottish Reader*).—You did wrong in taking two shoots or laterals from one spur. The strongest only should have been saved and the weaker pulled out. Evidently you have overcropped. If the border has become close, just fork over the surface 2 inches deep, and then spread over a dressing of fresh soil mixed with wood-ashes, bone-meal, and soot, also some fine mortar rubbish or sharp sand. That should in the spring greatly help to form new roots. Let only one-half the crop you have had this season remain next year. You will probably find finer berries and bunches, and they will get better colour or finish. You will find it difficult to get specimen Chrysanthemums into bloom in August. The very best early varieties to make good pot-bushes are Mme. Desgrange, white, and Mrs Hawkins, yellow. You should get cuttings rooted or young plants as soon as you can get them potted into 60's or 3-inch pots, and pinch them when 9 inches high, then once more when shifted into 5-inch pots, and so soon as you can after new shoots are made, shift into 8 inch pots, in which they should bloom. The plants will have to be got under glass early in August.

2377—**Pipes for Cucumber-house** (*Reader*).—We should prefer not to plant Cucumbers in a bed of soil, as you propose, because should fungus or eel-worms get into the bed, the very brickwork and floor become infested also, even if fresh soil be added each time of planting. Preferably leave a solid bed of soil, if you wish, up to within 18 inches of the springing of the roof. Run two 4-inch flow-pipes along, 12 inches to 15 inches from the front wall, side by side. Let these rest on flat laid bricks. Across the pipes put wood or iron bearers at intervals.

On these place troughs of stout trellis bottoms, and stout wood sides. Let these be inside, 20 inches wide, and 7 inches deep In filing them place the roughest, turfy portions of soil on the bottom, fill up to a ridge shape with chiefly turfy-loam and old hot-bed manure, the latter not more than one-fifth of the whole. Plant out Cucumber-plants 20 inches apart, and train them up the wires under the roof. When the plants have done fruiting take out all the soil, and well wash the troughs with hot lime before using again. The return pipes (two at least) should be carried along beside the path, but kept as high up as possible to give the needful heat. To do Cucumbers well a temperature of from 65 degs. to 75 degs. is needed.

2378—**Disposing of Narcissi, etc.** *(Earliest).*—We fear we must advise you not to attempt such early culture with the Tomatoes. Only long-experienced growers are successful with these during mid-winter, and you would certainly not be sufficiently so to remunerate yourself for fixing and trouble. It would be far better to keep the Narcissus in their present quarters, and, when the days turn, hurry them on a little By-the-way, you say nothing of the heat you can supply, nor even if any. The winter Tomatoes will need a sure and steady heat of at least 55 degs. to 75 degs., never falling below the first temperature during the coldest weather. Taking this into consideration, we would advise you to leave the Narcissus and rear some fresh seedling Tomatoes as early in the year as your heating appliances will permit, potting these on and getting them forward, ready to take the place of the Narcissus You will be able to clear sufficient room for these while young by the removal of the earliest Narcissus. Three rows of Tomatoes will be rather close, and we advise 18 inches from plant to plant, in preference to 12 inches, growing them upon single stems. The best way to accommodate the Narcissus, if you really wish them out, is to plunge the pots, or even turn the bulbs out of pots carefully, in a sheltered part of the garden, just covering the tops with a light soil and affording further protection with any light branches or leaves. They are hardy, and would come to no harm if so treated before they advance more. If you need any further information we shall be happy to reply, but we are bound to say you are attempting a very risky and ambitious thing with Tomatoes for winter fruiting. How long plants would be before bearing fruit depends so entirely upon treatment that we cannot reply. Under any circumstances, the Narcissus would not do in the same temperature needed for mid-winter Tomatoes.

2379—**Brompton Stocks.**—Some Brompton Stock seedlings, just coming up, will they blossom next year? And will it be best to keep them till spring in the unheated greenhouse they are now in?—Inquirer.

*** *We would keep these under cover until spring, where they can be better secured against insects and excessive wet. They should flower well, both in the open or pots, next year.*

2380—**Pots in cold-frame.**—I have a cold-frame which I think of filling with dry leaves—Oak and Beech—and putting in pots of bulbs—Hyacinths, Tulips, Gladiolus, Narcissus, &c.—in the same. How would that answer? I could take off the lights when the weather was not cold, and give plenty of air.—Archie.

*** *Your plan would be excellent for such bulbs. But we note you propose to take off lights in cold or severe weather, and give plenty of air. Now that is the very time your protection would be most needed.*

2381—**Solanum jasminoides.**—I planted this in a cool-house, facing east, two years ago, and it has now partly covered the roof, and bloomed fairly well this year. I should be glad to know whether it should be pruned; and, if so, how to produce the largest amount of flowers next year?—Tyro

*** *Simply thin out shoots where crowded, and shorten back the remainder half way. Give a rich, loamy compost, and see that they never suffer from drought during active growth. Frequent syringing during summer is also beneficial.*

2382—**Peach-leaved Bellflowers in pots.**—I have a number of Campanula persicifolia grandiflora, nice young seedling plants, in pots Should they be put out into the open, or kept as they are till the spring?—Inquirer.

*** *It is rather late to plant these out, and if you keep them in a cool-frame or pit until April and then plant, they will come on rapidly.*

2383—**Hyacinths and Narcissus for show.**—I intend growing some Hyacinths and Narcissus for exhibition first week in April. They will be plunged now in Cocoa-nut-fibre, and I am anxious to know how long before day of show they should be taken out of cold-frame to be finished in a dining-room?—F. G. L.

*** *Yours is rather a difficult question, as so much depends upon how the bulbs progress, and if in a frame or the open now. Six weeks will probably be quite long enough, and if coming on too rapidly you could remove to a slightly cooler place.*

2384—**Propagating summer Begonias.**—"O. G." desires to know how to propagate summer Begonias from seed and by division of bulb?

*** *As this subject has been fully treated upon in recent numbers, and will be once more in due season—i.e., early in February—may we ask our correspondent to look out for same, and save us the repetition of a long article?*

2385—**Roses and creepers.**—At the back (west) I would like to plant some creepers or climbing Rose-trees to cover walls of outhouses. What should I plant? If creepers, is this the right time of year to do so?—R.

*** *This is the time to plant creepers, Evergreen Roses such as Félicité-Perpetue, Teas such as Gloire de Dijon, Mme. Berard, Reine Marie Henriette, Waltham Climber, Mme Alfred Carriere, Noisettes such as Aimée Vibert and W. A. Richardson*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants—*T. W. M.*—The leaf you send is one of the "Rex" section of Begonias. Cut through the main nerves of a matured leaf, and lay it upon a level surface of sandy loam and leaf-soil. Give one good watering, and place in a propagating-case with a little bottom-heat, and a temperature of 70 degs. to 75 degs. Small bulbils will soon form at the severed spots, and young plants result by next summer. Lay the leaf with its underside upon the soil, and place a few small stones to weigh it down if not inclined to lay fairly flat——*Mrs. Brodie.*—We cannot be quite certain of your Rose, it was shattered when received. Please send another. The sport of Polypodium is new to us, and we would advise you to watch it. If constant it will be one of our prettiest departures from the type, and be a valuable acquisition.——*Lydian.*—The flower is one of the Eupatoriums. We have no doubt the Fir-tree-oil or great drought at the roots are the cause of your failure. Do not keep them too warm—60 degs. at the most—and let them be fed with weak liquid-manure once a week.——*Subscriber.*—The specimen leaf of your succulent plant sent reached us very much bruised, and because so, some of your note was obliterated. Leaves or specimens of plants should be enclosed in a small wood or tin-box to ensure safety. So far as it is possible to judge, the leaf seems to belong to the green Mesembryanthemum cordifolium, but it may not be. Really a more perfect, as well as much larger, sample is needed to enable it to be correctly named.——*J. Crossle.*—The names of the Ferns are: 1, Lastrea Filix-mas congesta; 2, Polystichum angulare grandidens; 3, Athyrium Filix-fœmina Pritchardi.——*C. E.*—Cotoneaster rigida.——*S. R, North Wales.*—It is quite impossible to name bulbs when at rest. Send when in flower. It is also impossible to name shrubs from leafless shoots unless flowers accompany them.——*Bang.*—1, Not received; 2, Hippophæ rhamnoides (Sea Buckthorn); 3, Cotoneaster rotundifolia.——*O. F.*—The Clematis-bud was not developed sufficiently to enable us to name it correctly. It may possibly be C. Jackmani; if so, it will be necessary to prune now. Cut the plant down to within 8 inches of the ground The Fern is a common variety of Scolopendrium vulgare.——*L. Campbell.*—1, Oncidium reflexum (pale variety); 2, Is a species of Doodia, but owing to the shrivelled state of the frond it is difficult to determine the variety.——*L. T. Floyd.*—The plant is Garland-flower (Hedychium Gardnerianum). Certainly plant it out for the summer. A heap of cinder-ashes or half-rotten leaves laid over the crowns in winter will ensure their safety in very mild climates; or the roots may be lifted in autumn and wintered in any dry place along with Dahlias and Cannas. Increased by dividing the roots in spring, but in doing so it is necessary that each piece should have a young crown attached to it.——*Ormesby.*—We are sorry we cannot help you. It is very difficult to tell the name of a flower from mere description.——*New York.*—We shall be always pleased to help you, but the specimens sent were not very good. 1, Skimmia japonica, hardy; 2, Kindly send a better specimen; 3, Weigela or Diervilla var., a very useful, free-flowering shrub; 4, Sidalcea candida; 5, Spiræa Bumalda——*Mrs. Goodcake*—The plant is Justicia carnea, and is readily increased from cuttings. Put in pots filled with fine soil, and give the temperature of a stove.

Names of fruit.—*E. Pitt.*—1, Duchess of Oldenburgh; 2, Benoni.——*Lord L*—Apple King of Tompkins' County.——*M. S*—We are sorry the numbers have got mixed, but evidentiy they could not have been securely fastened. We do not remember your individual case, but correspondents give considerable trouble by not numbering the Apples plainly, and fixing the labels securely. We have just received a parcel with no name as to sender, and the numbers were affixed by tin-tacks. These got loose in the post, and we cannot tell which fruit is No. 1 or which is No. 6. If you can send again we will help you.——*W. Warren.*—1, Mabbot's Pearmain; 2, Beauty of Hants; 3, B'enheim Orange; 4, Probably a very badly shaped Cox's Pomona.——*Grateful*—The Pear is Autumn Bergamot; the Apple Old Nonpareil.

TO CORRESPONDENTS

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

T. B.—We thank you for your note. The subject shall receive careful attention.——*W. H. P.*—Cox's Pomona should never be placed amongst dessert Apples. It is a cooking kind really, and almost every judge would disqualify you for showing it as a dessert fruit.——*E. Carless*—You must find some market near. It will not pay to send to Covent-garden.——*J. W.*—You want Iggulden's book on the Tomato, price 1s. 3d., post free, from Mr. Iggulden, Frome, Somerset.

LAW.

Removal of greenhouse and boiler.—My parents are removing, and I am beginning business as a gardener. I have partly erected a greenhouse 30 feet by 12 feet, which is entirely of wood, on posts let 12 inches into the ground. If the landlord objects to the removal of the erection, could I remove it by sawing the posts off level with the ground? The greenhouse will be heated by a 24-inch saddle boiler on bricks and arched over, with stokehole 4 feet deep. Could the boiler be removed on notice when quitting? Could the ashpit be built without mortar or with wood underneath, by order of law?—G. N.

*** As to the right to remove private greenhouses, see reply to "Lean-to," p. 580. As the place is evidently being now let to you, the Market Gardeners' Compensation Act will not apply unless the land is let in writing for cultivation as a market garden. If you wish to cultivate it as a market garden, get a written agreement to that effect at once. If it is a private occupation, get your landlord to give you a written agreement allowing you to remove the greenhouse on quitting. I think such a greenhouse as you describe might be removed by you on quitting in any event without giving notice, but if it could not be so removed you would be in no better position if you did saw off the posts, as you would not thereby acquire the right of removal. But you could not remove the boiler built in brickwork and arched over, unless you held under a written agreement permitting the removal of the greenhouse, in which case you could remove the boiler also. What your last question as to building ashpit without mortar or with wood underneath "by order of law" means I cannot tell, so cannot answer it.—K. C. T.

Allotments.—Does land rented from the Crown by an urban district council for allotments come under the Allotments Acts? Which act would be the best for me to go by, and where could I get it? Would it be the Allotments and Cottage Gardens Compensation for Crops Act, 1887, or does the Parish Councils' Act affect the matter?—One in Doubt.

*** Land rented from the Crown by an urban district council for the purposes of allotments comes under the Allotments Acts, 1887 and 1890. As you do not say how you come to be affected by these Acts, or by allotments, your question is not so easily answered, but if you are seeking an allotment you must apply to the council. If you are quitting, and are wishful to claim compensation, you should claim under the Allotments and Cottage Gardens Compensation for Crops Acts, 1887, a full account of which appeared in Gardening for June 19th last, on page 237, and which will probably be of more service to you than the Act itself. If you have not preserved this number, you can get it from the publisher for three halfpence in stamps. By the Parish Councils' Act you probably mean the Local Government Act, 1894, which does not affect allotments let by an urban council.

A neighbour's boundary.—The wall which divides my neighbour's garden from my garden belongs to me, and is repaired by me on both sides. How often can I go into my neighbour's garden to examine the wall? As I allow no nails to be placed in the wall, at what distance from the wall must his posts for training fruit-trees be placed? Can I claim any land on his side of the wall? How near to the wall can he build? In my deed of conveyance it is stated my neighbour has the right "to retain the present bearings of the roof of the stable and gig-house." Would this clause prevent him from putting in new bearings without my leave? or raising the roof or making any alterations or additions to the present structure?—Potsy.

*** Your property and the property of your neighbour probably belonged to one person at the time when the boundary wall and the stable and gig-house were built. When the property you now own was sold away, it would be described as bounded by the wall but including that wall, and so the further side of the wall will be your boundary; but unless it is evident from the deed of conveyance that some land on the other side of the wall is conveyed to you, you can claim no land on your neighbour's side. No doubt the footings of the wall will extend a little distance into his land, but you will have the right to have those footings remain undisturbed by him. He may erect training posts for fruit-trees or build as near to your wall as he chooses so long as he does not injure the footings of your wall. You have no right to enter his garden at any time to inspect your wall unless some such right is granted to you in the deeds of the property. I should not like to say what is the exact effect of the clause you quote unless I saw the buildings or a plan of them. It seems to me that the term "bearings," as used in the deed, means the distance that the ends of tie beams, girders, joists, etc., are let into your wall, for I suppose that the buildings adjoin your wall, and are supported by it. This means that your neighbour has the right of support from the wall to his beams, etc., and if those beams, etc., wear out, or become defective, he may replace them, which I suppose you term putting in new bearings, but such beams, etc., can only be placed in the same situations as before, and not in new situations. Subject to the above, your neighbour may raise the roof, etc., but he must not increase the burden of the support required from

your wall. If your wall is not interfered with, nor any increased burden placed upon it, your neighbour may build as he chooses in his garden, but he cannot attach any building to your wall. As your address is not before me, this answer must be read subject to any provisions in the London Building Acts, if the premises are situate in London, or subject to the provisions of any local building Act, if such is in force in your locality.—K C. T.

Right of a private tenant to remove a lean-to greenhouse.—I am thinking of erecting a lean-to greenhouse against the end of my house, but I am told that if I do so it will be a landlord's fixture if I place it on brick foundations or nail it to the wall of the house. I do not propose to in anyway attach the woodwork to the brickwork, but to merely allow it to rest thereon. All the glass and woodwork would be removable without interfering with the house.—LEAN-TO.

*** The law as to the removal of private greenhouses is in an unsettled state; but it seems that if you merely rest the woodwork on the foundation walls and do not fasten it with mortar, it may be removed by you, although the foundation walls could not be removed. A slight attachment to the house wall would not render the woodwork a landlord's fixture, but the woodwork must not be let into the wall.

Removing plants (*Roman*).—No; you cannot touch the plants or greenhouse. The only thing you can do is to see the landlord and get his permission.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Pickled Cucumber.—To pickle Cucumbers peel as thin as possible. Have them as small as you possibly can, as they are not so full of seeds. Cut each of them in pieces to fit the bottles or jars that you intend pickling them in. Put them when peeled on deep dishes, and sprinkle lightly with fine salt. Leave them until the next day, then drain off the water. Boil a quart of vinegar for twenty minutes with a dozen Peppercorns, a tablespoonful of Mustard-seeds, a tablespoonful of Celery-seeds, and a dozen Chillies. Pour this boiling hot over the Cucumbers. Cover the jars to keep in the steam, and the next day drain off the vinegar. Boil this vinegar for ten minutes, pour over the Cucumber, and cover with bladder. When cool see that that the Cucumber is well covered with the vinegar; if not, fill up with cold boiled vinegar. Keep in a cool, dark place.—B.

BEES.

Fixing sticks in hive (*An Amateur*).—The only time that sticks are used to support the combs is when a skep of Bees is being prepared for travelling, when two or three pointed pieces of stick are passed through the sides of the skep, piercing the combs to keep all steady; otherwise sticks are not used in hives in these days, although years ago the old-fashioned cottage Bee-keeper was in the habit of placing sticks in the hiving-skep before shaking a swarm into it, the object being to support the new combs. These sticks were, however, much in the way when the time of honey-harvest arrived, rendering the removal of the combs a difficult operation. We have in years gone by, when harvesting cottage Bee-keepers' honey for them, occasionally found sticks fixed inside skeps, but these supports are not needed, the Bees being quite capable of securely attaching their combs to the hive without any help on the part of the Bee-keeper. It was a very novel, and useless, arrangement of yours to "fix sticks across inside the hive, each stick a few inches below the first one, and soon." What your object could have been in filling the hive with sticks we are unable to tell. Truly, the modern bar-frame hive is full of sticks, so to speak, but these are in the form of frames so hung in the hive as to form receptacles for the combs as built in their natural position, and are a great acquisition in the manipulation of Bees, and in securing the honey in good form by passing the combs through the extractor. These frames (usually about ten in number) can be added to or reduced according to the requirements of the Bees, and when first placed in the hive are furnished with comb foundation, which enables a swarm to work out combs with great rapidity. There are no other "fixings" within the hive except the division-board.

Queen wasps in a colony.—Having read the note on page 548 with much interest, may I inquire how many were counted by Mr. Stanton? Some years ago I was at the trouble to count those hatched out from a nest I took, and there were over 360, besides some hundreds in the capped cells, which would have come out in the course of a week or two. This season I have taken some remarkably strong colonies, but did not trouble to count the young queens, although I have no doubt they exceeded the one mentioned. I also found two colonies of hornets, which I did not interfere with, as I like to see a few about, although the queens in spring killed some of my bees and carried them off home.—JAMES HIAM, *Astwood Bank, near Redditch.*

POULTRY.

Peacocks and their value (*S. R. H. G.*).—I can only advise you approximately as to the "money value" of Peafowl, because the price of such birds must be regulated by the laws of supply and demand, and it cannot be said that there are many buyers of this class of stock, although there are many admirers. Probably, if one were to inquire of a regular breeder for a pair or more the price asked would range about a pound or a guinea for year-old birds, but a few days since I noticed the report of a public sale in which the figures were much lower. I do not think you need anticipate any trouble with them when walking on a lawn where there are flowers, although it can scarcely be expected that they will always "keep on the Grass." The proper place for Pea-fowl is on a lawn where shrubs, rather than flowers, are in evidence, and where low branches of trees are accessible for them so that they can show off their plumage to perfection. They are naturally of a wild disposition, but by kind treatment and regular feeding they soon become accustomed to their surroundings. When they reach the adult stage they are as hardy as the birds of the air, and prefer to roost in high trees or on the ridge of the roofs. Feed on hard Corn, Wheat, Barley, and so forth, as in the case of adult Turkeys.—DOULTING.

BIRDS.

Death of Redpoll (*Constant Reader*).—It is to be feared that your little bird had not been properly trained at the time it was purchased, and not being able to draw up its food by means of the tram seed-box, died from starvation; your feeding it for the first two days helped in a degree to make it forget what it may have learned in the matter of drawing up the seed and water. The small supply of Watercress would not have caused its death. As a rule, these pretty, engaging little birds will readily learn a number of little tricks in captivity and are naturally so tame and free from apprehension that they will eat immediately after being captured. It would have been a wise precaution to have watched to see if the bird was capable of helping itself to food and water and to have gradually lessened the supply by hand; it was unfortunate that you suddenly stopped the feeding. Caged Redpolls should be fed chiefly upon Canary-seed, adding to this diet from time to time a little Maw-seed, summer Rape, and Lettuce-seed, and just occasionally, a few grains of Hemp. Being greedy feeders, and having a tendency to become too fat, it is necessary to use a sparing hand in the supply of the latter. The catkins of the Birch and Alder yield abundance of food for this species during the winter months, when large numbers arrive in this country from the north.—S. S. G.

Highgate Chrysanthemum society.—The exhibition for 1898 will be held on November 8, 9, and 10, at the Holloway Hall.

Gardeners' Royal Benevolent Institution (*H. Huckle*).—Apply to the secretary, Mr. Ingram, Parliament-street, Westminster, London.

Dutch Bulbs.—Great Sales Every Day (Saturdays excepted). MESSRS. PROTHEROE & MORRIS will SELL BY AUCTION, at their Central Sale Rooms, 67 and 68, CHEAPSIDE, E.C., at Eleven o'clock EACH DAY, large consignments of Hyacinths, Tulips, Crocus, Narcissus, and other Bulbs, direct from Holland, lotted to suit large and small buyers. 5,000 lots sold every week. Commissions executed for those unable to attend. Lots packed and forwarded to all parts. Sixpence remitted in stamps will ensure supply of Catalogues for twelve sales. — Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

ROSES.—Standards, 12s., 15s. doz. Dwarf, strong plants, 4s. 6d. doz.; 30s. 100. Apples, Pears, Plums, 6s. doz; 40s. 100. Gooseberries, 12s. 6d. 100. Currants, 10s. 100. Privet ovalifolium, 4s. 100. Catalogues free.—S. GLAZEBROOK, Nurseryman, Newark-on-Trent.

MRS. SINKINS PINK, grand stuff, 3s. 100. Seedling Gold-laced Polyanthus, strong plants, 3s. 6d. 100.—WHEELWRIGHT, High-st., Oldswinton, Stourbridge.

LOVELY SPRING FLOWERS. — Sky-blue Forget-me-Not, alpestris, dissitiflora, strong plants, 3s.; smaller, 2s. per 100. White and yellow Iceland Poppies, 1s. per doz. Transplanted Thyme plants, 7d. doz.; 25 for 1s. All free.—S. KILLICK, Hartfield, near Tunbridge Wells.

FILL YOUR GREENHOUSE FOR 4s.—3 Passion-flowers, 4 Marguerites, 2 Cobæa scandens, 2 Ferns, 3 Carnations, 3 Campanula persicifolia, 6 Double Wallflowers, 6 Primulas, 6 Cinerarias, 1 Abutilon, 6 Nicotiana (white and scarlet), 2 Smilax, 4 Cyclamens, 6 Hyacinths, 12 Tulips, 6 Freesias, 6 Gladiolus, 12 Iris. The whole of the above named, packed in box, free, 4s.—G. F. LETTS, West Hadlon, Rugby.

CHOICE CHRYSANTHEMUMS.—Ethorne Beauty, Geo. Seward, In Memoriam, John Neville, Josh Brooker, Lady Hanham, Mrs. Palmer, Mrs. Probin, Snowden, Western King. The above 10 new vars., one cutting of each, 10s. Cash with order.—W. F. SMITH, Client, Stourbridge.

CHRYSANTHEMUM CUTTINGS. — New varieties Yellow Carnot, 1s. each; Modesto, Australie, Edith Tabor, &c, 3d. each. Older vars., 1½d. each. Warranted true to name. Post free for cash.—F. LINGE, Belvedere.

DOUBLE PRIMROSES, 9 var., double Polyanthus, 4 var., sky-blue Polyanthus, giant yellow Polyanthus, Violas, 4 var. Per doz. or 100. Hardy plants, cheap. Lists.—HOPKINS, Mere, Knutsford.

CHRYSANTHEMUM CUTTINGS, 40 best exhibition var., true, 3s.; 20, 1s. 8d., including Mme. Carnot, Mrs. Weeks, etc; strong stuff, last year's best. 12 new var., including Modesto, J. Seward, Simplicity, A. Gold, Olive Oclee, etc. List free.—BUTLER, Marlpool, Derby.

RHUBARB.—Hawke's Champagne, in grand clumps for forcing, at 7s. doz.; and strong, selected crowns for planting out, 4s. per doz. Also Strawberry-plants and Carnations in large quantities.—A. METCALFE, High Park Gardens, Stamford.

LOVELY VIOLETS.—Marie Louise, grandest double blue, fine strong plants in bud, 1s. 6d. doz., 10s. 100; extra large clumps, 2s. 6d. dozen. HOLLIES, 50,000 seedlings, 2 years from Bury, green variety, 1s. 6d. per doz., 10s. per 100. Carriage paid and boxes free to all parts of the United Kingdom on all orders of 10s. and upwards. Lists free.—TOWNSEND BROS., The Nurseries, Bloxham, Oxon.

12 GRAND H.P. ROSES. — La France, Senateur Vaisse, Queen of Queens, Alfred Colomb, A. K. Williams, Duke of Edinburgh, John Hopper, Dr. Andre, Charles Lefebvre, Cheshunt Hybrid, Marie Baumann, Captain Christie, 6s. 6d. 12 first-class Violas, 1s. 6d. 12 do. Pinks, 2s. 12 do. Perennials, 2s. 12 Pyrethrums, 2s. 6d. 12 Carnations, 3s. Car. free.—J. LANGFORD, Nurseries, Withington, Manchester.

ROSE OF SHARON, giant flowering, 4 large flowering roots, 1s. 3d. English Climbing Honeysuckles, 1s. 3d. doz. Yellow Broom, 1s. dozen, free.—A. SYMONDS, 65, East-street, Horncastle.

4 AMPELOPSIS VEITCHI, true, self clinging, 2 year-old plants, 1s. 6d.; 12 for 3s. 6d.; 100 for 20s., car. paid. List free.—BATEMAN & CO., Rose Growers, Axbridge.

FERNS.—3 Evergreen table Ferns, 1s. 3d., free. 25 rockery Ferns, 3s. 6d. 3 New Scolopendriums, 1s. 6d. 3 Crested Ferns, 1s. 3d.—O'KELLY, Ballyvaughan, co. Clare.

CHRYSANTHEMUM CUTTINGS. — 1897 varieties: G. I. Warren, King of Buffs, Surpasse Amiral, Mrs. D Dewar, Marfa, Mrs. Chas Keyser, Vicar of Bray, Topaze Oriental, Robt. Owen Jr., Mme. Bergier, Mdlle Lucie Faure, Sarnian Gem. This splendid set, 6s., free. As demand surely be large, offer good for one week only.—COLNETT, 61, Wyndham-crescent, Cardiff. List free.

GOOD STRONG CHRYSANTHEMUM CUTTINGS, 12, 1s. 6d., or 24, 2s. 6d., 12 distinct var., my selection, to include Princess Ena, Lago Maggiore, Edith Tabor, Phœbus, Australia, Niveus, Graphic, and equal exhibition sorts. Any sort I have named above in one variety same price. Satisfaction 10 years from testimonials received.—J. HOLE, Bramley-avenue, Teignmouth, Devon.

NOW is the TIME TO PLANT LAVENDER HEDGES.—Rooted plants, with full directions, 5s. 100. Mrs. Sinkins Pinks, 4s. 100.—CHILVERS, Hunstanton.

SURPLUS PLANTS.—6 Regal Pelargoniums, 4 Pearson's Zonals, 8 superb Streptocarpus, 4 Ferns, 6 Deutzia gracilis 2 Hydrangea, 3 Primula obconica, 3 Primula floribunda, yellow (a gem), F.C.C., 2 Ivy-leaf, 6 Bridal Wreath; 54 strong plants, 4s. 6d., free. 2 beautiful Rose-trees for pots, named, gratis with order. Half lot, 2s. 6d., free.—HEAD GARDENER, 46, Warwick-road, Banbury.

BEAUTIFUL PLANTS, easily grown.—6 very large Deutzia gracilis, fit for 6-inch pots, 2 Rose-trees, and 12 Doronicum excelsum, 3s. 6d.; half, 2s., free.—HEAD GARDENER, as above.

40,000 CANTERBURY BELLS.—Extra large plants that are bound to flower well. 50, 1s. 6d.; 100, 2s. 6d; 500, 11s.; 1,000, 20s., free. Honestly worth 6d. doz.; must sell at any price.—LEIGH, Florist, Broughton, Hants.

CHRYSANTHEMUM LATIFOLIUM, Harpalium rigidum, Orange Montbretia, Afghan Lily, 50 for 2s. Pyrethrum uliginosum, Iris fœtidissima (coral-berried), mixed Perennials, Tradescantias, rooted, for house or greenhouse, 12 for 1s. Iris neglecta, handsome foliage plant, 6d. each.—GARDENER, Trenewth, Penryn, Cornwall.

CHRYSANTHEMUMS. — Grand exhibition vars. from a successful exhibitor's Collection, 1897. 11 Japanese, 1s. 6d. 12 Incurved, 1s. 6d. Or 6 Japs. and 6 Incurved, 1s. 6d.; 24 do., 2s. 6d., post free for cash.—J. HOLDEN, 13, New-road, Spalding.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

SOME EXHIBITION CHRYSANTHEMUMS.

Apart from the ordinary French novelties, there are among the season's new Chrysanthemums some capital show blooms at the various trade displays, and of those mentioned below it will be difficult to find better, although some of the French may ultimately prove to be quite as good. The list comprises different forms of Japanese, incurved, Anemone, and hairy varieties, not selected from one collection only, but as the result of visits to the principal collections in the neighbourhood of the metropolis, such as Messrs. Veitch, Cannell, Wells, and H. J. Jones:—

Mrs. G. W. Palmer.—A sport from the well-known exhibition variety, Mrs. C. Harman Payne. The colour is a deep rosy-bronze, but in other respects does not differ from its parent.

White Swan.—A very large-sized Japanese, with long, tubulated florets. Colour pure white, faintly tinged in the centre. Very hairy.

Mrs. S. C. Probin.—Japanese-incurved. Florets grooved and pointed. Colour pure white, shading off to pale rose.

Lada Hanham.—A really fine and attractive sport from Viviand Morel, which it resembles very closely in build. The colour varies, but may be described as pale creamy-salmon, shaded rosy-bronze. A very fine addition.

Lady Ridgway.—An immense Japanese-incurved with deeply grooved florets of good width. Colour reddish-bronze, reverse salmon-buff tipped gold.

Lady Isabel.—It is deep in build, with florets very regularly arranged, and of fine form. Colour silvery-blush. A fine new incurved variety.

Georgiana Pitcher.—A Japanese-incurved. Very large florets, deeply grooved and very broad. A fine massive-looking variety. Colour pure pale canary-yellow, reverse silvery-yellow.

Marjory Kinder.—An incurving Japanese of large size, and evidently a Londoner's variety, being exhibited in fine form at Southwark Park. Colour a rich dazzling golden-yellow. Solid, compact blooms.

G. J. Warren.—A grand sport from the famous Mme. Carnot, and worthy of its parent, which it closely resembles in form, but varies in colour, which is a very pure pale shade of yellow. Will be certain to become a favourite with the exhibitors.

Sunstone.—A fine globular and incurving Japanese. Colour a fine shade of apricot-yellow.

Simplicity.—This, like the preceding, is of American origin. It belongs to the Japanese section, and has long, drooping florets. Colour beautiful clear snowy-white.

Mrs. Hermann Kloss.—A large Japanese flower with long spreading florets. Colour a very rich shade of warm golden terra-cotta tipped gold,

Mrs. P. R. Dunn.—Japanese-Anemone, flat guard florets, white disc, slightly tinted, large blooms.

Mabel Miller.—Of the same type, creamy-white guard florets, blooms rather larger than the preceding, yellow centre.

Pride of Ryecroft.—A fine pale yellow sport from Nivums, and similar in form.

Mrs. Caterer.—A long-petalled drooping Japanese Anemone of good size. Colour pure white.

Western King.—Japanese-incurved, deeply grooved florets, large, beautiful waxy-white.

C. Harman Payne.

Japanese Anemones (*Countess*).—These are a very interesting and pretty class of flowers, and deserving of more attention than they now generally receive. The blooms you sent to us were not in the best condition, the guard florets being damaged almost beyond recognition. To the best of our knowledge the variety is known as Sir Walter Raleigh, and which is described as follows: pale blush guard florets, deeper coloured centre, large and well-formed disc; mid-season. As you ask for the same kind of flowers in pale and deep yellow, we are pleased to give a useful selection for your benefit as well as other readers of Gardening. The best of the colours you ask for are: John Bunyan, light-yellow guard florets, deepening in colour in the centre, the disc being high and well formed, good habit. Queen Elizabeth, lemon-yellow fluted guard petals, rich yellow disc. A very good sort is Sabine, with sulphur-yellow guard florets, and a primrose-yellow disc of fairly good form; mid-season. Other good sorts are: Madame Lawton, a variety having rosy-white guard petals and disc of yellow, a thoroughly good plant. Mons. Pankoucke, purplish-claret guard florets, with a disc of light claret, tipped bronzy-yellow; medium habit. Sœur Dorothée Souille has long guard florets of a light rose colour, and a disc of delicate blush, nice dwarf habit. W. W. Astor is another standard sort, giving large blooms with blush guard florets, the disc being yellow shaded rose, and of good form. Equally good and of immense size is Rider Haggard, with long guard florets of a pretty shade of soft pink, and a disc of a rose colour, shaded yellow. A pleasing change will be found in Enterprise, this variety having ray florets of light rose and a sulphur-yellow disc, a free-growing plant. Souvenir de Madame Blandinieres, a large flower with light crimson ray florets, the disc being of the same colour, tipped white at times. Robin Adair is a bloom of exquisite form, having blush-white guard florets, and a disc of blue-pink, tipped yellow; and for a final sort, Duchess of Westminster may safely be recommended. This flower has silvery-blush guard florets and a lilac disc; it is a good mid-season variety.

Six new incurved varieties (*Old Subscriber*).—At future exhibitions there is a great likelihood of the whole character of the stands of incurved blooms changing. Within the last year or two new incurved sorts have been admitted with the distinct trace of Japanese characteristics being well defined in the blooms. However, they are now recognised as representing this type of the flower, and they, with several novelties which have attained prominence this season, should be acquired by those interested. The following six new sorts are recommended. The place of honour must be given to: Mlle. Lucie Faure, an immense bloom with finely-incurved and pointed florets, building up a flower of great depth; colour creamy-white, sometimes tinted flesh-pink; late buds should be retained. Equally good is Lady Isabel, another deep and massive flower, with broad florets of good substance; colour pale blush, white centre, late buds developing blooms of delicate flesh-pink. Ernest Cannell also is remarkable for its massive build and neat, even form, petals somewhat pointed; colour a useful shade of buff-yellow. Mrs. N. Molyneux is another flower of great promise, and when finished is a bloom of large proportions; colour creamy-white. Mme. Ferlat, like the last-named, is a white flower, and a capital companion to such sorts as Chas. H. Curtis; the bloom is very large, medium petals tightly incurving, and one that is sure to be in request. And Mrs. W. C. Egan, a neat, incurved bloom of good size and beautiful form; colour rosy-pink, with white centre, altogether a very promising flower. Any reader willing to invest in the foregoing six varieties will find them invaluable at the next November shows, as they are not rough.

Sport from Avalanche (*W. J. Pearce*).—The bloom you sent us cannot be a sport from Avalanche, as we have never heard of a sport from a white flower running into one of a deep bronzy-yellow colour. We cannot help thinking that a mistake has been made somewhere. The florets are different in form, and the build of the bloom, too, is different to that variety, the foliage also being quite distinct. The flower does not look unlike M. Chas. Molin. A good piece of the stem and foliage should always be sent with a bloom requiring a name.

Chrysanthemums — nine Pompon sorts for exhibition (*Old Subscriber*).—These pretty little blossoms are likely to receive a larger share of attention than formerly, more especially from among the increasing number of amateur cultivators. It is really surprising they are not more largely grown for cut-flower purposes, as most of the sorts are of easy culture, free flowering, and of a useful size for all kinds of decorative purposes. The following sorts are selected for their all-round good qualities, as well as for the pleasing variation in colour they represent. The selection has been confined to the Pompons of nearly globular form, neat, and compact build, and the florets of one character. Pompon Anemone can be considered on another occasion. Premier position should be given to William Westlake, a golden-yellow dwarf, and free. The flowers are sometimes suffused red. William Kennedy is a bright crimson-amaranth, rather large, and on this account should be grown in a free manner. Mlle. Elise Dordan, soft lilac-pink, a pretty globular flower of exquisite and unique form. Prince of Orange, a lovely shade of light orange-amber, and a finely finished flower. Rubro

Perfecta, a large magenta-crimson, with rich bronze reverse; a grand exhibition flower. Osiris, rosy-purple shaded, petals tipped salmon; a beautiful flower. Maid of Kent, a pure white flower of good form. Pygmalion, a lovely deep rose flower, and a useful colour on the board. These, with Nellie Rainford, a beautiful buff-yellow, a very fine sort, make an interesting and useful selection for exhibition.

Six incurved for exhibition (*Old Subscriber*).—You cannot very well do better than grow the following. They have all been severely tested, and some have stood the test of time excellently: Chas. H. Curtis, colour rich golden-yellow, florets long and pointed, rather late buds; Mrs. R. C. Kingston, pale pink, a splendid flower of good form and large size; George Haigh, dull shade of rosy-carmine, being a sport from Robert Pitfield, Globe d'Or, pleasing shade of bronzy-buff, of good form, broad petals, rather early; Jeanne d'Arc, blush-white, tipped purple, large and deep in build, an easily grown sort; and Baron Hirsch, golden-buff inside of florets, rich crimson, large and good form, though rather early.

Six Japanese for exhibition (*Old Subscriber*).—If you do not mind incurring the expense of the newest sorts, we can confidently recommend the following six Japanese as being most likely to suit your requirements, as well as those of our readers similarly situated. It is somewhat difficult to include all we like, but after giving full consideration to diverse colouring in the stands, we think you could not very well do better: Madame Carnot, pure white, immense flower with long drooping florets; Yellow Madame Carnot, a pale yellow sport from the first-named, and invaluable as a show sort; Viviand Morel, large silvery mauve, an easy sort to grow; Australie, rosy-amaranth, silvery-white reverse; E. Molyneux, deep rich crimson-golden reverse; and Chas. Davis, a bronzy-rose sport from Viviand Morel, and equally easy to grow.

Chrysanthemums—nine Anemones for exhibition (*Old Subscriber*).—You do not say whether you wish us to confine the selection to either the large-flowered or the Japanese Anemone, or whether it is to be a proportion of each type. We therefore accept the latter as the correct interpretation of your request. Of the large-flowered, we recommend Junon, a blush-pink variety with a well-developed disc, this latter so important in a typical bloom; Mrs. Judge Benedict, a flower with rose-tinted guard florets and sulphur-yellow disc, of large size and good form; Gluck, golden-yellow guard florets and disc, and a popular exhibition sort, dwarf; Descartes, bright crimson-red, neat and regular disc, rather early, and wants catching at the right season, or it may be past its best at the show time. Buds rather late should meet the case, however. Of the Japanese Anemones the following are specially good: Sir Walter Raleigh, pale blush guard florets, deepening in colour in the disc; Queen Elizabeth, fluted ray florets of lemon-yellow, with rich yellow disc; John Bunyan, guard florets of light yellow, with a splendid high disc of a deeper shade of yellow; Enterprise, a lovely flower, with light rose guard petals, and disc of sulphur-yellow; and W. W. Astor, an extra large and fine flower, with blush guard florets, and disc of yellow, shaded rose. These should meet your needs, and are more reliable than many other beautiful sorts, which might otherwise be included in the selection. Regarding the culture of these flowers we can but recommend you to follow the instructions regularly and freely given in GARDENING, where all types of the flower receive a share of attention,

Chrysanthemum Princess Victoria.—This is an excellent variety for late cutting, its long white sprays of flower being very welcome. It is a reflexed creamy-white and of beautiful form; it bears a great resemblance to Avalanche, only it is much later. It may be obtained in flower about the third week in November by taking the first crown-bud, but then the flowers are not quite so pure as those which can be had at the end of December. To obtain sprays of this fine variety it must be left for the terminal buds, selecting four or five of the strongest buds to remain on the one stem. It is a most useful variety for decorations of all kinds when grown in this way.—W. J.

*** *For other Chrysanthemum replies see page 592.*

GARDEN WORK.*

Conservatory.

Cytisus racemosus, planted out either as a bush or on a wall, or over an arch, is nearly always in flower, and is a very useful plant, either for the moderately warm or the cool conservatory. Luculia gratissima, Habrothamnus fascicularis, are all, in their way, useful at this season. When properly managed the Camellia makes a beautiful wall plant. When grown, as I have seen it, covering a lofty wall with foliage of the darkest green, studded with blossoms of the brightest colours, the wonder is one so rarely sees the Camellia used in the conservatory for this purpose. In fact, the Camellia has gone out of fashion, like the Cape Heaths and the New Holland plants so common fifty years ago. The fragrance of Oranges, even when not in blossom, can be detected in the conservatory where they are grown, but where Oranges are grown there are generally some of the plants in bloom more or less in winter. The Seville Orange bears very freely. I have seen large trees very full of blossom in winter. Primula obconica grandiflora is another form of the old P. obconica. This plant has received a bad character from those who are susceptible to irritation of the skin, otherwise it would become one of the most popular room and window plants. Finish potting Pelargoniums. The market grower uses chiefly 5-inch pots, and very useful flowering stuff can be grown in that sized pot with the aid of stimulants when flower-buds are forming, but, in private places, any sized pot up to 11 inches in diameter is used. And very handsome specimens are produced in 11-inch pots; but it is time they were in their flowering-pots. Use the best loam in a rough turfy state, enriched with old cow-manure to the extent of one-fourth. Pot very firmly, and keep near the glass. In the old days houses were specially built for Pelargoniums, and the stages so arranged that the plants stood in the full light. A night temperature of 50 deg., and very careful watering, are essential to obtain best results. Cut down Chrysanthemums as they go out of bloom. Put in cuttings where they can be had. It is never wise to neglect good, strong, healthy cuttings. It may be necessary to vaporise to keep down insects.

Forcing House.

The busy time for this house has come now. There will be a legion of flowering plants waiting for the genial warmth of the forcing-house to bring out their blossoms. Where a mixture of things are worked in the same house it is better not to run up the temperature too high. From 60 deg. to 65 deg. at night will be high enough, and give a little ventilation on bright days. On cold, windy days no ventilation will be required beyond what takes place through the laps of the glass and elsewhere. Use the syringe freely, but do not use hard water, and as soon as things begin to move vaporise to kill green-fly. If plants infested with insects are taken to the conservatory there will be no end of the trouble. In forcing, whether it be fruit or flowers, the most important consideration is the previous growth and ripening of the subjects forced. It is waste of time and material to attempt to force anything which has not been specially prepared for the work. For instance, a plant or shrub lifted from the open ground and placed in a pot will flower if brought on gently, but it will not bear a high temperature, and, even if it would, the flowers would be poor and not worth the trouble.

Mushroom House.

Fill up all spaces where beds can be made, but leave room for succession of Seakale, Rhubarb, and Chicory. If the building is well constructed the warmth from the beds will keep the temperature right without artificial heat until the frost comes. But no Mushroom-house ought to be altogether unheated. A flue run along will do if there is no boiler near.

Figs in Pots.

These are often grown in some other house where forcing is carried out. A night temperature of 50 degs. will do, to be increased as soon as the trees begin to move to 55 degs, and later on to 60 degs., and still later to 65 degs. Use the syringe freely, and moisten the balls with weak liquid-manure. See there is no brown-scale on the plants.

Cucumbers.

Seeds should be germinated speedily if the plants are to be robust. When they linger in too low a temperature the plants are not of much account; and, besides, they move so slowly now unless there is at least a temperature of 70 degs. or so. As soon as the seeds germinate keep the plants near the glass, and plant out as soon as they have formed rough leaves. In house culture Cucumbers should not be stopped until they have reached the top of house.

Window Gardening.

Cleanliness to foliage and pots is important always, but specially so in winter. Where much gas is burnt delicate plants should be taken to another room. The best gas-resisting plants are Aspidistras, Draccenas, India-rubbers, Aloes, Cactuses, Aralias. The Norfolk Island Pine (Araucaria excelsa) is a very handsome room plant, and, with Palms, are valuable in winter as well as in summer. No potting should be done now, and very little watering, but use the sponge often.

Outdoor Garden.

This season has been very suitable for autumn-sown Grass-seeds. New lawns seeded down about the middle of September are now beautifully green and full. Always sow plenty of seed, especially if there are trees on the land. To make a good lawn quickly, 4 bushels per acre should be sown, and it is very important that the land should be well prepared—*i.e.*, dug over and manured, if necessary, which it is generally. Worn or exhausted lawns should be dressed with something during the winter. A mixture of things is generally more serviceable than only one kind of manure. Superphosphate and nitrate, two of the former to one of nitrate, or say 4 lb. of superphosphate and 2 lb. of nitrate mixed with 1 bushel of burnt earth, passed through a half-inch sieve, will be a fine dressing per square rod for poor lawns. Less may do where only a little help is required. A cheap dressing may be had by mixing 1 bushel of soot with 1 bushel of burnt earth, and scatter it evenly. This will be sufficient for 2 square rods in extent. Where the lawn is not immediately under the window, a dressing of stable or cow-manure may be applied, and left till the first of March, drawing the bush harrow over occasionally. Make new walks. Plant Box and other edgings. Transplant deciduous trees and shrubs. Plant evergreen and other hedges. Neglected Thorn hedges may be cut now. Walks may be turned and drains put in order.

Fruit Garden.

In pruning wall-trees, especially Pears, thin out a few of the old spurs, especially in the centre of the trees where the leaves come small, and in consequence but few fruit-buds form. If it is necessary to remove an old tree, a large naked space is left on the wall, and the best way of filling it is, I think, to plant some trees which may be called a combination of the cordon and the Palmette Verrier. I have seen these five-branched trees do remarkably well, and they fill the walls much sooner than any other plan will do. This is a useful plan for small gardens, as a greater variety of fruits can be grown in a given space. Not only Pears, but Apples, Plums, and Cherries may be trained on the same principles. Well-prepared Strawberries in pots may be started at any time now for the first crop. Among the best forcing varieties are Vicomtesse de Thury and Royal Sovereign for earliest crops, to be followed by Sir J. Paxton and President. Dip the plants in a solution of Gishurst Compound, wetting all the leaves before taking them indoors. Do not water too freely till the blossoms appear and are setting. Of course, this does not mean they are to be left till dust-dry, or the young rootlets will suffer.

Vegetable Garden.

Take advantage of frosty weather to manipulate and wheel on manure. There is less waste when manure is dug into the land as it comes from the stable or piggery, but this can only be done in the winter when the land will have time to absorb the manure before the crop is planted. Certainly it is not good practice to plant anything on ground immediately after a lot of fresh rank manure has been turned in. In a garden and home where many waste matters are continually accumulating, I have found it best to combine the lot in one large heap of compost, and work it into this just when it is required, and in suitable quantities for each crop. No one manures for Carrots, Parsnips, Beet, or Salsify, but early Potatoes and all green crops should have a deep, well-manured land to work in. Brussels Sprouts are very fine this season. There are so many good strains of this useful vegetable about that there is no difficulty in obtaining fine Sprouts, especially if sown early in March and planted in May. Mushroom-beds must be made in a warm shed now, unless the shed is roomy enough to contain a number of beds, so that the combined warmth may keep up a temperature of 55 degs.

E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 6th.—Moved Spiræas, Rhododendron Cunninghami, Deutzias, Lily of the Valley, Solomon's Seal, and other plants prepared for forcing to warm-house. Stopped a lot of young plants of white and yellow Marguerites, and put in cuttings. Pricked off seedling Cyclamens into boxes. Will be kept on shelves near the glass in warm-house. Sowed Tomatoes and Cucumbers for planting in warm-houses after Christmas.

December 7th.—In pruning Vines in houses a lot of the best ripened shoots were selected for propagation. Gave early vinery borders inside a dressing of artificial manure mixed with turfy loam. We find repeated dressings of very stimulating manures are not desirable. Bone-meal and suchlike substances are used now, and finish off after with strong guano or nitrate. Still busy among the fruit-trees—pruning, training, washing.

December 8th.—Finished potting and boxing the last of the Narcissus. These really ought to have been done before, but after the early Chrysanthemums are over the pots are filled with Daffodils and Tulips; and 7-inch or 8-inch pots filled with Narcissus and Tulips of various kinds are very effective. Carted home a lot of leaves for making hot-beds. Started more early Potatoes in boxes for planting in frames after forced Asparagus. Moved a lot of Azalea Deutsche Perle to warm-house.

December 9th.—Planted more Ne Plus Ultra French Beans in pots in warm-house. Stopped and tied Cucumbers, also gave a light top-dressing of old turf and a little artificial-manure. We have a special mixture of artificials, several kinds mixed together. Took up more Asparagus for forcing. A part of the stock of plants has been covered with long litter to enable us to lift the roots if severe frost comes. The same course has been adopted with Seakale.

December 10th.—Pruned and trained Morello Cherries on north wall, and then syringed them freely with a strong solution of Sunlight-soap. Planted cuttings of Briers and Manettias for stocks for dwarf Roses. Pruned and trained Peach-trees in late-house. Put in cuttings of various Chrysanthemums. They are rooting in a frame in a house where a little warmth is used. Top-dressed tennis lawn with wood-ashes.

December 11th.—Moved several baskets of Epiphyllums in flower to the conservatory. Covered a bed of Fuchsias with old leaf-mould to preserve the crowns through the winter. Potted a few dozen Tuberoses just come to hand. Potted the last batch of Gladiolus (Bride). Divided and planted a lot of Michaelmas Daisies among the recently planted shrubs in a new arrangement.

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HOUSE AND WINDOW GARDENING.

GROWING HYACINTHS IN MOSS.

I send you a photograph showing a group of Hyacinths growing in a bowl filled with wet Moss, a method which will be found convenient for dwellers in cities who cannot easily obtain suitable soil for pot culture. The results are far more satisfactory than those obtained by culture in water only, probably because the slowly-decaying Moss is practically a manure. The effect, also, of a group of seven or eight flowers massed together is very fine, and I find that the best result is obtained by growing one variety in each bowl. The kind of Moss does not much matter. I use any that has been brought home during summer from the woods with Ferns, etc. It should be thoroughly soaked in water, and, after a gentle squeezing, the bowls should be two-thirds filled with it, firmly but not tightly pressed down. The Hyacinth bulbs are then laid upon it as closely as they can be placed, and clean gravel is packed between and over them till the crown alone is visible. The gravel is necessary to keep the bulbs in place, otherwise the roots will tilt them, and the future flower-stems will be leaning at all angles. The bowls are put away in a dark cupboard in an unheated room until an inch or more of growth has been made, when they are gradually brought to the light. They are best kept in the unheated room until the flowers show colour, and may then be removed to a sitting-room; but the longer they are kept away from the gas-laden atmosphere of a much used room the better. The Hyacinths photographed—which were grown in a rather smoky part of Glasgow—measured 16 inches from crown of bulb to top of spike, and subsequently reached 18 inches before fading. As regards the supply of water, the wet Moss is sufficient at first, but when the leaves begin to expand I give a good supply, always having more water than the Moss can absorb, so that some can be seen on tilting the bowl. When in full flower the Hyacinths seem to absorb a large quantity of water and a daily supply will be necessary. Should the flower-spikes require support, a thin slip of Bamboo stuck into the bulb itself is the simplest and neatest way, and it does not harm the bulb for future cultivation out-of-doors.

Wm. Goodwin.

Hyacinths growing in wet Moss. From a photograph by Mr. W. Goodwin, Lynedoch-street, Glasgow.

Cissus discolor (*Wynnstay*).—If you cut the plant back in spring it will break away freely. The trimmings might be made into cuttings, and if inserted in sandy soil and placed in a close case they will emit roots in about a fortnight. The plant grows well in ordinary soil so long as it is sweet and the pots well drained. During winter the plant should be kept on the dry side.

The mild weather.—As evidence of the extraordinary mildness of the past autumn, in many places shrubs, such as Berberis Darwini and various Spiræas, are full of bloom-buds, which will probably succumb to the first sharp frost. It will be interesting to note the effect of this at flowering time next year.—J.

ORCHIDS.

PLEIONES OR INDIAN CROCUSES.

When well grown these little gems are always welcome, and at this season of the year when Orchid flowers are scarce they not only form valuable decorative plants, but are useful for furnishing cut flowers. These plants are generally supposed to be difficult to grow, but this is not the case provided they get the proper treatment. It is not necessary to have special houses for them, as they will grow well in any intermediate-house in which there is a winter temperature fluctuating between 50 degs. and 60 degs. As regards the kinds, the following are all well worth adding to the collection. Pleione Lagenaria, P. concolor, P. præcox, P. maculata and its distinct variety alba. To those who are about to undertake the culture of these plants for the first time a few words of advice may prove useful. Immediately the flowers fade the plants should be repotted. On turning the plants out of their pots it will be found that a number of young roots are just starting away freely from the base of the green shoots. The greater part of the old soil should be carefully picked out, taking care not to injure the young tender roots.

Some growers advise pulling the bulbs apart and bedding them out an inch or so between each bulb; but there is no advantage in this, because when the bulbs are separated the roots very often get so bruised and injured that they do not always readily start away again. I have grown them successfully for several years without any disturbance of this kind, merely repotting them in a clump just as they are when turned out of the old pot. Either shallow pans or pots may be used, and they must be well crocked, for, being fond of plenty of water, it is necessary that it should pass quickly away. Over the crocks place a thin layer of Moss, over which a layer of the following compost should be firmly pressed in, filling up to within ½ inch of the rim of the pot: Fibrous loam, peat, and Sphagnum Moss in about equal parts, mixing with it a moderate quantity of coarse silver or river-sand. Place the bulbs upon the soil, and fill in around them with the roughest parts of the compost. For a few weeks after repotting Pleiones require but little water; the young shoots are liable to turn black if too much be given. When the new roots are seen pushing in and out of the compost they should be kept just moist, and as the young growths start away with vigour, the leaves assuming a dark green colour, then the amount of water may be gradually increased. After they have become thoroughly established they may receive almost unlimited supplies, and the plants will be greatly benefited by an application of weak liquid-manure water about once a week. Immediately the leaves commence to change colour and die down the manure-water must be discontinued and the amount of water gradually reduced.

The plants should be grown in the lightest position available in the house, and will require to be shaded only when the sun is exceptionally strong and bright. Everything should be done to induce the plants to make vigorous growth, upon which depends success. In the spring, when the plants are in full growth, they will be greatly benefited by syringing well up underneath the foliage several times each day, especially when the weather is warm and sunny. This will assist growth, and at the same time keep down red-spider, to the attacks of which Pleiones are liable.

When in bloom these plants may be taken into the dwelling-house, where they will keep fresh for a week or ten days; they will require no water at the root. If allowed to remain in the growing-house during the flowering period every care must be taken not to allow any moisture to settle upon the flowers, as the colours are liable to run and the blooms quickly damp off.

There is one variety of Pleione, P. humilis, which comes from a higher elevation than the rest, consequently it requires cooler treatment. The Odontoglossum-house is the most suitable place for it. It is a very pretty and distinct species, its distinct fringed labellum beautifully spotted, and sepals and petals of a bright rose, causing it to be greatly admired by all lovers of plant life.

W., *B.*

TREES AND SHRUBS.

BLUE HYDRANGEAS.

I was much interested in "P. U.'s" note on the above (page 551), and was glad to find that he has arrived at the conclusion that the variation in colour is largely a matter of chance, and that it can be assigned to no certain cause. I have for some years interested myself in this subject, and have long since held a similar opinion. Many will tell you that the blue shade is caused by the presence of iron in the soil. It is true that some Hydrangeas growing in such staple bear blue flowers, but many do not, and in a soil very heavily impregnated with iron, where a large quantity of Hydrangeas are grown, and where, if the "iron theory" were correct, every flower should be of a deep blue tint, only two out of many hundreds of plants produce blue blossoms. Other persons hold that growing the plants in shade will induce a blue colouring of the flowers; but, although blue flowers are often met with on shaded plants, bright blue flowers are not infrequently seen which have been grown in the sunshine, and the deepest blue blossoms that ever came under my notice were growing on the edge of a steep cliff overlooking the sea, where the plants were exposed to every gleam of sunshine. In this latter case the quantity of iron in the soil was infinitesimal. I have seen it lately mentioned that a dark, peaty, or boggy soil was necessary if blue flowers were wished for; but, though blue Hydrangeas may grow in such a medium, they grow as well in many others, as witness "P. U.'s" clayey gravel and the deep red South Devon loam. As "P. U." remarks, there is no certainty that the colour will be perpetuated, even if cuttings are taken from the bluest-flowered plants and are grown under precisely similar conditions of soil and situation. Time after time have I seen this done without a tinge of blue appearing on the blossoms of the progeny. Iron and alum, if applied to the plants, will often result in blue-tinged flowers. Yet sometimes plants are stubborn, and take no notice of these applications, the flowers remaining of the ordinary colour, whilst the blooms that show the blue tint often have a blotched appearance instead of the clear colour that is so deservedly admired. Occasionally large bushes may be seen bearing flowers, some of the typical colouring, some blue, and some of an intermediate shade. One giant plant that I know of has for some years borne creamy-pink flowers on one side and blue flowers on the other.

S. W. F.

—— With regard to your interesting article in Gardening on the above subject, it may prove to be of some interest to those of your readers who may be growers of the blue Hydrangea to know that I have induced plants which once produced the common creamy-white trusses of flower to give those of a delightful shade of blue by a very simple treatment. I kept the plants somewhat starved, and watered occasionally when growing with water taken from an old iron rain-water tank, the water from which was almost blood-red. There is no doubt in my mind that the presence of iron, especially during the growing season, has the effect of changing the colour of these flowers.—George W. Symes.

LATE-FLOWERING TREES AND SHRUBS.

Unfortunately, there are not many of these sufficiently hardy to withstand the severity of our winters; there are, however, a few favoured places where some succeed fairly well, and where this is so they deserve to be planted more extensively. What could look more beautiful than a good clump of Clethra alnifolia? When well grown, at this season of the year it is covered with slender spikes of white flowers. Here it has grown to a good-sized bush, is perfectly hardy, and flowers freely every year. Again, the Rhus Cotinus, or Venetian Sumach, is a most interesting plant at this time of the year, yet how little of it is to be found. One may go to a score of places and not see a plant, although it is so hardy and will grow almost anywhere. Planted alongside our woodland walks or in clumps on the lawn it is quite at home. When grown in the full sun and sheltered from the north and north-east its peculiar flowers make a fine show for a long time, as they are then of a much deeper colour. With me it grows uncommonly well, not suffering in the least from the winter's blasts. Rhus typhina and some other species also make a good show, particularly when allowed sufficient room to develop, their large foliage contrasting well with the flowers. Pavia macrostachya is also very showy, as its long spikes of white flowers, which are produced on the points of the growths, standing erect, form a peculiar feature just now, as most trees around are devoid of flowers. This grows well in some places and flowers freely. Catalpa bignonioides is not perfectly hardy in all places. With me it has grown to the height of 20 feet or more, and usually blooms freely, but often in severe winters the points of the young shoots are destroyed by frost. Where the tree does well the large foliage is attractive even when it is not in flower, and it is deserving of a place in our gardens on that account. There are a few sheltered places in the south where Myrtles grow most luxuriantly, and when in bloom they are very attractive. Some plants growing against a wall at Arundel Castle are flowering most profusely this season, likewise the Punica granatum and Solanum jasminoides. It is, however, only in such favoured spots they are to be found growing in the open. The Magnolia-trees growing in the open at this place were cut back by the severe frost in 1895; they are, however, recovering and many of them flowered freely. Desfontainea spinosa for some years grew and flowered most profusely in the gardens here, having withstood several severe winters, but it succumbed a few years ago. Where this does well it is a most interesting plant, flowering at a time when few outdoor shrubs do. In some places Escallonia montevidensis flourishes admirably, and where this is the case there are but few autumn-flowering shrubs that make such a display, the large trusses of bloom being produced in such profusion on the young shoots. With me the plants, though grown to a good size, perished by the late frost two seasons ago. Dimorphanthus mandschuricus is also a free autumnal-flowering plant, and, like the Sumach, has large foliage. For making a bold display few things are more useful when planted in groups alongside the woodland walks; being quite hardy, they might be planted in such places more generally, particularly on sloping banks not far from the margins of lakes. Olearia Haasti is also a free-flowering plant that might be more extensively grown, for, being of compact habit, it might be used where others of more robust growth could not be employed. Abelia rupestris is also a plant well worthy of notice, particularly where it does well, as it continues to bloom till cut down by the frost in autumn. Sometimes Christmas is with us before its last flowers disappear.

P.

IVY UNDER TREES.

Where it is desirable to cover the ground under trees in pleasure grounds, and it is found that Grass will not grow (and this is generally the case), nothing can be better than Ivy. If this is skilfully planted in the first place, and care be taken to train it properly over the ground the first season or two, it will be found to give satisfaction in most cases. Although it may be considered to be a very curious kind of underwood, seeing that it is a climber, it is, nevertheless, one of the best possible carpets for ground under large trees. Planters should bear in mind that close to the stems of these there can be no moisture or nourishment. Notwithstanding this, however, holes are sometimes dug close to trees, when, as a matter of course, the plants set therein fail. The only way to make a good carpet of verdure under large trees standing singly or in groups is to make the holes for the plants outside the drip of, and if possible clear of, the extreme points of the branches; thus situated, the Ivy roots will have the benefit of the sun, and rain, and dew moisture. Care must, however, be taken to keep the roots free from drip from the points of the branches, for Ivy, like most other plants, is very impatient of drip falling upon its roots. To procure a quick and satisfactory carpet, the Ivy must be planted from 3 feet to 5 feet apart. Make the holes for the roots large enough to hold about one or two bushels of fresh loamy soil, enriched with a little rotten-manure. After planting and firming the soil well, give each plant a good soaking of water if the ground is dry. It will be found more profitable to plant strong, well-rooted plants than weak ones, and those growing in pots, if required to be planted during the summer months, should be selected. The points of the shoots must be directed inwards, pegging them down until they reach the trunk of the tree. In this way a smooth, green carpet of foliage will be speedily formed. No matter how barren the ground under the trees may be the Ivy will grow and progress rapidly if the roots are provided for in the way just described. Another good effect of Ivy so placed is that it will kill all weeds as soon as it assumes the lead. When thoroughly established the points of the young growths will need cutting in to keep it close and compact. Sometimes Barberries are planted at intervals in the Ivy carpet, and with good effect, the yellow flowers contrasting well with the green Ivy leaves underneath the spreading branches of a deciduous Oak or a specimen Cedar. St. John's Wort, when planted close to the edge of the Ivy, forms a good companion to it, growing dwarf and flowering freely. Butcher's Broom may also be planted with good effect near the edge of the Ivy carpet. It will grow in any soil and in almost any position.

B. H.

Eucalyptus *(Campagna).*—As the plant is 12 feet high great care will have to be exercised in its removal. It is by no means a good shrub to shift even in a small state, but when it reaches 10 feet or so in height the difficulty is considerably increased. The plant must be lifted with a good ball of earth, the whole of the fibrous roots preserved, and if the distance that it has to be carried is very great a mat should be tied round the roots to prevent them from becoming dried up by the wind. The plant must not under any circumstances be disturbed during frosty weather. You would find it much better to get a small packet of seed and sow it in the spring. The seed can be purchased for a few pence.

Pruning Syringas.—You said lately that Syringas should be pruned after flowering. We cut in two about the beginning of November. Will it prevent their flowering?—R. S.

*** Your Syringas ought not to have been pruned in November, but if they have not been barbarously treated they may carry a few panicles of flowers next year. The early part of June is the best time to attend to the pruning of Syringas.

Aralias and India-rubber plant (*Aralia*).—You will have very little difficulty in raising a stock of young plants if the seed is sown in light soil and placed in a frame in a warm part of the garden. The seed should be covered with fine soil and kept moist by occasionally watering with a fine-rose water-pot. When the seedlings are large enough to handle they should be potted off into small thumb-pots and shifted into larger pots, according to size and vigour of the plants. With regard to the India-rubber plant which has outgrown its bounds, it would be advisable to strike a few cuttings in spring, but we presume you have not got a house or frame sufficiently hot to strike them with ease. We should therefore recommend you to make a slit in the branches a foot or so from the points of the growths, and press in and round it a mixture of damp Sphagnum Moss and sand. This should be tied by means of matting, and never allowed to become dry. In a few weeks' time the Moss will be well filled with roots, and then the tops may be severed from the plants and transferred to soil in a pot. For a little time the plants should be protected from the sun, as they will be apt to flag until the roots have got hold of the new soil.

Moving Rhododendron *(A Constant French Reader)*.—We should recommend you to lift the Rhododendron and plant it in a pot now so as to encourage it to make a few fresh roots prior to planting it in Jersey. When potted stand the plant in a sheltered part of the garden.

Narcissi from Cornwall.—Thinking it might be interesting to the readers of Gardening Illustrated, I picked the enclosed Narcissi on border out-of-doors this morning to show you the mildness of the climate in this part of Cornwall.—Jas. Willcock, *The Mount Gardens Cornwall.*

*** A gathering of the Scilly White Narcissi.

OUTDOOR PLANTS.

THE FORGET-ME-NOTS.

Perhaps no flowers are more alike in the colours and general appearance of the different sorts; from the first to the last all are so distinctly Forget-me-nots that a child would know the flowers at a glance. We mention this because one is almost compelled to speak of the varieties by comparison. In this case we have a world-wide favourite as a type, with a great family likeness running through all the members, so that it may be the readiest way of conveying an ideal by relative descriptions.

Common as Forget-me-nots are, the species and varieties of Myosotis have proved a tangle in the hands of botanists, as evidenced by the many synonyms registered under one description or species, and to-day many of us are not quite certain what some of our plants really are, and it is also notorious that in commerce one cannot depend on always getting the one kind of plant under the same or a given name. We have now especially in mind M. rupicola, alpestris, and azorica. As a matter of fact these, from a gardener's point of view, are very different plants.

Wood Forget-me-not (M. sylvatica) may be said to head the group comprising alpestris, rupicola, and several garden varieties. It comes from northern parts or high habitats as regards its varied forms, though its name would imply shady or wooded habitats. No doubt the type will attain the higher stature of 1½ feet in such places; it is biennial or an indifferent perennial, and by no means one of the best for garden purposes, and only mentioned now because of its typical character. This, however, does not apply to the commonest form, which, employed as an annual for bedding, is effective in masses.

Alpine Forget-me-not (Myosotis alpestris) showing habit.

Alpine Forget-me-not (M. alpestris) is one of the most beautiful of the family, very dwarf, compact, a free bloomer, of high colour, and lasting a long time in flower. With me it grows 4 inches to 8 inches high in moist places, and proves a fairly good perennial, losing all its foliage in autumn. Though the plant is much smaller, the flowers are larger than those of M. sylvatica; no rock garden can be complete without this gem.

Mountain Forget-me-not (M. rupicola) is a name often applied to the foregoing plants, and said to be a synonym, but there are many forms of it. M. Princess Maud is a variety of alpestris, but it remains to be seen whether it is permanent.

M. azorica is 6 inches to 9 inches high, with a sturdy habit and good-sized flowers without the coloured "eye." It is a late or summer bloomer and lasts a long time. It may be readily known by its broader leaves, and it is evergreen. Without doubt, it is a tender plant for northern parts. It is said there is a white form of it, and another variety is the well-known Impératrice Elizabeth.

Early Forget-me-not (M. dissitiflora) much resembles sylvatica, but is less in stature and has larger flowers produced in early spring. There are well-marked differences, but they are mostly of a botanical nature. It is perennial and a Swiss species, widely cultivated now.

Flowers of the common Forget-me-not (Myosotis palustris).

Common Forget-me-not (M. palustris) is the species to which the name Forget-me-not specially belongs. It is a British plant, but proves most useful in gardens, where it makes a pretty display for several months from spring to summer. It has a creeping habit, but in its marshy habitats will often grow a foot high. It likes a moist place. Belonging to the same group is

M. cæspitosa (Schultz), a type from northern regions. We only mention it to introduce a variety of it called M. Rechsteineri, a lovely dense and minute creeper from the Lake of Geneva. We should like to strongly urge the use of this for moist ledges or seams of rockwork, where it makes matted tufts of pale green herbage, and in early summer sends up numerous little racemes of turquoise-blue flowers of proportionally large size, barely 2 inches from the ground. It is one of the best carpet plants for bulbous things in the rock garden, and quite a thing to be proud of. As its roots get somewhat bare, top-dressings of loam and leaf-mould mixed with a little sand should be applied. In suitable situations it spreads pretty freely and is easily propagated; hence its value as a carpet plant. We have, however, lost plants in very damp winters, and cover from wet would be helpful in keeping it healthy; otherwise it is a plant of capital constitution, with no very special requirements.

Flowers of Alpine Forget-me-not.

There is perhaps one point of culture worthy of note, and it applies to the whole family without an exception. If the Forget-me-nots are in moist and rich soil, not too heavy, they not only do not need shade, but in all respects are better in the open, the plants sturdier and more free flowering. Those of a tender constitution like azorica should have either protection or warm nooks.

The Kew list of Myosotis is as follows: M. alpestris (synonym M. rupicola), M. arvensis, M. cæspitosa and its variety, Rechsteineri, M.

Flowers of Early Forget-me-not (M. dissitiflora).

collina, M. macrantha (synonym Exarrhena macrantha), M. palustris, N. robusta grandiflora, M. semperflorens, M. sylvatica, and its variety compacta nana, and M. Welwitschi.

Double Violets in pots.—I have some plants of double Violets — Comte de Brazza, Marie Louise, etc.—which I bought in 5-inch pots. They were planted in a cold frame, which gets no sun at all during the day, and they are not making growth. They get all the air possible during the day, and the glass is only put on during heavy rain. I think of very carefully lifting them and potting them into 6-inch pots, as then I could stand them in the front of the house, which gets the sun, sheltering them in sharp, frosty weather only. I want to know if I can follow this plan with any hopes of getting any flowers at all? I shall be most grateful for your opinion.—Archie.

Myosotis dissitiflora (showing habit).

*** "Archie" does not say when he bought the pots of double Violets or when he planted them in the cold frame. A frame that gets absolutely no sun is certainly ill-adapted to the winter culture of Violets; but it is very late to shift the plants now, as, thus late in the year, there is little or no root action, and the plants would not get hold of the fresh soil until the days began to lengthen, and, consequently, few flowers could be expected before the spring. We should advise "Archie" to leave the plants where they are till the end of April, and then to divide them, planting the sections and runners in well-prepared ground, about a foot apart. They should be given a mulch of decayed manure in the early summer, and be watered if the weather be very dry. All runners should be picked off as they form, and by September they should be strong clumps, well set with flower-buds, when they may be lifted and potted, and in the greenhouse should flower well.—S. W. F.

DRACÆNA GOLDIEANA.

This fine species stands out quite unique from the rest of the members of this extensive family of fine-foliaged plants. It was introduced into this country about twenty-five years ago, and first put into commerce by Mr. Wm. Bull, of Chelsea. It is a native of Western Tropical Africa. Some doubts were expressed by botanists after its introduction as to whether it would prove to be a true Dracæna, but this was settled as soon as the plant flowered. Although it has reached the flowering stage, I do not think any attempts have been made to intercross it with another species; if so, the fact has entirely escaped my notice. Being so distinct from any other species, it is most valuable, making a beautiful vase or table plant when well grown. Compared with most kinds

A variegated Dracæna (D. Goldieana).

it is of a slower growth, but more lasting in its character, the foliage being stouter and of greater substance. It is not a difficult plant to cultivate when a healthy plant is once obtained. If purchased in a small state, it takes some little time before it is fit for use other than as an object of interest and beauty in the stove itself. When a plant is large enough to use upon the dinner-table it makes quite a change, being seen to the best advantage, I think, as a central object upon a round table. I have used it thus, and that repeatedly without injury, but being a rather tender species it is more susceptible to injury than most kinds from being in a cold room or house. In order to propagate it successfully a different mode of procedure to that usually adopted has to be pursued. It does not propagate so kindly from eyes as most kinds, coming in this respect under the same category as D. gracilis or D. marginata. My plan has been to cut off the top, when a plant becomes too tall or leggy, at a convenient height, inserting it in a 2½-inch pot and plunging in a brisk heat in the propagating-pit. Thus far the plan adopted does not vary from that at times followed with other sorts as to striking, but after the top has been taken every care is needed to preserve the old stool intact. This will break forth afresh at the top, generally one shoot, which in its turn when large enough may be taken off for striking. It is these lateral shoots which make the most compact plants, whilst they strike as readily, or even more so, than the top has done previously. Other shoots will follow in due course if the old stool is kept in good health, and by this means a stock can be steadily worked up. For my own part, I have found it best to use a rather more peaty soil than for the stronger growers, the roots being much finer, which of itself seems to indicate this variation, whilst it does not need quite so liberal a treatment as to watering. Care must be taken not to overpot it, otherwise the roots will be liable to suffer. It does not appear to suffer from the attacks of the thrips peculiar to Dracænas nearly so much as other sorts, but occasional spongings will add much to its appearance. Its novel marking, banded and marbled in an irregular manner with dark green and silvery-grey, gives it when in good character a decidedly handsome appearance, whilst the back of the unfolded leaves is of a pale reddish-purple, which further adds to its beauty.

The illustration gives an excellent idea of its effect when seen grouped together, for this must not be taken as that of one plant, but of several together, dwarf plants surrounding the taller one. H.

FRUIT.

APPLES AND PEARS FOR SMALL GARDENS.

The selection of suitable kinds of Apples and Pears to plant is a matter of much importance to all fruit growers, and to none more so than the occupiers of small gardens, such as those that are often attached to fair-sized private residences around the suburbs of many of the large and small towns in this country. It is a custom with some builders of houses to plant the garden of a villa residence with any kinds of fruit and other trees that can be bought at a cheap rate, caring little or nothing about suitability, and when the tenant plants, he, in many cases, buys the sorts recommended by a nurseryman. The result may sometimes be all very well—good fruit will be produced, but unless the varieties are selected with a view to their general usefulness and free-bearing properties disappointment must be the result. It must be borne in mind when arranging a small garden that strict attention to the best kinds of fruits for general purposes becomes necessary, from the fact that for want of space only a limited quantity can be planted. In

Selecting Apples a main consideration should be to obtain one or two varieties most valuable during the winter and early spring months, when little else in the way of fruit is obtainable from the garden, either for dessert or cooking purposes. Early sorts are scarcely so valuable in a small garden, as other fruit is generally plentiful during the autumn months, and it is also not desirable to overburden the garden with sorts of Apples and Pears that are of short duration—*i. e.*, to be used quickly—in order to have a fairly good supply during the winter. The

Position and treatment are points demanding attention, and, as it should be the aim of all owners of small gardens to economise space as much as possible, it is well to employ iron wire trellises, or frames, 7 feet high. By training branches of Apple or Pear-trees along these space will be economised and a pleasant interest maintained during the summer months. Such a contrivance (trellis or frame) is well suited to upright or oblique cordons. Care must be taken to ensure for the roots a good run in well-drained soil of good quality—of a loamy character, if possible, as this will generally ensure there being plenty of fibrous feeders in the ground, and, with this most important end in view, the trees should be obtained from a nursery, the soil of which is favourable to the production of healthy, fibrous roots. If it is proposed to plant the trees in lines, a border 5 feet wide and 3 feet deep will be ample space to devote to trees of moderate size. If the subsoil is one likely to be unfavourable to the well-being of the trees, it might be wise to have a layer of concrete at the bottom, to prevent the roots penetrating in a downward direction; the concrete bed should have a fall in one direction to allow the surplus water to escape. By the adoption of this mode, where it is absolutely required—and it is both simple and inexpensive—the necessary means may be obtained for operating on the roots in any way that may be thought expedient. Should any tree be growing too freely, it may, under this system, be readily thrown into a moderate state of growth by cutting off some of its roots; or, in other words, curtailing the supplies of food. No well-regulated fruit-tree requires much use of the knife. All the head-pruning required is to cut away any cross shoots that inconveniently crowd the tree at the end of the summer, and follow up during that season the routine of finger-and-thumb pruning, which is easily accomplished when the shoots are young. The best time for root-pruning is soon after the fruit is gathered.

Planting is the next matter. The best time to plant fruit-trees is in autumn—say the last week in October or a little earlier. Care should be taken not to cover the roots too deeply in the soil. In planting, the small, fibrous roots should be carefully spread out, the coarse roots having been previously shortened back, or any injured roots removed with a sharp knife. If the soil be naturally good and generous no manure need be added. If the soil be poor some well-decayed manure can be mixed with it at

planting-time. If the soil be a wet one then the trees should be planted nearly on the surface of the soil, and a mound of earth should be placed over the roots. The trees may be placed about 8 feet apart. Here are some good varieties of

Dessert Apples, in order of ripening, which may be grown as espaliers, standards, cordons, or pyramids—viz, Irish Peach, Red Quarrenden, for July, August, and September; Golden Pippin and Worcester Pearmain, September to October; Margil, Ribston Pippin and Cox's Orange Pippin, for October to January; Ashmead's Kernel, December to February; and Redleaf Russet, Golden Harvey, and Sturmer Pippin, from February to May. Of kitchen Apples take the following dozen sorts—Gravenstein, August and September; Lord Suffield, Cox's Pomona, Blenheim Orange, and Stone or Loddington Seedling, for September and October; New Hawthornden, Golden Noble, and Wellington, for November and December; Warner's King and Lord Derby, January to February; and Calville Malingre, from March to May. The following dozen Pears will be found a very suitable selection—Beurré de l'Assomption, July and August; Louise Bonne of Jersey, Marie Louise, Pitmaston Duchess, Emile d'Heyst, Beurré Superfin, Winter Nelis, Doyenné du Comice, and Knight's Monarch, October to December; Josephine de Malines and Olivier de Serres, January to March; L'Inconnue and Easter Beurré, March to May. B. H.

Fruit-trees failing (*Melbourne*).—No doubt your garden site in Flintshire is a cold one, and if very much exposed to fierce winds trees would suffer. It seems to be a case in which some protection from cold winds is needed. Can you plant on the windward side Dutch Poplars 6 feet apart, and let them grow fast; and some 8 feet in front of them a row of Scotch and Spruce, first alternated? When these trees grow up, as they soon would, they would give great protection. As to varieties of Apples and Pears, we should advise you to plant only very hardy varieties. Among Apples plant Keswick Codlin, Blenheim Pippin, Bramley's Seedling, and Newton Wonder, cooking; and Fearn's Pippin, Irish Peach, and Sturmer Pippin, eating Apples. Of Pears, common sorts, such as Hessle, Gros Calebasse, Beurré de Capenmont, eating; and Catillac, baking. Of Plums, River's Early Prolific, Gisborne, Czar, and Victoria. These are all fairly hardy. All the same, you might inquire of any person who had fairly good trees in the district what varieties did well with them, and plant the same. As your soil is stiff clay, it is not at all the best for fruit. Still, we think you might overcome that trouble a good deal if you would, in selecting positions for the trees, first dig up the places about 4 feet over and level them down neatly; then get a few loads of road-trimmings, or any lighter and gritty matter, and draw that on to the ground; then plant the trees very carefully, setting the roots out evenly, right on the soil, not making holes, placing 2 inches or 3 inches of the new soil over them, and adding 3 inches more from round about the tree. Thus each tree will be on a small mound. Of course, trees so planted must be very securely staked and tied, though not too tightly.

Planting orchard (*C. W.*).—It is difficult to give a brief answer to so many queries. Your site for orchard, being an exposed one, indicates the need for some shelter on the north-east side, if that be the open one. A row of Scotch and Spruce Firs would in time furnish that. Next it plant a row of Farleigh Prolific Damson standards. Your Apples and Pears would be best as bush-trees, as these are less liable to harm from winds. Your selection of Apples seems very good, but on the lowest side of the slope you may plant King of the Pippins and Cox's Orange Pippin to give good quality for eating. The best Pears would be Williams' Bon Chrétien, Louise Bonne, Fertility, and Alexandre Lambre, all bush-trees. You might intermix a few half-standard Victoria Plums, also rather towards the bottom. As your soil is shallow, and you propose to dig out holes and replace the soil taken out with better mould, the result would be that whilst the tree-roots might get a good start in this fresh soil, so soon as they get out of it into the old or shallow soil they would find no food and much poverty; then the trees would go back. To obviate that, you would have to open a trench 2 feet wide all round the holes, breaking up the soil deep, adding some fresh or well-decayed manure, and filling up again. That operation would have to be extended every two or three years, and then in time you would get the whole of your ground into capital condition. See that the newly-planted trees are securely staked.

FRUIT-TREES OVER WALKS.

I have often thought that in many gardens where espalier training is adopted—and a capital system it is—the trees are too much cramped by the espaliers being too low. Especially is this the case where both soil and climate are fairly suitable for fruit culture. In inferior soils it may be necessary to restrict growth, in order to retain sufficient control over the trees to secure fertility, but in favourable situations it would certainly pay better to allow a fuller and freer development. As a rule, espaliers are pretty much the same height everywhere, and the soils that are capable of developing and sustaining large fertile trees are placed on the same level as those of an inferior character where the trees are short-lived. It may be said, of course, that the trees should be planted wider apart, and so permitted to extend themselves laterally, and this is done, no doubt, to some extent; but espaliers might be raised much higher than they now are, with advantage to the fruit crops, without any corresponding disadvantage worth serious consideration, as the shade will be only nominal. There are many light crops in summer that would be benefited by the partial shade of a line of espaliers. Were it not for the cost of erection, wire arches over the principal paths would be an interesting way of growing Pears and Apples, especially the former, and if they were trained as five-branched vertical cordons a good-sized arch would soon be covered, and if the arches were substantial there would be but little cost afterwards beyond an occasional coat or two of paint. Most of the work of training and attention to the trees could be carried out on the underside, with a pair of steps on the path, cleanly. The trees, of course, would be planted close to the edge on each side of the walk, without any intermediary borders. I was in a kitchen garden some time ago, where the centre path was covered with such an arch, on which was trained an interesting collection of Pear-trees, in capital health and condition. Not only may Pears and Apples be treated in this way, but some of the hardiest Plums and Cherries, as well as Gooseberries and Currants. This is an excellent plan for suburban gardens, where land is valuable, and the kitchen and fruit gardens must necessarily be small. If the fruits be trained over the walks the open squares or quarters could be wholly devoted to vegetable culture, unshaded but not altogether unsheltered by the fruit-trees. And in cold springs shelter of a simple, efficient kind might easily be applied to protect the blossoms. At any rate, to say the least of it, there would be as good a chance of securing a crop of fruit by this mode of training as any other. No doubt the first cost will deter many from attempting it, but those who are fond of their garden, and who wish to make the most of a small space, will find these fruit bowers or promenades exceedingly interesting and, in the end, profitable. H.

A fruit-tree covered way.

Apple Lady Henniker.—While many Apples which in trade catalogues are bracketed as both dessert and cooking are after all only fit for the kitchen, there are a few which well merit the double title; amongst these Lady Henniker is prominent. Grown either as an espalier or as an ordinary orchard tree in a sunny position, the fruit colours up handsomely, and is at the end of December and in January brisk and refreshing eaten in a raw state. It bears sooner as a standard than as an espalier, being a rather strong grower; but very fine fruits are produced by the latter system of training. Lady Henniker is a conical Apple, slightly ribbed, skin a delicate yellow, heavily flushed with crimson when the fruit is exposed to the sun. It is a good cooking Apple.—J.

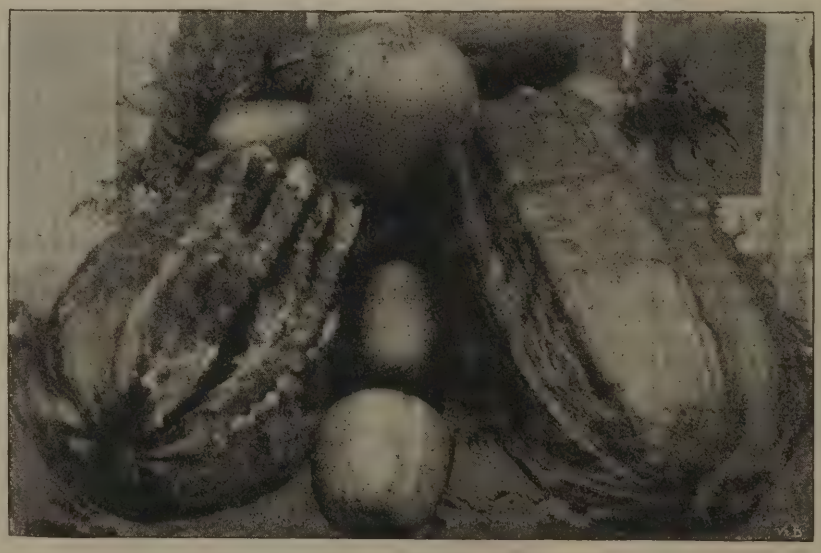
When winter comes.—Having been a frequent listener to arguments on the question of when the leaves of garden and orchard fruit-trees can be fairly said to have completely left the trees bare, I have kept careful observations for some years, and now send you the result in case you might consider it of any use. The aspect of my garden and orchard was entirely exposed to both north and east, and well open to south-west, and was situated in the Thames Valley. Most of the trees were Apples. 1890, leaves all off by Nov. 26; 1891, Nov. 23; 1892, Nov. 17; 1893, Nov. 23; 1894, Nov. 13; 1895, Nov. 14; 1896, Nov. 8. This year many leaves are still on and perfectly green in my present garden here.—C. A. C., *Arundel*.

THE KITCHEN GARDEN.

VEGETABLE MARROWS.

It may be thought what can anyone say in favour of this vegetable at the present time? Much may be done now to forward next year's plans to guard against failures and to get the best results. It will be seen in the illustration that several types of Marrows are represented, and here may be seen three or four of the best kinds and well grown. The large fruits shown are often much admired by amateurs. They are less value as a vegetable than smaller ones, and though the larger fruits are needed for special uses, such as drying for preserves and pickles, the smaller used as a vegetable make excellent dishes when well served. The Marrow, owing to its rapid and trailing growth, has been put to various uses in the garden and as a screen and cover for unsightly places; but used thus is not a fair test of its usefulness. To get the best results stopping and culture are needed. A few large fruits rob the plants, and these should never be allowed till the season is well advanced, so that the succession crop is not interfered with. If the plants are grown solely as a vegetable then the fruit should be cut small. Used thus the plants produce a much greater weight of fruit and yield longer.

The uses to which the Marrow can be put are many. One of the best is as a compôte, or used like preserved ginger. This latter is one of the best winter dessert dishes that can be prepared, and though it is necessary to have firm fruits (but not old) and carefully dry them, few vegetables can be compared to this when well done. I am unable to go into the preparation of the fruit, as it would take up too much space. Many of my readers will be better able to advise, but it is a matter amateurs may with advantage consider. In this country near towns fruit in winter is costly, and the Marrow is grown at so small cost that home-made preserves and compôtes are most useful. As a simple jam the Marrow is delicious, and here fair-sized fruits are needed. For this purpose the large, long varieties are best. In many places the Marrow is made into pickles. The best results in Marrow culture are not always obtained from plants allowed to grow too freely. The market gardener plants more closely than the amateur. But for use as a vegetable the fruits should always be cut before the seeds are formed—in fact, in such a state that the spoon will cut the pulp through when cooked. The fruits when used in a small state are more readily prepared—in fact, are best merely cut in half or served whole. The Marrow, when allowed to harden its seeds, is then past condition as a vegetable. This fact is overlooked by many. Also the plants are too frequently placed in out-of-the-way corners, so that fruits cannot form. Many drop or turn yellow before they swell, and in other cases the plant placed on too much manure runs so much to wood that very few fruits mature. At the start a little warmth is beneficial, but not, as is often the case, huge heaps of manure that cause a rank leaf-growth and very few fruits.



Several forms of the Vegetable Marrow. From a photograph by the Rev. G. Berens, Kevington, St. Mary Cray, Kent.

Varieties are numerous. Those shown in the illustration are principally the Long White, Striped Green, and the Prince Albert, and probably Muir's Marrow, but the last-mentioned should be quite round if well grown; it is very prolific. Long White is probably the best Marrow of the large section, and certainly one of the best flavoured. It is a splendid cropper, earlier than the green varieties, and when cut in a small state one of the best vegetables grown for jam or using in a dry state. Full-sized fruits of this variety are always the best. The plant is short-jointed—a great point in Marrow culture. Moore's Vegetable Cream is not unlike it in colour, but shorter. It has a yellow shade on the sunny side, and is noted for its flavour. The fruits are more ribbed than the Long White. Long Green or Striped is not unlike Long White except in colour, and is much liked on account of its distinct shape and markings. It is a favourite exhibition variety. Prince Albert is also a green-fruited variety, and a great trailer, being good for covering. It is a nice fruit, of medium size, fine quality, and a good cropper. Pen-y-Byd is a delicious little fruit, one of the best used as a vegetable in a young state. It is very prolific, like a Melon in shape, creamy-white, thick, firm flesh of delicate flavour. It is also called Muir's Variety. The Custards are not much grown. They are good cooked young, but so soon lose flavour if at all old. They are not large. The Bush or Cluster is also a small-fruiting variety of good quality, with dark green fruits. The plants are compact, bushy, not trailers, and very prolific and distinct.

W.

WINTER KALES.

During that period of the winter when we have autumn Cauliflowers in abundance, hardy Coleworts, and Brussels Sprouts, curled Kales are not highly regarded. It is when severe weather prevails, Cauliflowers are over, Coleworts and Cabbages have been hard frozen and spoilt, and perhaps snow lies thickly, that we learn to appreciate the merits as well as the distinctive sweetness of the hardy curled Kales. These greens seem to be so delicious when cut hard frozen, and, after being well washed in cold water, at once cooked and served up hot, we do not then scorn the delight of the Kale-pot. Then, later on, when even winter Broccolis are over and even Savoy Cabbages are scarce, there comes from out of the stems of these hardy Kales, after the heads have been cut, such a wealth of deliciously tender side-stems that they cannot be too highly prized. A not uncommon fault in connection with all winter Greens, Savoy Cabbages included, that are desired to give of their produce late in the winter, is sowing seed too early, so that plants either get drawn and leggy in the seed-beds or drills, or if put out early become unduly strong, so that they are less able to resist severe weather than later planted stuff is. Another not uncommon fault is planting out in rich deeply-worked soil. Then follows a very coarse and usually uneven growth, many of the plants in consequence being large-leaved and out of character. It is very much better to be planting out towards the end of July somewhat more closely than early planting will admit of, and in fairly firm soil, as always in such case stout, sturdy growth is secured, and such growth withstands severe weather the best. Now, of these winter Kales we have several diverse characters, and these again have numerous variations, arising mainly from selections made from time to time. Of sections, the best known is the Green Curled Scotch, of which there are several varieties, both tall and dwarf. Foremost amongst the tall comes Dobbie and Sons' "Victoria" Kale, a dense-headed, beautifully-curled stock; Cuthbertson's "Famous Strain," rather broader headed, and dark green in colour; Brydon's Selected Curled, a rather paler yet excellent strain; and Culrean Castle (Hurst), a very strong-growing, large-leaved, and broad-headed form. All these are distinct advances upon the old tall Scotch, and have, after trial at Chiswick Gardens, just been awarded high commendation by the R.H.S. fruit and vegetable committee. The Dwarf Green Curled, such as is seen in the market gardens, is the best of the dwarf section; that was not well represented at the Chiswick trial. Cottager's Kale is a tall, gross-growing form of purplish hue, very fine for late winter sprouting. The stock of this from C. Turner was excellent and highly commended. Another fine late and distinct broad-leaved Kale is Chou d'Milan, sometimes grown as Hundred-head. This is a first-rate April variety, its long side sprouts being most acceptable. The stock at Chiswick, from Watkins and Simpson, was also highly commended. The dwarf-growing Labrador, or Arctic Kales, of which there are both green and purple, were represented by the latter form only under the names of Exquisite and Dwarf Purple. These secured commendations only. They have the reputation of being very hardy. A capital stock and highly commended was Hurst and Sons' Late Hearting, of which form there are several stocks in commerce. These have somewhat broad-ribbed and fringed leaves and solid hearts, of the Savoy type, but should not be planted too early. A good variegated Kale from Veitch and Sons was also highly commended, but these forms chiefly have decorative value. It was interesting to note that all of the Asparagus or Buda Kale section, including Delamare, Ragged Jack, and Lapland, had all been destroyed by a worty fungus. It is well that such an attack is limited to Chiswick only. These dwarf Kales are of very delicious nature and always merit a place in the garden for winter use.

A. D.

November Peas.—So exceptionally mild has the season been up to now that everything in the garden seems to have taken a new lease of life. We have heard frequent accounts of spring and summer-flowering plants throwing up their blossoms in dull November, nor have the occupants of the kitchen garden been behind. On the 20th of November I partook of an excellent dish of Green Peas picked from the second cropping of the rows. The varieties were Late Queen and Ne Plus Ultra. Though not quite up to the standard of summer Peas, the flavour was good, and proved the excellence of these sorts for late use. Fortunate have those gardeners been this season who made a late sowing with the idea of the autumn chance crop, which so often fails, but, owing to the favourable caprice of our climate this season, has turned out a fine success.—H.

Drumhead Savoy *(T.)*.—There is but one proper Drumhead Savoy in commerce, and asked for under any name you would get this variety. It differs materially from the large Drumhead or Cattle Cabbage, which has larger heads and less curled leafage. To have the

Drumhead Savoy in good form seed should be sown early in April, and the plants got out into rows, 2 feet apart, early in July. The soil should have been deeply worked and well manured to enable full-sized heads to be produced by Christmas, which is quite early enough to have Savoys at their best.

ROSES.

ROSE BENNETT'S SEEDLING.

Of all the Ayrshire Roses Bennett's Seedling, or Thoresbyana, is one of the very best for arches and pillars. Introduced so far back as 1840, this, with Félicité-Perpetue (1828), are our hardiest and most useful Roses for a bleak situation. A very vigorous grower, free flowering, almost evergreen, and producing large bunches of semi-double, white blossoms.

Bennett's Seedling Rose over arches. From a photograph by Miss Willmott, Great Warley.

This is one of the oldest classes of Roses we have; for we had Gracilis in 1796, Amadis in 1829, The Queen in 1835, besides Dundee Rambler, to which we are unable to give date of introduction. The Ayrshire Roses do not need a rich compost; but at the same time must not be starved. Perhaps the greatest mistake made in this section or class is in pruning. To cut away a large quantity of the previous season's growth is only to sacrifice an immense amount of bloom, and practically render the plant flowerless. Strong growing—in fact, rampant—this Rose could scarcely be put to better use than as a climber over rough roots, an old hedge, pillar, or arch. We very seldom find it affected with red-rust or mildew. The large trusses of buds make up well in decoration, especially when they are bursting and the deep carmine tinge is prominent. Individually the blossoms are not of much merit; but collectively we know of few more showy or decorative Roses than Bennett's Seedling. Their only fault is a very short season of bloom. They are in flower for about three weeks only, whereas the "Dijon" Teas bloom until the autumn.

TEA ROSE MADAME CHARLES.

As in so many other things, there is a wonderful variety among Tea Roses, and varieties that open well in our country are not many. There is first the drawback that very double kinds will not open in coldish, wet summers, however fine in warmer countries; and there is again the curious fact to be considered that all these plants are forced to grow one way—*i e*, they are grafted, rightly or wrongly (we say nothing about its merits). In such a wide range of forms as the Tea Roses it must surely be that they will not all take equally well to the same wild stock, and that it would take some patient trials to find out what suits any particular kind best. As things are, we find a great many Tea Roses on the Brier-stock, which, however well treated, remain stationary or go back. It cannot always be owing to their tenderness, because the hardest winter frosts do not kill them, but the plant is as if in some way paralysed.

But taking things as they are and among the kinds that do well—*i.e.*, which give a good result in the usual way in the average cool soil—we have never found anything more satisfactory, constant, or finer than this Rose. We have tried it for several years, and it is always the same hardy, patient bloomer, with noble buds and flowers, and the colour is lovely.

This beautiful Rose, introduced by Damaizin upwards of thirty years ago, is well worth a place in every collection. It is not by any means a show Rose, albeit at times, especially in a cool season, a wondrously beautiful high-centred flower is produced. It is said to be a seedling from Mme. Damaizin, but its habit points rather to Safrano as its parent; in fact, it may be described as a strong-growing Safrano. Perhaps the great attraction of this variety is to be found in its lovely elongated buds of a charming apricot tint, much superior to that of Mme. Falcot. The apricot colour is generally suffused with a vivid orange shade, so rare and yet so much admired. This Rose has one bad defect, and that is its habit of quartering, but it amply atones for this in its freedom of growth and abundance of bloom. The pretty buds are in much request for button-holes, bouquets, etc. It makes an excellent pot Rose, especially for flowering in late autumn and early winter, when more double Roses would be difficult to open. If a low south wall were available Mme. Charles would do splendidly upon such a position, and if well fed with liquid-manure in the early summer the gorgeous colour of this Rose would be much intensified. Many of these Tea Roses, of which Mme. Charles, Mme. Lambard, Bridesmaid, and Mme. A. Chatenay are representative, would make fine semi-climbers for greenhouse or conservatory decoration, and would oftimes give more satisfaction than the rampant climbers, as they are more continuous flowering and afford less shade to the other occupants. A small tub or large pot should be well drained and filled with compost of rough loam, a little well-decayed cow-manure and leaf-mould, and some bone-meal. Into this put what nurserymen term an extra-sized plant, and place the pot or tub upon the stage, training the shoots of the Rose on to the roof. Very little pruning will be required, simply thinning out crowded growths. It is surprising the quantity of useful blossoms such plants will yield, and, given a rest of a week or two in the summertime, one may be sure of some flowers from these Roses the greater part of the year.

Treatment of Marechal Niel Rose in pot *(Constant Reader).*—An 8-inch pot is

scarcely large enough for a Rose carrying growths of 12 feet. We would give such a plant a double shift or put it into a tub or box. You may safely cut off the last 2 feet of growth when ripened, but not earlier. Wait until the plant has ripened before repotting now. Such growth as you mention should give you a good show of flower from almost every eye next spring.

Obtaining new Roses *(Isobel).*—A new Rose is obtained by cross-fertilising flowers of different species or varieties. For example, the Hybrid Teas are raised from seed obtained by crossing a Hybrid Perpetual and a Tea or Noisette variety. Many of our finest Roses have been obtained by cross-fertilisation, but to get one of sufficient merit to rank among the splendid varieties now in cultivation needs a great deal of patience and time. A second source of "new" Roses is from "sports" or freaks. A shoot appears upon the plant carrying a totally distinct blossom, and by carefully budding or grafting the eyes immediately below such a flower we often succeed in fixing the sport, after which it is easy to increase the number of plants. Careful selection and hybridisation have done much towards the improvement of most flowers and plants.

Roses under glass *(B. Scholfield).*—We would advise that your border be enriched, and the following three climbers planted to grow up the roof: Reine Marie Henriette, red; William Allen Richardson, orange and apricot; and Maréchal Niel, yellow. Do not plant closer than 4 feet from plant to plant, and grow them on the long-rod sytem—*i.e.*, cutting down the wood each summer after flowering, and securing more rods from the base. Of course, you have top ventilation as well as at the sides? This would enable you to get thoroughly matured wood, and you will find these three varieties reliable bloomers.

Rose Comtesse de Gaillard Bearn.—This is a comparatively new French Rose of moderate climbing habit. It has pretty yellow buds, tinted pink. In pruning cut out only dead and weakly shoots. It will probably be a favourite garden Rose when better known. —J.

Growing Tea Roses under Vine *(Vine).*—Roses will need more sunlight than your Vine would allow to reach them. Nor do we think you would succeed with a climber on the wall, which would be even more shaded. Your house is small for a Vine and Roses as well. If you decide to try a few in pots, select from G. Nabonnand, Mme. Falcot, Niphetos, and Perle des Jardins.

Banksian Roses in flower *(E. S. L.).*—It is very unusual for the Banksian Roses to flower so late in the season; June is their usual time. In all probability the cold and storm are the cause of falling buds. They are not good Roses for your position. Try Félicité-Perpetue, Ruga, William Allen Richardson, or Claire Jacquier. These are sure to flower and please.

Budded Rose in bloom in a few weeks.—Being on enthusiast as regards budding Roses, shall feel greatly obliged for your kind reply. A gentleman has informed me that a person at Cambridge budded a Rose in his garden in April, and it was in blossom in time for Jubilee, 24th June, and as it was such a cold Easter, I fail to see how in a garden it is possible at such an early season to be able to get buds, and in such a short space of time to blossom.—ESOR.

*** *It is by no means impossible to have a Rose-bud in flower during so short a time from insertion. We have often seen them in bloom within less time, and it is no uncommon thing to find several flower the same season as inserted, and even make a fair-sized plant.*

Pillars for Rose.—What is the best form of pillar for pillar-Roses such as Paul's Carmine, Mrs. Paul, W. A. Richardson, etc., of which I have several fine plants that want sufficient support? They are isolated on lawns. —P.

*** *Three iron rods driven in in triangular form make a good pillar support. Wood is apt to rot at the base just when a great deal of growth needs supporting.*

Gloire de Dijon Rose dying *(Ayrshire)*—We have very little doubt your Brier-stocks were not trimmed hard enough before planting. Old roots of the hedge Brier frequently decay in the same manner as you describe, and few cut them back sufficiently hard when first planted from the hedgerow.

FERNS.

MAIDEN-HAIR FERNS FOR CUTTING.

THE idea seems to have crept into the minds of many people who grow flowers for room decoration that some Maiden-hair Fern is necessary for mixing with them. I, too, love the greenery when mixed with flowers, but I do object to the use of Fern with some things. A Rose, for instance, looks far better when backed by its own green leaves. A Carnation or Clove looks certainly best arranged with its own leaves. Fern fronds we must have, and the fronds of many Adiantums are peculiarly well adapted for this purpose. Our market growers have decided that A. cuneatum is the variety they will grow and will supply no other, so that the species has become the only plant considered worth attention for this purpose. In these notes I will describe a few kinds which can be grown for cutting, and which will at the same time give a greater variety and add a greater interest to the appearance of the house in which they are grown. I would advise my readers to grow a variety of taller-growing kinds; their fronds will be found ever welcome for cutting. These plants are all very easily grown. One of the chief items of success is good drainage, for without this no plant can long remain a pleasure to anyone; good soil, careful potting, and a plentiful supply of water to the roots, with an occasional light sprinkling with the syringe, are necessary. The following kinds will be found very interesting, as they will produce a pleasing appearance in the house and will afford variety:—

Adiantum gracillimum.

A. AFFINE is a pretty species, producing its fronds from a creeping rhizome. The fronds are each about a foot or 18 inches high when well grown. They are some two or three times divided and rich deep green in colour. These fronds are valuable for mixing with flowers arranged in a good-sized vase; pieces are also invaluable for mixing with flowers for shoulder sprays and wreaths, and they last a long time without fading. It will thrive well in the cool-house fernery, being a native of New Zealand.

A. CUNEATUM.—In spite of what I have said of this Fern, I must on no account omit it from the most desirable kinds. The rich bright green of its fronds and the jet-black stems render it very charming. Nothing can equal its beautiful fronds when used for bouquets and button-hole flowers, and that, too, in the winter months. It thrives best in moderate warmth. It is widely spread throughout Brazil.

A. EXCISUM and its variety are both very handsome plants, partaking somewhat of the characters of A. cuneatum and A. concinnum. The latter plant, however, is excluded from this enumeration. The fronds of A. excisum are three to four times divided and from a foot to 18 inches in length. The variety makes beautiful tassels some 3 inches long or more, and the fronds are very beautiful when cut for mixing with flowers for the table. It requires stove heat, and comes from Chili.

A. FORMOSUM, a very handsome kind, as its name implies, grows to some 3 feet in height, but when the fronds are about half that size they are useful for mixing with cut flowers, where their bright green pinnules and jet-black stems are very charming. I cannot recommend this one for any other purpose. It is a cool-house kind from Australia and New Zealand.

A. GRACILLIMUM.—This is a singularly beautiful Fern, as will be seen by the illustration. It is, I think, a garden variety of A. cuneatum. It comes true from seed, and as a pot specimen nothing can be more beautiful; the fronds also are exquisite, covering the flowers with which they are arranged like a delicate green veil. The fronds should, however, be cut at the last moment, or be cut and submerged for twenty-four hours before using on account of being so delicate. It likes stove heat.

A. GLAUCOPHYLLUM.—An elegant cool-house kind from Mexico. It also does well in the warmer house during the growing season. It is a small-growing plant with fronds several times divided, and the pinnules are somewhat leathery in texture, dark green on the upper side, glaucous beneath.

A. TENERUM —The fronds of this plant as well as those of the last-named form fine objects for setting up with cut flowers in a vase, and for this purpose should be submerged in water for a night or more before they are used. The young pinnules are soft crimson and very elegant. Widely distributed in tropical America.

A. TRAPEZIFORME. — A fine, bold-growing plant, one with large pinnules, and producing fronds some 2 feet and 3 feet high. This is quite distinct from any other species named here, and it may be cut and used for mixing with Grasses and flowers in the winter months. There are several others somewhat like this which may be similarly used.

A. MACROPHYLLUM.—An erect-growing plant possessed of much beauty. The fronds, which vary from 10 inches to 20 inches high, are pinnate, the pinnæ being red or crimson when young, changing with age to pale green, and becoming of good thick substance. A warm-house plant from Jamaica and other West Indian Islands,

A. PEDATUM.—I cannot allow this enumeration to pass without including in it the most beautiful species of Maiden-hair Fern that is grown, although overlooked by many because it is hardy. The plant is deciduous, and, therefore, not so useful as many of the kinds. North America.

A. WILLIAMSI.—This makes fronds some 2 feet or more long. The pinnæ, smaller than those of A. tenerum, are bright green, the stem being slightly clothed with farinose powder at the base. It is a cool-house plant. G.

Preventing Maiden-hair Fern from shrivelling.—On page 562 of GARDENING for Nov. 27th, paragraph "Roman Hyacinths," "A. E. C." regrets that Maiden-hair Fern so soon shrivels when put in water. I have for some time past burnt the cut ends of the stalks before placing them in the water, and the fronds last in good condition for several days, even on a chimney shelf. —J. G.

INDOOR PLANTS.

VARIETIES OF ASPARAGUS.

Asparagus plumosus cristatus is a dwarf form. The branches are not quite so flat as in the type and each branchlet is terminated by a multifid growth almost in the same manner as some of the crested Ferns. This multifid or fasciated growth occasionally occurs in many plants, but it is most remarkable that it should keep constant. I find that among a number of plants propagated from divisions they all retain the crested character, though some shoots are more defined than others. A certificate was awarded to this plant a few years ago, but it does not appear to have come into commerce, or at least I have not yet seen it catalogued.

A. tenuissimus, though not grown to the same extent as plumosus nanus, is equally beautiful, and for some purposes I prefer it, the light fluffy-like trails being particularly adapted for the shower bouquets now so much in vogue, and also for associating with flowering plants in groups. This may be propagated from cuttings. The short side shoots taken off close to the old stem will root freely in any light sandy compost in the stove propagating pit. In growing the plants on they do not require a high temperature so much as a regular heat and plenty of light. Shade or a sudden change of temperature will cause the leaves to turn rusty and fall off.

A. Sprengeri is a very distinct species of scandent habit, the leaves longer and broader than in those referred to above. I have not yet had much experience in its culture, but find it grows freely in an intermediate temperature. If it should seed freely it will be sure to become a useful plant. It has been grown for some time on the Continent. I lately saw some fine large plants which had been imported, placed on a shelf, and the long growths hanging down were very effective. It is obtained from seed, but I have not yet seen it ripen seed in this country.

A. retrofractus arboreus.—I do not know in what way this differs from the original form of retrofractus, which was introduced from the Cape of Good Hope in the year 1759. I have not seen it under the original name. It is probable that arboreus is the same. It is a most beautiful Asparagus and well worthy of cultivation. It is of tall habit, the stems hard and of a woody substance, covered with a greyish white powder, the long thread-like leaves produced in tufts from the slender wiry branches. I do not know if seed can be obtained. I have not yet seen any signs of its flowering, though I have had some strong well-developed plants. I am afraid it will prove too slow to propagate from divisions to ever come into general use, though it would undoubtedly be much appreciated, the long trails of bright green foliage being very effective among cut bloom. Like other plants from the Cape, it will do well in a cool greenhouse, but a little extra warmth will ensure better growth. It requires plenty of pot room, a rough porous compost, and good drainage, and must not be grown under the shade of other plants.

A. deflexus.—Under this name a very useful species was brought into commerce a few years ago. It is of tall growth, with slender wiry stems, the drooping leaves of a bright green, and for cutting very useful. When planted out the underground rhizomes spread freely and throw up strong growths in all directions. It may be readily increased by taking up these strong shoots with some roots to them. I find it also seeds freely, and seedlings soon make nice plants. This succeeds best in a cool-house, too much heat inducing slender growth and weakening the plants.

A. decumbens (syn., A. crispus) is an old species of very slender growth, from South Africa. Although very pretty, I could not recommend it for general use. The large fleshy, tuberous roots render it difficult to grow. It should be grown in a cool-house, and under genial conditions it makes long growths on slender thread-like stems. The leaves are of a glaucous green and, as its name indicates, of a drooping habit. H.

—— Asparagus retrofractus has several times recently been spoken highly of for cutting, and it has certainly the merit of being totally distinct from Asparagus plumosus and A. tenuissimus, which have of late years become so popular. A. retrofractus forms, like the two above mentioned, pretty little plants in small pots, but with age it develops a strong climbing habit, the stems being very hard in texture and light in colour. The principal stem produces side branches freely, while these minor branches and branchlets, which are slender and wiry, have the leaves arranged thereon in little tufts. The leaves are each from 1½ inches to 2 inches in length and bright green in colour. I have not succeeded in propagating it from cuttings, but have obtained a few plants by means of layers. This is, however, a very slow process, but it is apparently the best method available unless seed can be obtained.—T.

THE CHINESE JESSAMINE (RHYNCHOSPERMUM JASMINOIDES).

This old-fashioned climbing plant is well illustrated in the accompanying cut, showing a popular way of training it. Although it is well suited for growing in this fashion, it does not follow that no other mode of culture is capable of being adopted. For instance, it makes an excellent evergreen climber for an unsightly wall in a cool-house, whilst it may very advantageously be trained up a pillar or a column in a conservatory. Again, it is suited to the Rose-house as well, bearing a fair amount of forcing and flowering at the same time as the Roses. Sometimes it is trained as an edging around the borders in which the Roses are planted, being easily kept within bounds. As a cut flower its chief merit lies in its Jasmine-like perfume. It is not one of the best of flowers for cutting, either for home use or for sending any distance when packed, by reason of the tendency of the blossoms to become discoloured. It lasts in bloom for some considerable time, but when in flower it should be shaded from the sun. As soon as the plant is out of bloom, if it be upon a trellis, in a pot or tub, it may be safely stood out-of-doors until the end of September, receiving an occasional cleansing with the syringe. When potting is needed it had better be seen to after the flowering stage is over. Good fibrous loam and peat of a durable character will suit it very well, potting firmly. Large shifts are not needed—in fact, it will remain in an excellent condition for years in the same pot with an occasional top-dressing of good soil. When planted out it should not be allowed too much root space, otherwise there may be a tendency to grow too luxuriantly. A moderate amount of water only is required, sufficient at all times being given to keep its foliage fresh, but not enough to sodden the soil. Any tying in or training should be seen to before it starts into growth in the spring, otherwise its foliage will not become settled in a natural manner for some few months. The insects to which it is most liable are the scale, particularly a mealy-looking kind, and the mealy-bug, but no insects ever need give any trouble if the slightest amount of perseverance is exercised to keep them in abeyance. The Rhynchospermum is a climbing plant well adapted for amateurs and small growers, being one that does not give much trouble at any time, whilst it will put up with a good amount of rough treatment. Being also a plant of somewhat slow growth, it takes some years for it to become too large for even a small house. H.

Chinese Jessamine (Rhynchospermum jasminoides).

Lilium auratum with 200 flowers.—Your instructive paper has lately contained photographs of Lilium auratum as pot-plants, so I thought you might like to see a photograph of one I grew, which will, I think, compare favourably with those you have already shown. When I first had it it was only a shilling bulb. At the time the photograph was taken it had 179 blooms, which were increased the next year to 204.—William Melluish, *St. Mary Church, Torquay.*

Ivy-leaved "Geranium" Souvenir de C. Turner.—A more free-flowering variety there could not possibly be. I gather several dozen trusses weekly and still they come, and likely too, right throughout the season. Another advantage is its adaptability for packing and carrying long distances. Mine have to go to London with other flowers for decoration, and they withstand this trying ordeal excellently. Being kept at a temperature of 60 degs. in a

light and dry house, the trusses are thrown up with a good length of stem, and the colour of the flowers is well maintained. I have also used them for church decoration, where daily services are held, for a week together, and at the end of this time they were almost as fresh as when cut. Buds which are just commencing to open will unfold in water. Early propagation is essential, the cuttings being inserted during the first week in March. Late propagation is useless, as such plants do not produce the quantity of flowers earlier ones will. Yearling plants are also the most useful, older plants not producing nearly so many flowers. My plants are grown in frames facing the south, the lights being removed during the three hottest months, the buds also being kept picked off till the middle of September. The wood being well ripened, and yet not starved, flower trusses will form at almost every joint. I have got several other varieties I am going to give a similar trial to next season, as I think some of the others under like treatment may produce equally good results. In packing for carrying long distances the trusses are better gathered overnight and placed in water, and in the morning packed in small shallow deal boxes in a single layer. If packed with other flowers in larger boxes the delicate petals are liable to be bruised.—A.

FRIENDS OF THE GARDENER.

TOADS.

THERE are few creatures better known than toads, and perhaps few are more generally disliked. This vulgar prejudice against these most useful animals is most unreasonable, as, except their somewhat ungainly appearance, there is nothing about them to cause any fear or feelings of disgust. They have no teeth, so that they cannot bite anyone, and they cannot move, except in a most leisurely manner. They are perfectly silent, so what there is to cause alarm it is difficult to imagine. The ordinary feeling towards these creatures is well shown in the story told of a labourer, who while digging came across a toad, and immediately crushed it flat with the back of his spade, saying, "I'll larn you to be a toad." Toads are among the most useful creatures in the garden. They feed entirely on insects, woodlice, and worms, and do not in any way injure plants. Of course, if a toad was to happen to crawl over and squat about on a bed of quite young seedlings it would not be to the benefit of the seedlings, but such an occurrence would not happen often, and might be treated as an accident. The toads are very nearly allied to the frogs, but they differ from them in having no teeth and a much rougher skin, and, as everybody knows, they are much stouter in form and slower in their movements. Though equally with the frogs belonging to the order Amphibia, they are by no means so amphibious, though they can swim. They deposit their eggs in water, the eggs being laid in long, gelatinous strings, 3 feet or 4 feet in length, and not in large, ball-like masses like frog-spawn. From the eggs are hatched tadpoles, very much like those of a frog, but they are smaller and of a darker colour. At first the tadpoles breathe by means of external gills which may be seen on either side of the head, but as they become more fully developed these gills disappear, and the tadpole breathes by internal ones. In course of time the hind-legs are developed, and later on the front ones, then the tail is gradually absorbed. It does not drop off, as many persons suppose, so that the saying, "What next? as the frog said when his tail dropped off," has really no point in it. When the tail is entirely lost the tadpole has altogether become a toad, and lives, as I have already mentioned, almost entirely on the land. During the day toads generally hide in some hole in the ground, or at the roots of a tree, or in some sheltered place, coming out of an evening to feed. The stories of toads being found alive in stones are entirely false, and have no foundation in fact. What has, no doubt, led to the idea that toads may be found in such places is the habit of these animals of hiding in holes and cracks in the ground. In the winter they, no doubt, go deeper down. If it so happens that a toad finds a crack near some pit in which stone is being quarried, and working its way down some feet from the surface is found there by the workmen, who do not notice the means by which the toad reached its position, he concludes that it had been there ever since the strata of that pit or quarry was formed, and the tale finds its way into the local newspapers during the "silly season." Toads are, however, very tenacious of life, and have been known to live forty years, but not without food, as they must do if enclosed in solid stone. Toads have no ribs, so that they are able to puff out their bodies to a very considerable extent, which they do when frightened, and at the same time they exude from the glands of the skin a somewhat milk-like secretion, which appears to be acrid and irritating, as dogs always foam at the mouth when they try to lay hold of these animals. The skin of toads is also very absorbent, for as they never drink all the moisture they require is received through the skin; and there is another peculiarity about a toad, which is that its tongue is attached to the front of the lower jaw instead of to the back of the mouth. The result of this is that it is able to throw the tip of its tongue much further forward than it could otherwise, so that when within reach of its prey it darts its tongue, which is very sticky, rapidly forward, and its victim is drawn into its mouth before it has had time to struggle even. There are no less than seventy different kinds of toads. Only two, however, are indigenous to this country—the common toad (Bufo vulgaris) and the natterjack toad (Bufo calamita), which is by no means so common as the other species generally, but it is tolerably abundant in some localities. It may be recognised from the common species by having a whitish line down the middle of its back, and being generally of a paler colour, with darker mottlings. It is also somewhat more active. One of the most curious toads is the Surinam toad, which lays its eggs in the water. They are then taken up by the male and placed on the back of the female, whose skin at this season is very soft, so that the eggs are easily embedded in it. The skin soon closes over the eggs, which are then each in a separate cell. In these cells the young become fully developed, and emerge in due course as perfect little toads. G. S. S.

GARDEN PESTS.

Leaf-mould full of worms (*Johnnie*).—When you speak of worms in your leaf-mould I presume that you mean earthworms. They have in no way injured the mould, but rather improved it, and as far as I can see there would be no harm in using it with the worms in it unless it was wanted for pot-plants, when the best way of getting rid of them would be by picking them out. If you could spread the heap about and turn some poultry into the yard they would soon clear off the worms. If you were to soak the mould with lime-water it would bring all the worms to the surface, when you could collect them. Ammoniacal liquor from the gasworks, diluted with six times its volume of water, will serve the same purpose.—G. S. S.

Malmaison Carnations sickly (*S. S.*).—Your Carnation leaves are attacked by a fungus the "Carnation rust" (Uromyces caryophillinus), a common and most destructive pest to these plants. As soon as the fungus makes its appearance the plants should be washed or sprayed with Bordeaux-mixture, or with ½ an ounce of sulphide of potassium, dissolved in 5 gallons of water; or the leaves may be dusted with a powder made as follows: Dissolve 6 lb. of sulphate of copper in 3 gallons or 4 gallons of water, and with it slake 1 bushel of lime in this manner. Put a layer of lime into a box and sprinkle with the copper solution till the lime falls into a fine dust; then add another layer and sprinkle again, and so on until all the lime is reduced to a powder.

Begonia roots attacked with grubs (*G. C.*).—Your Begonia roots are attacked by the grubs of the black-vine-weevil (Otiorhynchus sulcatus) or some very nearly allied species. This is a most troublesome pest. It is practically useless to try and kill the grubs by any other means than picking them out of the roots. No insecticide can be made to reach them in such a way as to kill or even discomfort them. The weevils feed at night on the leaves of Vines, Ferns, and various other plants, and should then be looked for with the aid of a lantern. A white sheet should previously be laid under the plants they are attacking, as the weevils often fall when they see a light. They hide themselves during the day so carefully that it is almost impossible to find them.

Carnation-leaves (*S. H. Powell*).—I have carefully examined the further supply of Carnation-leaves you sent, and find that they are certainly attacked by mites, which are dead and shrivelled up; but, as far as I can see, they are the ordinary red-spider. Do not keep the plants too dry at the roots, and wash the leaves with one of the following preparations: In 4 gallons of water boil 1 lb. of flowers of sulphur and 2 lb. of fresh lime, add 1½ lb. of soft-soap, and, before using, 3 more gallons of water. Or mix 4 oz. of sulphate of lime with 2 oz. of soft-soap, and add 1 gallon of hot water. Or use the extract from 6 oz. of Quassia-chips, 5 oz. of soft-soap, 8 oz. of flowers of sulphur, thoroughly mixed in 5 gallons of water. As regards mildew on Chrysanthemums, dusting with flowers of sulphur, after having first wetted the leaves so as to prevent the sulphur falling off, is the usual remedy, but sulphide of potassium, ½ oz. to 1 gallon of water, is much recommended.—G. S. S.

LATE CHRYSANTHEMUM REPLIES.

Chrysanthemum Etoile de Lyon (*T. W.*).—It is beyond the powers of man to get Chrysanthemums to sport, such an event in plant life being entirely a freak of nature, and no one has yet put forward a solution of the problem. You speak of the variety Etoile de Lyon with three blooms, one of which is white and the remaining two blooms the right colour. This is one of those sorts which vary in colour considerably, chiefly owing to the earliness or lateness of the buds being retained. Early buds of this variety invariably develop flowers quite white, while those retained later, especially terminal buds, are quite a pretty shade of rosy-lilac. The atmospheric conditions prevailing at the time the buds were retained also would have a marked influence upon the resulting blooms. When a sport has to be "fixed," the proper treatment is to leave only the shoot which has sported, and then embed this in some gritty compost in a house with a comfortable temperature. In a short time shoots will be seen breaking out from the base of the leaves on the original stem. These should be detached, and the cuttings propagated without delay.

Chrysanthemums — twelve dwarf Japanese for exhibition (*W. K.*).—You ask for large, spreading blooms, and by this we take it you want those of large proportions, not necessarily excluding those of spreading and drooping form combined. Secure the stock of Mme. Carnot, immense white; Yellow Mme. Carnot, yellow sport from the former; A. H. Wood, pale yellow, fine spreading flower; Emily Silsbury, white, rather early; Mons. Chenon de Léche, old rose; Miss Elsie Teichmann, pearly-white; Mrs. Hermann Kloss, dark orange, flushed chestnut-red; Mutual Friend, white; Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; Edwin Molyneux, deep rich crimson; and Mr. A. G. Hubbuck, chestnut-red.

Chrysanthemums — eight dwarf sorts for cutting (*T. W. W.*).—We have taken into consideration the fact of your house being a small one, and for this reason have made a selection to meet your case. There are many growers situated as you are, and they no doubt will find the selection useful. The following are free-flowering sorts and easy to cultivate: Annie Clibran, a lovely clear soft rose-pink, and a useful decorative plant; Mr. Chas. E. Shea is a flower of similar form to the last-named, but of a light yellow colour; Source d'Or, rich orange-red; Yellow Source d'Or, a deep rich yellow sport from the previous sort; Mrs. James Carter, a small pale yellow flower, with thread-like florets; Emily Silsbury, pure white; John Shrimpton, rich crimson; and Mlle. Lacroix, pure white. All the above sorts are Japanese.

Chrysanthemums — 12 incurved sorts for exhibition of dwarf habit (*W. K.*).—It is less easy to give a list of twelve

incurved of dwarf habit than would be the case with the more popular Japanese. Nevertheless, we feel confident you will find the following varieties admirably adapted to your requirements. You do not state whether you are willing to purchase the latest novelties; on this account, therefore, we have excluded the very latest additions to this form of the Chrysanthemum. Baron Hirsch, orange-cinnamon, rather early, easy to grow; D. B. Crane, bronzy-buff, red inside florets; Chas. H. Curtis, rich yellow, very constant, retain late buds; Globe d'Or, deep buff-yellow; Mrs. R C. Kingston, a large handsome flower, light blush or peach-pink; Robert Pitfield, silvery-pink, rather late; Barbara, bright amber, shaded orange; Lady Dorothy, pale cinnamon-buff suffused with rose, late; Lady Hardinge, silvery-rose, rather early; Lord Rosebery, pale lilac, of beautiful form; Princess of Teck, white, suffused pink, late; and Geo. Haigh, a rose-carmine sport from Robt. Petfield, and rather late. Several of the above attain to a height of between 4 feet and 5 feet, yet they are indispensable.

Chrysanthemums—cause of blooms damping in centre (*Constant Reader*).—The cause of your blooms failing to open in the centre, and afterwards damping, or, as you describe it, "begin to rot," we should think is probably due to the low temperature maintained in your greenhouse. The Japanese flowers more particularly need a temperature of about 50 degs. to develop satisfactorily, and if the weather be damp and foggy, and a free circulation of air through the greenhouse be not carried out, the blooms are very likely to damp off in the manner you describe. Again, drip from the roof will sometimes fall on the blooms, and this in a very short time will render them useless.

Chrysanthemums—technical terms used in describing culture (*T. S.*).—We have explained the use of the terms "first crown," "second crown," and "late crown"-buds over and over again in this paper, but repeat for your assistance. A first "crown"-bud is the first bud which forms in the points of the shoots after the natural break is made, or after the plant has been induced to make a break, as the result of having the point of the shoot taken out from the plant when a single stem only is growing. The second "crown"-bud is the bud appearing in the point of the shoots, which break away immediately below the first "crown"-bud after that bud has been removed, this second "crown"-bud appearing some month to six weeks or more later than the first "crown"-bud. When speaking of late "crown"-buds, it is meant to refer to a first "crown"-bud made to appear later than is usual with certain varieties, or else to the second "crown"-bud which is generally somewhat late. It is possible for a plant to develop a bloom from a first "crown"-bud, which has no claim whatever to beauty, yet if that same plant had been allowed to develop blooms from second "crown"-buds, the resulting bloom will be very different indeed to those from an earlier, and very probably be one of grace and beauty and good colour also. The first buds appearing on shoots after a plant had been cut down would be first "crown"-buds if cut down at the usual time.

Chrysanthemum Mrs. Wingfield.—This is a useful addition, and should receive a hearty welcome for outdoor culture. It is a pretty little dwarf decorative variety, with flowers of medium size. Colour pale pink, paling off to a soft blush. The Royal Horticultural Society gave the variety an award of merit in the season.

Chrysanthemum Waban (*J. R.*).—We think there must be a mistake with the flowers sent to us, as the foliage and also the florets are quite distinct one from the other. The darker flower of the two is Waban. The form of the two blooms is absolutely distinct.

Chrysanthemum Vice-President Hardy.—This is, unfortunately, very little known as a decorative sort, but it is invaluable for a mid-October display. In the hardy border plants are now flowering profusely; they attain quite large proportions, and are in height about 4½ feet. The flowers belong to the Japanese type, and, grown without disbudding, are very useful for decoration, having footstalks of good length. The colour is bright red, tinted golden-yellow, with bright gold reverse. The florets are also prettily twisted. This sort should be grown for conservatory decoration.—C. B.

LATE ROSE REPLIES.

Pruning climbing Roses (*Be*).—By no means prune these climbers. The summer wood is the most valuable. We recognise you as an old subscriber, and will ask you to look out for full pruning notes, which will appear in ample time.

Rose Mrs. Paul.—Is this Rose perfectly hardy? I thought of growing it on one side of a rustic arch in the garden. If too tender for this district, could I grow it in cold greenhouse, planted out at foot of back wall?—Ivy.

*** There are few Roses more hardy than this grand Bourbon, and you can safely put it in almost any position.

Rose Mme. Lambard (*Springmore*). — The Rose you mean is evidently Mme. Lambard, a Tea Rose of great merit for garden decoration and early forcing. It is a good grower, flowers throughout summer and autumn, and is of extra merit for early and late flowering. The flowers vary considerably, sometimes being a deep crimson, at others a pale salmony-flesh. Both of these may be produced in self colours, or the flowers possess them in varying intermediate shades.

RULES FOR CORRESPONDENTS.

Questions — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2386—**Destroying tree** (*Rowan*).—Salt would certainly have an injurious effect upon the trees, but would not remove it, and you had better cut it down and take away the roots as well.

2387—**Pears cracking** (*Hazeldene*).—Evidently the tree is either upon a thoroughly bad soil, wants root pruning, or the variety is a very poor one. We blame the soil, and partial root-pruning this year may alter matters. Try the latter method.

2388—**Moving Geraniums** (*A Constant French Reader*).—It is not advisable to shake all the soil from the roots. Damp Moss is a suitable material to pack the roots in. Do not keep the plants out of soil longer than is really necessary.

2389—**Temperature of stove-house** (*W. D. S.*).—So much depends upon what subjects are grown that we fear to give you much advice. As a rule, however, from 65 degs. to 85 degs. is most suitable; but, in many cases, the temperature might safely fall 10 degs. lower.

2390—**Epiphyllum** (*Brit*).—Epiphyllum truncatum is most likely the name of your plant. Do not give much water; and, if possible, give a rise of 10 degs. in temperature. Forty-five degs. is much too low for this pretty Cactus during its flowering stage.

2391—**Plant-leaves dropping off** (*R. Burrett*).—We think it most probable the paraffin stove is to blame. If the wick is too high or too low, and so throws off an offensive smell, or even if the atmosphere is too parched, that would account for loss of foliage.

2392—**Heuchera sanguinea** (*Rector*). — This is quite hardy in the south and midland districts, and is treated as such everywhere in those districts. The worst feature is, that just as the flower-stems are well up we often get a late white frost, and the bloom is much injured.

2393—**Epiphyllum truncatum "dried up"** (*Pfersdoffe*).—Epiphyllum truncatum requires a porous and dry compost. The fact of your keeping it wet would fully account for failure, as the roots would be sure to die. Almost all succulents need a dry compost and as much sun as possible.

2394—**Ferns for conservatory** (*M. J. S.*).—Adiantum decorum, A. pubescens, Asplenium bulbiferum, A. bifidum, Cyrtomium falcatum, Davallia canariensis, Lomaria gibba, Nephrolepis exaltata, Pteris tremula, P. serrulata and its varieties, are all suited for your house and temperature. Do not use too fine a compost, pot firmly, and drain well.

2395—**Growing a Fig-tree** (*J. J.*).—We do not think you would succeed with a Fig-tree in such a structure. Can you not plant one in a warm south-west corner? You could then give all necessary winter protection by partially sheltering with a mat during severe frost. Too rich a soil will produce coarse growth rather than fruit. Wait until spring, and then procure a plant in a pot, and turn this out into the open soil. Brunswick and White Marseilles are two of the hardiest varieties.

2396—**Blue and red Salvias out-of-doors** (*Tockington*).—The blue and red Salvias are not hardy; but during a mild winter we have known them saved by covering the tubers with ashes. If you lift them and pot into a porous compost they will stand round in a dry and frost-proof shed, or in a cool greenhouse, but it would be very risky to leave them outside.

2397—**Greenhouse dripping** (*T. M.*).—Your lean-to greenhouse roof is, no doubt, too flat, and the glass does not sufficiently lap. The laps should be fully ½ inch over. Perhaps you may, when dry, be able to force a little putty into the laps from inside, and so stop the drip But the side puttied may have cracked or opened and let in the rain. These want repairing and painting from the outside.

2398—**Seedling fruit-trees** (*Ormesby*).—Rather than have seedling Plums and Apricot-trees grafted in the spring, have them budded just as Roses are budded, but in the side of the stems, and nearly close to the ground, at the end of August next. If you cannot do it, then get a gardener to do it. Do not bud more than one Plum with a proper Greengage, and do the others with Victoria and Rivers' Early, or some other good cooking Plum. The Apricot will be of doubtful value as a bush or standard tree; but may do well on a wall. It is just possible that the latter would be best eventually if left unbudded, as they live longer.

2399—**Lavender failing to bloom** (*Ormesby*).—It seems evident that your soil is of too strong and rich texture for Lavender. It likes gravel and chalk, but the latter especially. If you could get some of the latter and mix in one-half with soil and replant your Lavender you may do better. Failing that, then try and get old mortar rubbish, and mix with it, then replant; that will probably result as you wish.

2400—**Cypripedium spectabilis** (*A. Ley*).—This can be grown in a pot, but a sunny window would be the worst possible position for it. This terrestrial Orchid requires a moist, shady situation, and the arid atmosphere of a sunny window would be fatal to its successful culture. Specimens that are flowered in pots are grown in cold frames and in the open where moisture and shade can be readily supplied.—S. W. F.

2401—**Camellia and Rose-leaves unsatisfactory** (*C. H. Hedley*).—The Camellia-leaves are injured by cold drops of water from the roof of your house. As for Maréchal Niel leaves, it is only natural they should ripen off in this way during autumn. Do not feed with liquid-manure until next February. Your temperature is not high enough for winter forcing, nor is the plant sufficiently ripe, from what we can judge of the leaves sent.

2402—**Bignonia radicans not flowering** (*M. F. F.*).—The enclosed leaf appears to be Bignonia radicans, but it is too small and too much withered to tell with certainty. Since the plant has made no growth for two summers its roots are evidently in an unhealthy condition. If the weather remains open, lift it at once, clear away the old soil, and replace it with fibrous loam, to which add some leaf-mould and a dash of silver-sand. Be careful that the roots are not injured in the lifting and transplanting, and spread them out carefully in the new compost. The ground around the plant had better be mulched with Cocoa-nut-fibre during the winter.

2403—**Various queries** (*A. L. O. F.*).—Your plants are affected with mildew, caused by extremes of temperature and watering. The only remedy is a more uniform temperature and careful washing with a weak insecticide in which a little additional flowers of sulphur is mixed. Leaf-mould and manure are not good for Maiden-hair Ferns. Fine peat and turf loam, in equal proportions, and do not break the compost up too fine. We think you have kept your Ferns too wet. The leaf you send is a Canna, and it should have flowered with you before reaching such a height. No "Geranium" foliage reached us.

2404—**Moss-litter-manure** (*H. A.*).—This manure is credited with possessing several per cent. more of fertile properties than ordinary stable-manure. But the Moss itself is to some extent plant food when decomposed, as straw is also, the latter, however, being longer decomposing. Again, the Moss-litter is more absorbent of urine, and that is very important. Also, as a rule, it remains much longer in the stalls as bedding than straw does. For that reason, also, it usually contains a much larger proportion of excrement. If you were to collect ordinary straw manure, shake out the long straw, and allow the short matter to accumulate, then turn it occasionally, as Mushroom-beds are made, it is probable that in that way it would be found equal in manurial value to an equal bulk of Moss-litter-manure. Of course, you may use it in your garden, but do not do so lavishly.

2405—**Manuring fruit-trees** (*Middle-aged*).—Only when fruit-trees are in a stunted, starved condition would at all justify the removing of 6 inches of the top soil over the trees for a radius of 3 feet from the stems, and adding 4 inches of stable-manure, re-covering with soil. If your trees were in fair growth previously there is danger that such manure-dressings may drive them into coarse, fruitless wood-production, and render their latter state worse than the first. We should have it manured as really needed, to have forked up the surface soil, and then laid the manure about over the roots, but more thinly covering a much wider root area. If the trees should crop freely next year, then you may give them, once a week, each a good soaking of liquid-manure, but not continued if wet weather should prevail.

2406—**Vine resting** (*Brit*).—In asking how long a Vine should be allowed to rest, you ask a question that has for plant physiologists very considerable interest. The term "rest," as applied to plants in a semi-dormant state, rather leads to the inference that what is called periods of rest are absolutely essential to recuperation. That may or may not be so, but there is really no scientific data on which a satisfactory opinion can be based. We know, for instance, of houses of Grapes kept hanging until March, the glass being covered by sheets to exclude the sun's rays, and new growth has begun ere the entire crop has been cut. It is hard to understand where the rest comes in there. If you have tender plants in your greenhouse you must keep up a temperature of from 45 degs. to 50 degs. of warmth. If you have none, then throw open the house when the weather is open, just closing it in very hard weather. Fire up a little at night early in March, and then start the Vine generally.

2407—**Bulbs in pots** (*Frome*).—Daffodils and Tulips put into pots and, stood outdoors, covered up with ashes, should there remain until the crowns have thrown up quite an inch and the pots are found to be fairly full of roots. Then you can take them into a greenhouse or frame, either at intervals, as you may want to bring them on, or, all at once. Do not subject them to heat, if you propose to do so, directly; rather do it gradually. The time of blooming will materially depend on the warmth given, but if the house or frame be cool, your bulbs will not bloom for some time. Keep them near the glass, or the leaves will be drawn. You may push Rhubarb into much earlier growth by now covering up with a tub and long manure. The top of the tub should be movable. The time of beginning, however, should depend on how many roots you have for succession.

2408—**Sheltering Peach-tree** (*F. C. G.*).—Protecting a Peach-tree when in bloom in the spring should only be resorted to when the weather is frosty or likely to be so. When the weather is open, the more exposed the better. Too much covering has a tendency to weaken the bloom, which needs, when open, all the light it can get. Royal George is a fairly hardy Peach; however, the best material is called tiffany. This is of soft cottony texture, and like close netting; yet whilst catching fallen moisture and frost, does not so much obstruct the passage of light as some other materials do. You may fix it as you suggest with rings top of the wall, and 2 feet out from the bottom to iron bars, on which the rings would run. Thus you could pull the covering off early in the morning, and draw it on again in the evening. A long roller fixed at the top of the wall under a good cover, so that the protection can be drawn up in the morning, is also good. A few long stakes should be fixed to the top of the wall, and 2 feet out at bottom for the blind to run over and keep it from the tree.

2409—**Begonias** (*Mrs. Lindsay*).—The large-flowered Begonias are not perpetual in the same degree as the small-flowered section, and would be of no merit for winter use. Ascotensis, undulata, miniata, hybrida floribunda, picta, and Weltoniensis are half-a-dozen good winter bloomers, and also flower in spring and early summer: but neither bear the large blossoms found upon the tuberous-rooted section.

2410—**Lily of the Valley** (*Broke*).—What are styled "Berlin" or single crowns are best. Get them now, and let a slight frost have access to the tops. It is a good plan to set them into ashes and light soil, or Cocoa-nut-fibre and loam, with the tops just showing through. After a frost, lift in batches, pot into any light compost, and place in a strong heat of 70 degs. to 80 degs. If you keep them dark in a propagating-case until the flower-spikes are well forward, the bells and spikes will be larger and longer. Expose to light when half opened. They do not force well until after a frost, and need much water.

2411—**Ivy in garden** (*A. H. D.*).—We do not think we would remove the Ivy, as you would not get a better or more permanent screen from any other plant. Still, if you wish for Roses, the two you name are very suitable, and are almost evergreen. Add some good coal-soot to your clayey border as well as manure. There is no virtue in ashes, and we would not use them freely. Soot and manure, with drainage, will soon bring the bed into good heart. There are no hardier plants than the Hybrid Sweet Briers—Jeannie Deans and Anne of Gierstein are two good ones for your purpose. We would plant Polyantha simplex in the corner by the shed and lattice-work. This Rose would make a pretty feature, with its numerous star-like blossoms. Grow the Laburnum seedling as a standard. It will have a better effect thus than as a pyramid.

2412—**Moving Clematis Jackmani** (*A Constant French Reader*).—If you leave for Jersey early in March you may let your Clematis remain where it is until then, so long as it does not show any signs of moving. Immediately you notice young growths appearing, lift the plant and place it in a pot of soil. Clematises do not care about having their roots interfered with too much when they are in full growth.

2413—**Pruning** (*G. W. S.*).—Winter pruning of fruit-trees may be done at once, and at any time for the next two months. There is really no difference as to kinds. The leaves have fallen, the wood is ripe, and the trees, therefore, may be pruned at any time. Of course, the sooner done the quicker the soil about the trees may be forked over or dug, as desired. Prune Currants and Gooseberries also now. You may also prune all hardy deciduous shrubs. By these we mean all that shed their leaves in autumn. Generally it is best to prune evergreen shrubs in March or April, as new growth at once follows.

2414—**French Beans** (*Falmouth*).—From the time of sowing in heat to fruiting French Beans require about eight weeks. You will see, therefore, unless you have plants in bloom now, and in a temperature of about 60 degs. to 65 degs. of heat, you have no chance of getting what you desire at Christmas. If you had pickled some in a jar in the summer, with salt, you might have had plenty of Beans. To have any during winter great skill is needed—a light house, ample warmth, and 6-inch pots three quarters filled with soil, in each of which there should be six or seven plants. Moderate watering is needful. The best varieties for early winter, whilst the days are short, are Newington Wonder and Syon House Prolific, and for the early spring, Ne Plus Ultra, which gives finer pods.

2415—**Fruit stocks** (*C. Wall*).—Your Green Gage suckers are no doubt of the Mussel Plum. They are rather strong to lift, but if you can get them with good roots, and after trimming off the bottoms neatly, well plant them in good soil in rows 2 feet apart, they may be ready for grafting in the spring, although better budded in August, if the stems were not too stout. We should prefer to try budding next autumn, and if that failed, then grafting in the following April, as they had become well rooted. Beside Victoria we should advise working Rivers' Early Prolific and Monarch, as these three would give you a nice succession. If you wanted a third, then get Czar. It would be a good plan to purchase single young trees of Plums at once, and plant them to give you buds for the autumn, or grafts for the following spring.

2416—**Zinc slips** (*Hebb*).—We do not correctly, probably, gather just what sort of zinc slips you want for glazing purposes. If, as we assume, you simply need strips of soft metal, say, ½ inch wide and about 2 inches long, that can be made to clip over the upper end of panes of glass, or inserted between rafters, to also clip over and hold firm the bottom ends of the next upper panes, we should advise you to get them cut for you by some local whitesmith, as that would be cheapest. If that be not what is wanted will you make it more clear? Of course, you may not in using fittings infringe on anyone's patent rights. In such clips as we have mentioned there is nothing patent, as these have been long and widely in use.

2417—**Vine dressing** (*Anxious*).—Unless it be a matter of great necessity do not think of starting your Vines into growth until January. If you do so now, you will have the growth, leaves, and bunches developing in the dullest of weather, and that will cause them to be weaker than if started fully a month later, as the days will then be lengthening and the sun will be getting power. Gishurst-compound is a capital dressing for Vine-rods, but we advise adding to it some clay and paraffin paste. Failing that, put 2 lb. of dry clay soil, free from stone, into a pan, add to it ½ pint of paraffin, and make the soil absorb it. Then add 2 lb. or so of Gishurst-compound and some warm water, and well mix the whole, painting the Vine-rods well with a half worn paint brush, but not dressing the eyes or buds; wash these carefully with soapy-water only. You can mulch inside border if you like to help feed the roots, but a good mulch will do more good after the Grapes are thinned. A good soaking of water now may do much good inside, but not outside.

2418—**Pears cracking** (*Rector*).—When Pears crack it is conclusive evidence that the roots are in sour or crude soil, and fail to find the needful food elements. With respect to your Peach, Nectarine, Apricot, and Plum-tree, though on walls, yet they suffer from the same cause, it would be a drastic course to take, but the only remedy can be found in unnailing the trees, lifting them, carefully preserving every possible piece of lateral root, cutting clean off all downward roots, then replanting. Before doing that, throw out several inches depth of the under soil, and wheel it away, replacing with fresh soil from the vegetable quarters, then replanting, keeping the roots rather nearer the surface than before. Also replace the top soil in each case with fresh, and before filling in have it well pulverised. If you can add some wood ashes, bone-dust, and lime rubbish, it will be helpful. After the soil has settled down, nail the trees afresh loosely, and lay a mulching of long manure over the roots. The final nailing had best be done in March. That is a big job, but it presents the only real remedy. If the Pear-trees be on a wall they had better be served the same, or else well root-pruned, 4 feet from the stems, and have the trench opened to cut off the downward roots, filled with fresh soil, also giving manure to the surface. It is important in your case, having once got the trees freshly planted, that you manure or top-dress from the surface from time to time to keep the roots there.

2419—**Gas-lime** (*B. B.*).—The usual dressing of gas-lime to land is about a bushel or ½ cwt per two rods of ground—that is, 1 cwt. per 4 rods, so that a full ton of 20 cwt. should dress half an acre. Gas-lime is best employed where the soil is sour, wet, damp, or so full of humus that it needs liberating with the aid of lime. Still, for the latter purpose, fresh lime is as good and less offensive. Where soil really needs lime it is well to slack it in a dry shed. Then strew it thickly over the surface and fork in. So used, it may be dressed between growing crops freely. Gas-lime, if so used, should be run through a coarse sieve, then be carefully strewn between the plants, so that it does not touch them, and after a few weeks be well forked in.

2420—**Wall-trees** (*E. J. W.*).—We would not advise planting sweet Cherries on a north-east wall, but you may plant such Pears as Williams' Bon Chrétien, Souvenir du Congrès, Louise Bonne, and Pitmaston Duchess. These might, if soil be good, and they be properly attended to, do very well. Then you may plant of Plums, Jefferson's, Prince Englebert, and Coe's Golden Drop, dessert varieties; and Victoria and Monarch, cooking varieties. When the summers are warm fruit on this aspect may be very good, but during cold seasons it is less certain. Some protection at night should be given to the bloom during spring frosts. Your Clematises no doubt had best be cut rather hard back in any case, but it would have been helpful to know whether they be spring or autumn bloomers. All the former flower on the previous year's wood, and all the latter on the same season's wood. The former should have branches or growths thinned out every year, preserving the best, and the latter should be cut back close to the ground, or nearly so, every winter.

2421—**A brick pit** (*Medicus*).—The Bath Cos Lettuces may be induced to turn in—that is, produce blanched hearts, when big enough, by neatly tying the leaves up rather closely together. If yours is the Black-seeded Bath Cos, that will naturally heart in, but the White-seeded form always needs tying. Of course, all depends on present fitness, but if the plants be 10 inches in height, and fairly stout, they should be fit for tying, but not tightly at once. You may further use your pit by sowing in it a bed, say all one light, of early French Horn Carrots, in drills 6 inches apart for pulling small. Also you can, early in January, make a sowing of French Breakfast Radish, and you may sow Mustard and Cress in shallow pans or boxes and stand them in the pit. You may make a sowing of Snowball Cauliflower and Ellam's Early Cabbage in February for planting out. You may make later sowing of Dwarf French Beans, and during the summer fill the pit with Vegetable Marrows.

2422—**Manuring garden** (*Right or Wrong*).—Your practice of putting manure over the roots of fruit-trees is a very good one, but it is hardly so about flower beds, as it renders them very untidy, and tempts the birds to scratch the manure all over the place. What they do in that way about fruit-trees is of little consequence, but if it leads then to search for eggs and insects, then no doubt the birds do much good. It is too little understood, but fruit-trees and bushes that generally crop well and do not produce coarse wood growth are immensely benefited by manure applications on the surface of the soil in winter, and liberal soaking of liquid-manure also. Never mind what an old gardener has told you about forcing trees and flowers. Manure dressings do not force into earlier growth or bloom. That is for Nature, in the seasons' course, to do, and it alone. That you were caught last year had nothing to do with the manuring. Everybody else, whether manuring or not, were equally caught by the late frosts. Generally, manure mulchings tend to keep the soil and roots cool in the spring when left on after the sun begins to warm the soil. You can tell your old gardener friend that, with respect to plants mentioned from time to time in these pages, if you want anything special that you cannot find in plant lists or advertisements, no doubt you could be informed where to get them. That is a special matter, and differs from general recommendations.

2423—**Planting spring bulbs, Lilies, and Tritomas, etc.** (*Difficulties*).—Spring bulbs will make a late display on the front of your house, where you have no sun. Lilies also will succeed, although they would prefer the sun's influence early and late in the day, or either of those times. Tritomas (Kniphofia) would certainly fail in such a cold and sunless position. They prefer, instead, a nice open position, with a warm aspect. We recommend the early-flowering Chrysanthemums for outdoor culture, and a selection is given in this issue in reply to another query.

2424—**Greenhouse plants for competition in July** (*Be*).—This is a very wide question. Do you want to show six or eight greenhouse plants for ornamental foliage or flower? Or do you mean a group of various small plants? You give us no idea of your accommodation, nor whether the plants are wanted one foot or so high, or six feet high, and as far through. You see our difficulty without further information.

2425—**Treatment of Camellia in large pot** (*A. B.*).—These are easily grown if one takes care to avoid extremes in watering, and not to force the plants. An ordinary greenhouse temperature of 55 degs., rising to 60 degs. with sun heat, is suitable. Syringe freely with tepid soft water, and keep a close look out for scale, an insect that is often troublesome upon Camellias.

2426—**Poinsettia bracts falling** (*W. Moore*).—The reason of your failure with Poinsettias was too long a period in the unheated frame. It would have been better to keep them in the house all summer. From the first, Poinsettias should be grown strongly, and they are very impatient of any check, especially from a chill during the early autumn months. An unheated frame is not at all suitable for September, nor is 60 degs. sufficiently high to get good-coloured bracts. Insufficient water and liquid-manure, with the chill, are doubtless the reason of your disappointment.

2427—**Carnations bearing differently-coloured flowers on the same plant** (*Isobel*).—It is not at all uncommon for Carnations to produce distinctly different-coloured blossoms upon the same plant. Many of what are styled "florist's flowers" have this peculiarity, much of which is no doubt due to the frequent crossing and recrossing adopted to get some desired characteristic of two or more varieties into one plant.

2428—**Manure for vegetables** (*Onion*).—Yours is a somewhat chemical question, but the analysis, if it be correct, shows that the sample manure is of fair quality. The average dressing per season is from 8 cwt. to 10 cwt. per acre. You will not do wrong, if your ground is poor, to use 3 cwt. per ¼ acre. Keep the nitrate, if separate, till the crops have grown, whilst the phosphate and potash will be best dug into the ground before the crop is sown or planted, as by the time roots are formed these minerals may be dissolved. All depends on the weather. Too wet they wash away; too dry they remain inoperative. Use the nitrate as a top-dressing, to hoe in after plants have made growth, as it dissolves quickly, and must be quickly utilised.

2429—**Book on manures** (*D.*).—We know of no reliable book on manures and how to apply them to garden crops, because so much of what has been written, even those of the German and French professors, have been so much prompted by manufacturers' interests in certain manures, whose object is to sell.

2430—**Protecting Vine-roots** (*Market Gardener*).—Now that your Vine-border has well settled down you will do well to cover it over with a coating of long, fresh stable-manure to a depth of 4 inches. That will help to keep the soil warm, and, as the rains wash in the manure elements, stimulate the roots into active growth. Remove the manure in the day when the sun gets warm in the spring, and shake it back again at night to keep in the sun-heat for a few weeks. Then remove it, and give a fresh coating of manure for the summer.

2431—**Hardy creepers**.—What are the best hardy self-twining creepers to plant at base of dead Filbert-tree, having four principal limbs and about 12 feet high? I have Ampelopsis Veitchi going up quickly. Have tried Clematis, but they have died except C. Flammula. Soil, good loam, but shaded by thick Holly-hedge about 3 feet high. Would Tropæolum speciosum do?—MADOC.

*** *Your soil is suitable for Tropæolum speciosum, but it enjoys a partially shaded position. If you cannot succeed with Clematis try Wistaria sinensis. Many fail with Clematises from neglect in keeping slugs away during spring. Give a slight dusting of lime or soot when new growth commences. As regards shrub for bed, we would select the Laurustinus or Aucuba japonica for such a position. A Rhododendron would also be suitable.*

2432—**Plant leaves going brown at the tips** (*J. Simmons*).—Too cold water, also overhead watering at this season, would have the effect of turning leaves as those sent. You do not mention what heat you keep up, but if you have no artificial heat, you have either watered too freely or given too much ventilation.

2433—**Ophiopogon unsatisfactory** (*Dolly*).—We can only suggest that your Ophiopogon Jaburan variegatus is in too rich a compost, and receives far too much water. If you can give it a warm position and a rather sandy compost outside, it would be better than in the greenhouse. July is the usual date of flowering. Clivia miniata, on the other hand, needs a high temperature and plenty of moisture while growing. You cannot grow these two subjects under similar conditions.

2434—**Cucumbers failing** (*Derwent*).—We fear the chief cause of your Cucumber-plants getting attacked by red-spider and failing, is the corrugated iron bottom for your soil bed getting too hot over the pipes, and also drying the soil as well as killing the roots. You would do better to have troughs 20 inches wide, and with stout wood side 7 inches deep. The bottoms and the trellis join

the stout strips 1 inch apart. Stand these on wooden crossbars on the pipes, and fill first 2 inches with pieces of rough turf. That will keep the soil in, and let the heat pass up. Your plants should be in a single row, 20 inches apart, otherwise you seem to have treated your plants all right. No doubt the iron base is the cause of your failure.

2435—**Cinerarias flowering** (*Venus*).—You put in seed a month or more too early for late plants. If they are to be kept back now, they must be repotted and fed well when once more pot-bound. Cinerarias and Primulas will push into flower directly growth is stopped from confined roots; but we would not use larger than 8-inch pots, giving a rich compost, and helping them later with liquid-manures. Be sure and keep them free from fly.

2436—**Concrete walks** (*J. S.*).—Get gravel out and rake out all the largest stones. After excavating walk 6 inches deep, put all these rough stones into the bottom, and ram them well down. Then mix with the rest of the gravel 1 bushel of fresh slacked lime to 4 bushels of gravel wet and mix it thoroughly, then put that into the path on top of the large stones, and tread it down evenly to within 1 inch of the top of the edgings. When that has settled, then get some fine screened gravel and mix with it 1 bushel of good Roman Cement to 4 bushels of gravel. Do that thoroughly, and lay it 1 inch thick on the surface, treading and rolling it, facing it off neatly with the back of a clean spade to harden. This will be best done in the late spring in dry weather.

2437—**Peach-tree for house** (*M. A. S.*).—A really good allround early Peach is Early Grosse Mignonne. This must not be confounded with the old Grosse Mignonne, which is a later Peach. The earliest of all is the American Alexander or the Amsden June, but neither are of first-class quality, and the former has a bad habit of dropping its flower-buds. The variety we have recommended should in a fairly warm house ripen its fruit very well in July.

2438—**Tomato book** (*Belfast*).—The best book on Tomato-culture under glass is by W. Iggulden, Frome, Somerset, price, post free, 1s. 1½d. With respect to Vine-culture, almost the only book dealing specially with Grapes is A. F. Barron's 5s. book, but you may get all you want from a small manual entitled "Vine Culture Under Glass," by J. W. Pearson, The Nurseries, Chilwell, Notts, post free, 1s. 1d. A book on the construction of houses for such culture is, we fear, hard to find. It is really impossible to lay down any hard-and-fast rules as to construction, as site and surroundings govern so much. Any intelligent local carpenter or builder would best advise.

2439—**Growing Tree-Carnations** (*Venus*).—Tree-Carnations, to flower in the winter of 1898, should be struck early in the coming year. If you will procure our issue of February 20th you will find an illustrated article dealing with their propagation and culture, which goes further into the subject than can be the case in our correspondence columns. Twelve good winter bloomers are found in Winter Cheer, La Neige, Miss Jolliffe, Lizzie McGowan, Mrs. H. Cannell, Duke of York, Uriah Pike, Reynolds Hole, Reginald Godfrey, Whipper-In, Miss Mary Godfrey, and Goldmine. Alice Ayres, Duchess of Fife, Crimson Clove, Ruby Castle, Rose Celestial, Nancy, Lorna Doone, Goldfinder, Cantab, Horace, Gladys, and Leander, are capital border varieties.

2440—**Christmas Roses sickly.**—I moved some Christmas Roses into a new garden in October, and have watered them about twice a week with weak sulphate of ammonia water. Ought I to do so? The leaves are looking rather brown.—AN OLD SUBSCRIBER.

*** *You certainly should not have watered your Christmas Roses with this preparation. Liquid-manure alone is safe.*

2441—**Pruning Clematis lanuginosa**.—Does Clematis lanuginosa need cutting down in winter, or should it be allowed to die down?—R. S.

*** *Clematis lanuginosa belongs to the summer-flowering section, and needs pruning yearly. The best time to prune this variety is in February, when a portion of the old flowering wood should be removed, and at the same time the whole of the weak and worn-out growths should be cut away. In spring the plant will be much benefited by a mulching of half-rotted dung, and if the weather should be hot and dry, copious supplies of water should be given.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A. Ward.*—The three blooms you sent are Golden Christine, a very old and popular reflexed variety, and largely grown in the open in sheltered positions for a late display. A useful sort also for cutting and specimen plants.——*S. F. Helena.*—It is too late in the season to be sure of names of Roses. Yours appears to be Melanie Willermoz.——*G. W. Blackett.*—The Gladwin (Iris fœtidissima). This is a native plant, and may be planted now. It should be grown in semi-wild places for the sake of its coral-red seeds.——*Cork.*—You have sent far too many kinds. 1, Mons. C. Molin; 3, Mrs. Rundle; 6, W. H. Lincoln; 8, Fair Maid of Guernsey; 9, Mons. C. Hubert; 11, Mme Robert Owen; 12, Mrs. Gorton; 13, Florence Davis; 14, Sœur Dorothée Souille; 15, Mme. de Savin; 17, Mons. William Holmes: 20, Commandant Blusset; 22, Mr. Bunn. The remaining numbers we are not able to recognise.——*F. E.*—The Loquat (Eriobotrya japonica).——*Subscriber.*—We are sorry we cannot assist you. The fronds were too small and immature to determine correctly the names of the kinds. If you will send larger examples, fertile please, we will gladly help you. ——*W. G. B.*—Specimens too poor to name.——*F. W. M.*—1, Fittonia argyroneura; 2, F. Pearcei; 3, Acalypha musaica; 4, Peperomia rotundifolia; 5, Maranta zebrina; 6, Dieffenbachia var.; 7, Rivina humilis; 8, Selaginella denticulata; 9, Bougainvillea glabra; 10, Asparagus deflexus scandens. Please only send six good specimens on another occasion.——*W. S., Weekly Reader.*—2, Begonia fuchsioides; 3, Pteris serrulata cristata; 5, Pilea muscosa (Artillery-plant); 6, Peperomia marmorata; 7, Linum trigynum.——*A. Mitchell.*—1, Commandant Blusset; 3, William Westlake; 4, Florence Percy; 5, Rosinante; 6, La Triomphante; 7, Golden Christine; 8, Julie Lagravère; Others not known. As you surmise, low temperatures and dampness caused the spots on No. 2.——*Subscriber.*—Sempervivum Haworthi.——*Robert Henry.*—1, Croton Reidi; 2, angustifolium; 3, Rogerianum; 4, Queen Victoria; 5, Variegatum superbum; 6, Disraeli; 7, Warneri; 8, Dieffenbachia variegata; 9, Abutilon vexillarium.——*Miss Hopper.*—There is no doubt about the Chrysanthemum; it is the variety Etoile de Lyon, from terminal buds. ——*Derry.*—1, Euphorbia sp.; 2, Hypericum perfoliatum; 3, Veronica speciosa; 4, Veronica salicifolia; 6, Phalangium variegatum; 7, Veronica Andersoni variegata; 8, Too poor.——*Mum.*—Your flower was damaged almost beyond recognition when it reached us. It very much resembles William Tricker, a rich, light pink, and a variety which will develop eight to twelve useful Japanese flowers.—— *Jack* Chamæcyparis sempervirens; 2, Wellingtonia (Sequoia) gigantea; 3, Taxus cuspidata; 4, Not recognised; 5 and 6 are Clematises, but, as they are not in flower, cannot name correctly. Send again when in flower.—— *E. B.*—Cotoneaster frigida.——*T. H.*—Specimen badly crushed. Probably a variety of Berberis vulgaris.——*H. O.* —1, Aucuba japonica; 2, A. japonica var.; 3, Ilex Aquifolium marginata aurea: 4, I. A. argentea albo marginata; 5, I. heterophylla aurea picta; 6. I. A. ferrox argentea; 7, Buxus sempervirens variegata.——*J. D. A.*—Salvia argentea.

Names of fruit.—*C. D. H.*—1, Hall Door; 2. Hoary Morning; 3, Tyler's Kernel.——*Old Subscriber.*—Hollandbury.

TO CORRESPONDENTS

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and addresses of sender.

Inquirer (Monmouth).—Please write to the secretary, Mr. R. Dean, Ranelagh-road, Ealing, W.——*Shrub, Barnsley.*—We are unable to help you, but go to some good gardener near and ask him.

LAW.

THE RIGHT OF PRIVATE OCCUPIERS TO REMOVE PLANTS AND FLOWERS AND FIXTURES.

THE numerous questions asked in connection with this subject indicate that many people do not understand this branch of the law, and so a brief explanation will doubtless be welcome to many.

The rule of law for a very long period was that all things fixed or annexed to land became a part of the freehold, or, in other words, became the property of the freeholder and could never be severed or removed without his consent. So if a man built a house of brick or stone, and by the foundations let the building into the ground and fastened it thereto, it became part of the freehold and so the property of the landlord. And although while the tenant continued to occupy the land he had, of course, the use of the house, yet when his tenancy ended he could neither pull down nor remove the house, nor yet compel his landlord to make him any compensation. The law does not care whether the tenant had foreseen this result when he erected the house or not—with such considerations the law is not concerned. So that if a tenant drove stakes into the ground and made a fence, or planted trees, or flowers, or shrubs, or fruit-trees, it was all the same—these things at once became the property of the landlord, although, of course, the landlord could not touch them until the tenancy came to an end.

The tendency of modern legislation, and also the tendency of the decisions of the law courts, has been to very materially modify this harsh doctrine, and a good many years ago the courts decided that where a tenant erected fixtures for use in his trade he could, when he quitted, remove the additions he had made. Such additions were necessary for the purposes of the trade, and if the tenant was not to be allowed to remove them no tenant would put them up, and so trade would suffer. It would naturally have been thought that erections by a farmer for the purposes of his business as a farmer came within the rule as to trade fixtures, but the courts decided that this was not so; and so nearly fifty years ago an Act of Parliament was passed which gave some relief to farmers in this matter. Another Act, passed in 1883, went a very great deal further, and, by an Act passed in 1895, market-gardners were placed in a still more favourable position; farmers and market-gardeners being able, on compliance with the conditions prescribed in the Acts referred to, to remove anything erected for their trade or business. But the rights of private occupiers have not increased in corresponding fashion. For many years a custom has been in existence, and is now fully recognised by law, by which such occupiers may remove articles annexed to the freehold for ornament and convenience when the fastening is but slight and the article can be removed without injury to the freehold—that is, to the landlord's property. In law such articles are in some sense looked upon as mere furniture lightly attached to the land (or the building) for use and convenience. But when when such things as plants and trees are set in the ground and they grow there, they become permanently fastened or annexed to the freehold, and they cannot afterwards be removed. So a tenant of a garden may make a wooden greenhouse and let it stand on the ground, and perhaps fix it in position by holdfasts to the garden wall, and he may remove it when he chooses, as it is not annexed to the freehold, and the slight fastening can be removed without injury to the wall. But when a tree or a shrub or a flower is planted its roots grow into the soil, and it becomes annexed to it. The law forbids the tenant to afterwards remove it. It is no doubt hard that a landlord should thus be enabled to reap the benefit of all the outlay made by a tenant, and although it would be equally hard if the landlord were compelled to pay the tenant who was leaving for things which would not in any way enhance the value of the property, yet the injustice might be remedied by allowing the tenant greater liberty to remove the things he had added to the place. However, in this column we deal with the law as it is and not as it ought to be, and if the readers of GARDENING will remember the principle of law which is explained in this article, they will be better able to understand the answers from time to time given to questions about fixtures and flowers and plants which an outgoing tenant would like to take away with him, or for which he would like to compel his landlord to give him compensation.

K. C. T.

The right of a tenant to remove shrubs, &c.—I have recently taken a new house on a yearly tenancy. The garden was "laid out" in a rough way by the builder, and I have since planted several fruit-trees, shrubs, and evergreen trees, amongst which were many coniferæ. In the event of my having to leave the house should I be in order in removing the trees, etc., that I have planted, or could I claim their value from the landlord? —SOUTH.

*** As you are only a private occupier you could not remove any of the trees or shrubs when you quitted, neither could you enforce from the landlord any compensation for these matters.

Notice necessary to determine tenancy of greenhouses.—I rent several greenhouses for trade purposes at twenty pounds a year, payable half-yearly on January 1st and July 1st. In the rent-book there is no statement that I am a yearly tenant. It is there stated—"Tenant in account with landlord, half a year's rent, ten pounds." Must I give a year's notice to quit, or can I leave at the end of this month, as my landlord has sold the greenhouses? Does not the sale break the tenancy? I have not yet received the customary notice of the change of landlords.—L. G.

*** On the facts stated I have no hesitation in advising that you are a yearly tenant of a holding let for the purpose of market-gardening, and that a year's notice expiring with a year of tenancy is necessary to determine the tenancy. The sale of the greenhouses does not in any way break the tenancy, and you continue tenant on exactly the same terms as before the sale. If the greenhouses were let to you at a low rent, and you wished to keep them, but the landlord wished to take possession of them this month because he could re-let them at a much greater rent, and he contended that the sale had broken the tenancy, I think you would view the proposal in a very different light to that in which you now see it.—K. C. T.

An insufficient notice to quit.—For twenty years I have occupied some land as a nursery and market garden at a yearly rental without any written agreement, the tenancy commencing at Christmas. In June last I received notice to clear out at Christmas, the land being required for building ground, and I signed a note admitting the receipt of the notice, and I have sent in a claim for compensation. Does that notice stand good, having signed the same?

Or can I remain in possession until the expiration of a year's notice terminating with a year of tenancy?—E. A. G.

*** As you occupied the land on a yearly tenancy as a market-gardener and nurseryman, your tenancy could only be determined by a year's notice. The fact that you in writing acknowledged the receipt of the notice sent you, does not amount to a surrender of your tenancy to take effect at Christmas, nor yet to an admission that the notice was a good one. If you acted in ignorance of the fact that you were entitled to a year's notice, you may certainly withdraw the claim for compensation of which you have already given notice. But if the note you signed was something more than a mere acknowledgment of the receipt of the notice, you had better consult a solicitor at once as to its effect, for time is of the greatest importance to you, and it might be impossible to further advise you through these columns in time to be of any real service.

Quitting a garden-plot.—Since May, 1895, I have had a plot of land behind my house for use as a garden, and I have paid rent for it half-yearly. The landlord now wants the land; he is willing to pay for the fence I have erected, but not for the plants. Can I remove the plants, or demand proper notice to quit? On the plot I have a house 25 ft. by 10 ft., in which I grow Tomatoes for sale. Can I be classed as a market-gardener?—R. L. R.

*** The definition of a market garden in the Market Gardeners' Compensation Act is "a holding, or that part of a holding, which is cultivated wholly or mainly for the purpose of the trade or business of market-gardening." And as it seems to me, the trade or business of a market-gardener may be defined as growing fruit and vegetables for market. You do not say if you have a written agreement of tenancy, but it may be presumed that you have none, and you do not say if the plot is let on a yearly tenancy; but I presume that it is so let. I may say that if it is let to you at so much a year, although to be paid half-yearly, it will be let on a yearly tenancy. You do not say if you have cultivated the plot wholly or mainly for the sale of the produce, and if the only things that you are in the habit of selling are Tomatoes, I think it very doubtful whether you can be said to cultivate the plot as a market-garden. But these things are not very material, because you are master of the situation. As the landlord has not given you a proper notice to quit, he cannot compel you to quit, and you may refuse to give up possession unless he allows you to remove everything you wish to remove. As a yearly tenant (even though not a market-gardener) you cannot be compelled to quit except at the end of a year of tenancy—that is, in May—and to determine the tenancy the landlord must give you half a year's previous notice. The effect of this is that you cannot be compelled to quit until May, 1899, as a proper notice has not yet been given, and it is now too late to give that notice half a year before next May. So you see the position is the same in most respects as if you were a market-gardener, for although you would then be entitled to a year's notice to quit, you could, of course, be required to quit in May, 1899.—K. C. T.

Sub-letting furnished house.—I took a furnished house for three years, and at the end of a year I find that I do not like it and I wish to leave it. Can I sub-let it for the remaining two years without my landlord's consent? It was not mentioned in the agreement.—A. B.

*** If your agreement does not contain any prohibition against sub-letting, nor words to that effect, you may sub-let without the consent of your landlord. Perhaps, if you asked him so to do, the landlord would take the house off your hands and find a tenant for himself. Remember that, if you do sub-let, you will remain liable for the rent, and also for any breach of the agreement your sub-tenant may commit.

Kales and Beetroot in the flower garden.—We see, without much pleasure, a plate in the *Revue Horticole* of variegated Kales, which unhappily are used by some for the "decoration" of gardens. Now, the form and colour may be as fine as in many other things, but for the decoration of our gardens such things are rubbish, if only from the fact of their evil odour after hard winters, and no waste of time could be worse than growing such things, which never can take a place in any true flower garden. Of the same character are the purple Beets, used at Kew in the flower garden. Whatever we do in the flower garden, it is hardly necessary to use Kales and Beet in it when there are so many lovely things we neglect or forget, and things, too, like some of the wild species of Azalea and Lily, which may show their graceful faces to us for many years after planting them. If we wish to cool our eyes on esculents, the best way is to go to a good kitchen or market garden, either about London or Paris, where we willingly admit there are good forms of leaf and much better colour than in these variegated Kales and liver-coloured Beets.—*Field.*

BEES.

Hive making (*Alec Ashby*).—The best course for the amateur hive maker to follow is to obtain a modern hive as a pattern to work from. Many of the manufacturers are willing to supply bar-frame hives in the flat, all the parts being sawn out, but not nailed together. From a pattern of this kind you could construct your hives far more accurately than from any detailed instruction we could give you. The great point to be kept in view is to let the hives be of such dimensions as to receive the standard frame, the outside measurements of which are 14 inches long, by 8½ inches deep, the top bar being 17 inches long and ⅞ inch thick, while the bottom bar is ⅜ inch, and the side bars ¼ inch thick. A pattern bar-frame would much help you if you do not wish to buy your frames ready-made. As worker comb is usually constructed about ⅞ inch thick, frames to receive them are made about the same width, and ½ inch less in length than the inside of the hive, so that a ¼ inch is given at each end as a passage for the Bees. If less than this space were left the frames would be fixed with propolis by the Bees to the hive sides, rendering the combs immovable, and if more were allowed it would be filled with comb and honey in a busy season. Between the bottom bar and the floor-board a space of about ⅝ inch is left. Frames ⅞ inch wide can be placed ⅝ inch apart, making them 1½ inches from centre to centre. In order to derive the full advantages from the movable-comb system, the inside measurement of all hives and the outside measurements of all frames must be uniform, accurate workmanship in their manufacture being of the greatest importance, and amateur workmanship often fails to prove satisfactory in this respect. Yellow deal or Pine is mostly used in the construction of frame hives, an inch in thickness, which when planed on both sides reduces it to about ⅞ inch, which is sufficient to make them strong and durable. The sides of the hive should be rabbeted on the top to receive the frame ends; by having a little space under the ends of the frames they can be more easily taken hold of, and the Bees are not so liable to fix them down with propolis. It is desirable that the hive sides be either dove-tailed or fitted with a double rabbet, and nailed at both edges. Floor-boards should be moveable, and extend to some distance beyond the front of the hive, sloping towards the ground, and passage-ways may be sunk in them for the entrance of the Bees, about 7 inches long and ⅜ inch deep, or passages may be cut in the bottom of the hive front, and made to close or contract as needed by means of blocks and slides. Division boards are necessary to contract or expand the internal space of the hive as needed, and are made to fit closely to the sides of the hive, and to move on the rabbets laterally. The roof should be made to slope from front to back, and of sufficient depth to hold a crate of sections. The front and back walls of the hive must be made ⅜ inch lower than the sides, so that when the frames are in the top bars may be level with the sides of the hives and two strips of wood are put on the outside to cover the spaces between the top bars. If stout strips of zinc be provided for the frame end to rest upon, these will prevent the fixing down of the frames by the Bees. For keeping frames the proper distance apart broad shoulders, as they are termed, or distance pins, should be provided, many Bee-keepers, however, distance their frames without guides. The natural distance between sealed honey-combs is about a ¼ inch, while that between brood combs is about ⅜ inch. Bees winter better in double walled hives than in single ones, but the wood used for the inner walls may be thinner than that used for single walled hives. The outer and inner walls are joined by slips of wood at the top and bottom edges, a space of 2 inches being left, which is filled with chaff or cork-dust when preparing hives for winter; if, however, the hives are to be kept under cover and protected from the weather, double walls are not necessary, and you will find single walled hives much easier of construction. You would do well to obtain a manufacturer's illustrated price list, choose the most suitable hive for your requirements, and have it sent you in the flat as a pattern to you in constructing as many as you require. A hive to hold ten frames is the most suitable for ordinary localities.—S. S. G.

FOOD FROM GARDEN, ORCHARD AND FIELD.

Pyrus japonica jelly (*Lady S.*).—Peel the Japan Pears as thin as possible, throwing the fruit into a basin of cold water to keep it from discolouring. Allow for each pound of fruit three pints of cold water, put the fruits into a preserving-pan, bring them quickly to the boil, and let them boil for one hour until quite soft. Strain the water from the fruit, pressing out the juice only. Weigh the water, and allow a pound of the best cane-sugar to each pound of water. Put the sugar and water into a clean preserving-pan, and boil quickly, stirring constantly after the sugar is melted. When a little dropped on a plate jellies pour at once into hot jelly-moulds or gallipots. Cover while hot with white pasted paper, and store in the usual way. A nice jam can be made as well of the Pears—for this they must be cored—allowing a pint of water to each pound of fruit, the water and fruit being weighed together. Allow as for the jelly a pound of each—the fruit and sugar. Put on together in the preserving-pan, and boil until a little jellies quickly on a plate.—B.

POULTRY.

THE SELECTION OF STOCK POULTRY.

A FEW weeks since, in response to a request made by a reader of GARDENING, I wrote two or three articles on various topics connected with poultry farming, and in the course of those papers I described the lines I should follow were I about to embark in an undertaking of the kind. Perhaps the most important factor as regards success has still to be mentioned—namely, the selection of suitable stock Fowls. At any rate, it cannot be denied that a considerable number of amateur poultry keepers fail to make their Fowls pay for the simple reason that their birds cannot by any stretch of the imagination be said to belong to the class which are most suited for the end in view. Poultry keepers should recognise from the start that Fowls as now kept in this country ought to be separated into two classes—those which are looked upon solely as exhibition stock, and those which are kept with a view of supplying their owners with eggs or table Fowls. It would, perhaps, be an exaggeration to assert that the bulk of the owners of pure-bred Fowls look upon their birds as exhibition stock; at the same time, it cannot be denied that the owners of such Fowls always have the impression that their birds possess a higher value than the stock belonging to their neighbours, and in most cases, especially where the strain is related to some prize-winning family, it is felt that there is a possibility some day of securing high honours in the prize pen with some of the home-bred stock. So long as this high opinion of one's stock exists in the mind of the owner, I fear there is little hope of his studying the poultry question from the utility point of view, for he will never be inclined to part with his birds at their actual value, and will too often be persuaded to invest in outside blood, which, so far as egg-production is concerned, may be far inferior to his own. But few ordinary poultry-yards are as valuable from the exhibition standpoint as their fond owners

imagine them to be. It should be remembered that exhibiting fowls is now reduced to a fine art, and the owner who sees perhaps but one or two shows a year—and those of a low order, so far as class is concerned—stands a very poor chance of winning against the regular exhibitors, whilst the prospect of selling eggs or young birds in competition with the owners of well-known winning yards is equally poor. I mention these matters in order to show my readers that it cannot pay them to produce a lot of chickens each year for the mere object of selling them for exhibition purposes or for exhibiting them on their own account, and it is far more satisfactory to recognise at the outset that the second class to which I have referred is that in which most poultry-keepers should enroll themselves. In this class there is always a trustworthy goal to make for and always prizes to be won, without any trouble as regards the breeding out of objectionable points in feather or legs, or any anxiety as to the results of an introduction of fresh blood. All that is required on the part of the owner is to know from the outset the end he has in view, and then to follow closely the lines he has laid down without interference or advice from any outside party. In my papers already referred to I pointed out that a poultry-farmer would find the sale of new-laid eggs the most lucrative department of his business after the concern had settled down into thorough working order, for the returns would be regular, and the only outgoings would be the expenditure in food and labour, since the sale of surplus adult fowls should practically cover the cost of rearing the pullets until they are ready to lay their first eggs. But the sale of eggs on a large scale at the best possible price must depend upon two or three matters which the poultry-keeper must take into account, or he will find himself hopelessly beaten. First, his output must be tolerably regular the whole year through. Unless he can guarantee a good number of newly laid eggs from October to February inclusive, he may rest assured that his eggs from March to May inclusive will not be welcomed by the majority of his customers. Secondly, the eggs must be of good size, and be fairly uniform in appearance. Thirdly, they must be clean when taken from the nest, for no amount of washing will make them look as well as an egg which has never been soiled at all. The rock on which most poultry keepers get wrecked is the first; they cannot point to a full egg basket at mid-winter, although at other seasons their supply is excessive. Here it becomes a question of judicious blending as regards the selection of stock. A hen—to lay well at Christmas—must be well feathered, and her comb must not be too large. The non-sitting breeds possess large combs, and in severe frosts these become nipped, and the bird is thrown out of time for nine weeks in consequence. But by crossing the feather-legged breeds such as the Brahma, Cochin, or Langshan, or the kindred breeds (Plymouth Rocks, Orpington, or Wyandottes) with a cock belonging to some non-sitting breed (Leghorn, Minorca, or Andalusian), we obtain the very bird for our purpose, possessing great hardihood, great laying powers, no great zeal for sitting, and no great appetite, as is the case with the heavy breeds from which it has sprung. The cockerels of such a cross—useless for breeding purposes—come in splendidly for early table Fowls at a season when they are always in great demand. With regard to sitting hens—the demand for which should be encouraged and met—I would prefer a cross with the Indian Game, or Dorking and the Cochin. For home use I have found the cross above mentioned to prove all that could be desired, but I cannot say how the hens would answer if sent on a railway journey, and I feel that buyers of such hens are justified in insisting upon the hens being bred from sitting blood on both sides. As to table Fowls—that is, chickens, the breeds available should be limited to three—namely, the Dorking, the Indian Game, and the Houdan. The old English Game ought, however, to be added. To secure the best market for fat chickens the breeder should confine his attention to the above list, and he will not be far wrong in the end. On the whole, crosses will answer better than pure breds, as there is a more rapid growth and greater hardihood. It only remains to caution those readers who may be inclined to go in rather largely for poultry keeping that they should be somewhat chary in accepting advice from, it may be, interested passers-by. It is only by strict adherence to a carefully worked-out plan that success can be achieved, and to depart from the accepted track is certain to result in disaster.

DOULTING.

Snowy weather in the poultry yards.—We have now reached that period of the year when we are liable to wake up and find the ground covered with several inches of snow. Beautiful as the country may appear when clothed with this garb of purity there cannot be a doubt that there is no weather more trying to Fowls than snow, and poultry keepers should be on their guard so as to lessen the discomfort of their birds as far as it lies in their power to do so. Probably the birds are scared by the whiteness of the surroundings when they are first let out; at any rate, active birds rarely settle to their morning feed under such circumstances, and often go hungry throughout the day. When a thaw sets in, matters are really worse, for the legs of the Fowls, as well as their plumage, are thoroughly drenched, and this must lower the bodily temperature to a great extent. Unless this state of affairs can be promptly remedied, a falling off in the egg supply is absolutely certain, but under good management it is possible to keep up the returns. The first step towards this much desired end is to take care that the hens shall remain in the roosting-house until their food is ready for them in the morning. Next, this food should be given quite warm, and be put down in troughs or on ground which has been cleared of snow. Lastly, the birds should be restricted in their runs as much as possible during the continuance of the snow. The ground, as already stated, should be cleared each morning as far as circumstances permit, and then it will be found that the Fowls keep, for the most part, to the bare spots, so that the snow scarcely makes itself felt. If the day be of what is known as a "blizzard" type, driving rains and snowstorms succeeding each other, it is really the best plan to keep the Fowls indoors from morning to night. They may be fed in troughs, and water should also be available, whilst in some cases a Cabbage or Swede may be placed in a box for them to pick at. All this means trouble, of course, but it may also mean a fair daily return in the shape of new laid eggs, a matter which cannot be beneath the notice of any poultry keeper at this season who aims at securing a profit from his Fowls. Frosty weather, when dry, may be far more trying as regards the cold, but beyond this there is little discomfort during the day, and well-bred and well-fed Fowls generally do well at such times. Dry, frosty weather is indeed to be preferred to rain at this time of year from the laying point of view.—DOULTING.

BIRDS.

Bird stuffing (*B. H.*).—The art of taxidermy is not so easily acquired as some amateur naturalists imagine, for the sorry specimens and ghastly representations turned out by some would-be bird-stuffers are simply libels upon what the subjects were during life. If you wish to become proficient in this interesting pursuit you should take lessons of some practical man. There is a manual called "Practical Taxidermy," published at 170, Strand, London, which would be helpful to you, as it gives instructions to the amateur in preserving and setting up natural history specimens of all kinds, and contains working diagrams; the price of this book is, however, 7s. 6d. Much may be learned as to the arrangement of ornithological specimens by a visit to the Natural History Museum, South Kensington, where a splendid collection of British birds and their nests are arranged with their natural surroundings in large glass-cases.

Diamond Sparrow (*R. S.*)—The smooth, round perches with which bird-cages are usually furnished do not permit of a firm grip of the claws, and cause constant irritation to the feathered inmate; square perches are much more suitable, with just the sharp edges slightly rounded off, and those that are somewhat broader than they are thick are the best of all. A split twig, the bark side being placed uppermost, makes an excellent perch; the bird's claws cling easily to it, and the bark is softer than planed wood. The claws of birds that sit continually on round perches often become so long as to impede locomotion, and dislocation of a joint is sometimes caused through the nails becoming fixed in the wires of the cage. The claws of cage-birds require to be trimmed from time to time to guard against mishaps of this kind, but before cutting the foot should be held in a good light, when, with a pair of pliers or sharp scissors, the superfluous portion of the nail should be taken off, care being taken not to cut so close as to reach the thin vein of blood which runs three-parts up each nail. These little birds are very frugal livers, and do not appear to desire change of food; you cannot do better than continue to feed as hitherto.—S. S. G.

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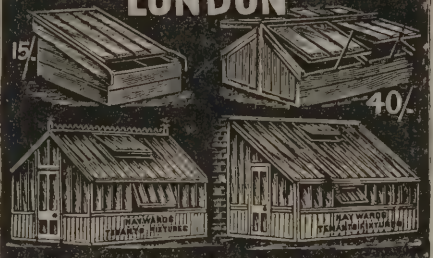

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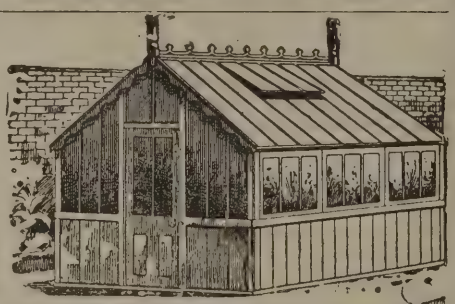

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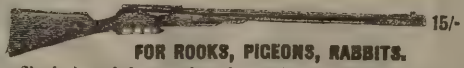

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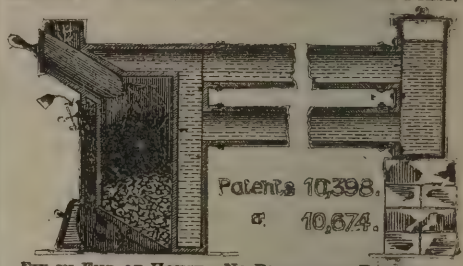

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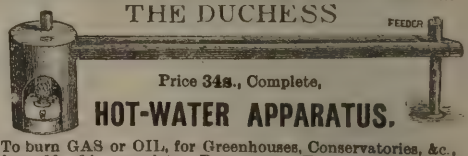

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No. 980.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* DECEMBER 18, 1897.

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ROSES.

SEASONABLE WORK.

Now that growth is quite ripened there is no reason why we should not take advantage of the open weather to cut off the tops of all budded stocks. In the case of dwarfs in the open, it is a good plan to cut off to within an inch or so of the Rose-bud. This will clear the way for a very shallow digging of the soil between the rows, by which means the soil should be laid up as roughly as possible. Do not, upon any account, cover the bud itself; it is far safer exposed than covered with a little soil or manure, that will hold moisture and be frozen through and through if severe weather should set in. Experience has proved this over and over again. Some of my readers may think of the apparent strangeness of this, seeing that I recommended the earthing up of dwarfs in order to preserve the dormant eyes at base of the plants; but these latter are more numerous, and better able to withstand such burial than the single bud only inserted during the past summer. I know of so many failures from covering that it is never practised in our Rose gardens now. Beds, side by side, of the same varieties, and under similar conditions, have been treated both ways. Covered they were a failure; when exposed we lost very few buds indeed.

It is time all hedge Briers for stocks were planted now. Do not attempt the old-fashioned plan of double rows of these. They are more awkward to bud; the roots get broken in transplanting, and the whole work is crowded. Far better plant a little thicker in a single row. Nor is there any gain in overcrowding the standards; for if we do have more upon the same space we generally break, or otherwise fail with so many that the resulting plants are not more numerous.

Seldom have we had a better time for transplanting Roses, and those done a month or so back are looking plump, while it is certain most of them have made some little root progress.

It is time to prepare for the winter propagation of Roses by grafting. In our issue for February 13th we gave a few illustrations of more than one method of grafting Roses. Stocks may be lifted at any time now, and a start made where a little bottom-heat and a propagating-case are available. Wood from plants outside should not have had much frost upon it if you are to have much success. That from pot-plants and from under glass is much the best for grafting.

Climbers under glass need pruning; indeed, all pot-Roses would be better if pruned now and stood in a cool pit or frame. As several queries are to hand about pruning such as Maréchal Niel and other strong growers, I may, perhaps, be excused for once more repeating that last year's wood should not be removed from these. Far too many shorten the long, maiden rods of growth, and thereby lose a heap of good blossoms. See that no scale exists upon the wood; and, if so, take strong measures before new growth pushes out. Avoid any hurrying of the plants as far as possible, and be very careful as regards the first attack of mildew and insect pests.

It may happen that some of my readers receive a consignment of Rose plants during a sharp frost. In that case the parcel should not be unpacked at once, but taken to a cool cellar and left to thaw very steadily, unpacking and laying in the plants by the roots, or planting them as soon as the ground will permit. If dry or shrivelled when received, it is a good plan to bury the whole of the plants for a few days, when the wood will plump up steadily, and after be little, if any, the worse. A. Piper.

Crimson Rambler Rose.—I have had six trees of the above for two years; they are planted in different aspects, and have had plenty of manure to the roots; but they have all proved unsatisfactory, and have neither flowered nor made much growth. I shall be glad of information as to treatment required? The Crimson Rambler is greatly recommended as one of the most successful Rose-trees, and I cannot understand why mine are failures.—Trixie.

*** Neither can we, for it certainly grows remarkably well in most situations, and one which came under our notice this summer covered an enormous space, as well as throwing immense pyramidal trusses of blossom. We have known of a few instances where a plant did not grow away with much vigour at first, but they invariably pushed out of this the following season. It needs no special treatment, and we fear you have been over-generous in the use of manures.

Pruning Roses *(Botany)* — We have much pleasure in answering so lucid a query as yours. Do not prune the Mme. Alfred Carrière, except to remove the immature points of growth. Simply shorten back the side shoots of the second climber. You do not give the name of this Rose, but if a climber, it has not done well not to exceed 2 feet in height. By no means shorten the 8-feet rod upon your third climber, nor the Maréchal Niel, both of which we observe are in beds. The bushy growth of Duke of Connaught may be cut back to three or four eyes. Next year this Rose may make rods of several feet, and these can be pegged down to advantage.

PROPAGATING.

One of the most interesting subjects connected with gardening is a study of the various methods by which plants may be increased. The most natural is from seeds, but when this fails, which is often the case, other means will be found. There are many plants which rarely bloom, and others which, though they flower, rarely perfect their seeds; others, also, which have become abortive through the pollen-bearing parts being transformed into petals, as in the so-called double flowers. In many instances where two species have been crossed the hybrids prove abortive, although the flowers may appear perfect. In taking up the subject of propagating and dealing with the treatment required for various subjects it is somewhat difficult to avoid a repetition of the same advice when dealing with some details. The better the accommodation the easier it will be to succeed, but when we see so many failures where all other conditions appear to be the most favourable, and successes under adverse circumstances, it becomes evident that careful attention to the smaller details is the secret of success.

This applies equally to all of the various methods of propagation. Taking seeds as the first example, I believe where failure occurs it will often be found that the cause is in the treatment rather than that in the quality of the seeds. In the first place, the natural conditions under which seeds would germinate must be studied, and here we find many going the very opposite to Nature by keeping such as usually spring up under the influence of the brightest sunshine under heavy shading, and although the seeds may make a start under these conditions, they will generally die off before they get established. Of course there are many subjects which require shade, but, speaking generally, it is far better to give plenty of daylight from the first start. I remember the first time I sowed Centaurea candidissima I placed the seed pots in a pit and kept them carefully shaded, and only succeeded in getting a small percentage of plants. I now place the seed pots on a shelf where they are fully exposed to the sun, taking care that they are kept moist, with the result that the seeds germinate as freely as Mustard-seeds, and short sturdy plants are formed which rarely damp off or give any trouble. Taking Primulas, Cyclamen, and similar plants, if the seeds have a slight covering of Sphagnum Moss and are exposed to the light there will be no fear of failure. I may here mention that I find fresh Sphagnum chopped up very fine and mixed with some sand an invaluable covering for many seeds, especially those which lie some time before they germinate. Many seeds perish in a short time if kept in a dry, warm place, while if put into a close tin box in a cool place they may be kept for a very long time; and while some seeds require a good deal of harvesting, others are fit to be stored away as soon as they are ripe enough to fall from the seed-pods. Palm-seeds are, perhaps, among the most difficult to deal with. It is only those who get them directly they are imported and sow them at once that can rely on success. Although the seeds or nuts are very hard, the vital part perishes quickly. To all outward appearances the seeds may seem good, but if they are cut at the point where the cotyledon starts from it will be found to be shrivelled up. Seeds which have been packed moist enough for some to spear on the journey will generally prove the most satisfactory; this especially applies to Arecas and Cocos. Araucaria excelsa is another example of hard-shelled seed which perishes quickly. It is rarely that imported seed will germinate.

Aralia Sieboldi, which is now grown so extensively for market, is chiefly obtained from imported seed. It is always recommended that the seed should be sown immediately it arrives, but I find if kept close in a cool place it will retain its vitality for some months. In almost all

instances seeds require to be well ripened before they are sown, but there are exceptions to this. Canna-seeds, if sown before they have become too hard, will germinate more quickly than when thoroughly ripened. Seeds which have been kept should be soaked in water until they begin to swell before sowing them, but the water should be changed every day. Many seeds will germinate better and more evenly if soaked for a day or two, but care must be taken that they do not get dry again before they are sown. I like to sow them as soon as the water is poured off, shaking a little dry sand among them to keep them from sticking together. With seeds which lie in the ground a considerable time before they germinate there is a risk of losing them through a fungus. To prevent this they may be kept in moist sand for a time. Then wash the sand out and sow them in fresh, clean soil. Most of the coniferæ seeds should be treated in this way. A.

GARDEN WORK.*

Conservatory.

Rearrange the plants as often as time can be found for the work; not only will changes add to the general effect, but the plants themselves, if they could speak, would approve of it. A cleaning down and a change of position is beneficial to health both under glass and outside. Plants growing in the border must not be allowed to suffer for want of water. Less water will be required during the short days, and as the time moves so rapidly with the busy man, he is sometimes apt to forget; and a dry spot in a bed or border is more difficult to moisten than in a pot or tub. In planting hard-wooded plants, such as Camellias, Acacias, etc., in a bed in the conservatory, do not plant too deep; they have a tendency to get deeper in the soil, and the hard-wooded plants will not bear the earth above the collar. If any hard-wooded plant in the border has a sickly look the chances are they are too deep in the soil. The same thing occurs sometimes when plants are repotted. A Fuchsia or Pelargonium may be dropped a little deeper in the soil, but not the plant with a hard woody stem. Naked walls should be covered with greenery, even if there are no flowers at this season. Acacias are good wall plants, and they may be useful in covering pillars, and Acacia Riceana is a beautiful plant for training up the rafters loosely—*i.e.*, the side shoots permitted to hang about. Acacia grandis and A. verticillata look well against the back wall, and will flower freely later, and that beautiful old-fashioned plant, the Double-blossomed Myrtle, is at home on the wall of a conservatory, and the green sprays are so sweet for cutting to mix with flowers. Of late there has been a demand for the long trailing growth of Smilax for table and other decorations. The plant is easily raised from seed and soon begins to run up. It has tuberous roots, and when cut down and rested a bit it shoots up again.

Forcing House.

This structure, in the moderate sized garden, has to do much work, that in a large garden is carried out in separate structures. A good deal of the propagating will be done here, and although the general work of propagating has not begun yet, there is always something demanding attention. New varieties of plants which one wants a stock of will not be allowed to rest long where the propagating instinct is strongly developed, and where there is plenty of genial warmth cuttings will strike any time. Besides, where early Cucumbers and Tomatoes are required, it will soon be time to sow a few seeds of each to grow a few in pots or boxes. We grow our first crop in boxes, and they are ranged along the sides of a span-roofed house, and trained under the roof, so that we have nearly all the bottom of the house for other plants, and by-and-bye when the days get longer and the sun warm the shade of the Tomatoes will do no harm. Young Cyclamens coming on for next season's flowering will require pricking off, and young Fuchsias struck in August, intended to make decent little specimens by midsummer, will soon be ready for 5-inch pots, and will enjoy a little warmth.

The Rose House.

Roses under glass may either be planted out in beds of good soil or be grown in pots, or a conservatory, if the two methods can be adopted. But if the house is small and the plants are all grown in pots, if possible, plunge the pots in a bed of leaves. The genial atmosphere produced by the leaf-bed is of great value in bringing forth very fine blooms and plenty of them, and such plants are usually free from insects and mildew. Very little fire-heat will be required till some progress has been made.

Early Vinery.

As soon as the eyes break tie the rods up which have been bent back. If the wood was well ripened the buds will break freely, but if there is a sluggish cane among them take it in the hand and twist it till the force applied extends to the bottom of the cane. This treatment will give liberty to the sap vessels, and the eyes will soon push. Night temperature about 50 degs. till the buds break. May have a moist atmosphere by using the syringe Very little ventilating will be required till the leaves begin to unfold, then advance the night temperature to 55 degs. and ventilate when the thermometer runs up to 70 degs. Close early in the afternoon and damp down. If the pots are plunged in a bed of leaves very little water will be required at first.

Early Peach House.

Keep a drier atmosphere when the flowers begin to open. Use the camel's-hair pencil or the rabbit's tail when the pollen is ripe and dry. Night temperature 48 degs. to 50 degs., ventilate at 60 degs, and close early, so that the thermometer may run up a little after closing.

Window Gardening.

Berry-bearing plants have a cheerful effect at this season. Pernettya speciosa is full of berries now, and makes neat little specimens. It is quite hardy and will do in the window-boxes outside. Aucubas and Skimmias are also attractive when well berried.

Outdoor Garden.

The autumn has been very suitable for planting operations, and a good deal of Rose and herbaceous planting has been done. But it is useless to plant Roses or hardy plants of any kind without a thorough preparation of the soil But in trenching up land where the surface is bad better not bring up much of the bad soil. Even when manure can be used freely, the inert stuff from below requires exposure and intermixing before plants of any kind will root freely in it. Especially avoid bringing up clay from below to the surface, unless the clay can be burnt or exposed to sufficient heat to make it fall to pieces and mix with the soil. One of the best hardy plants for massing is Scabiosa caucasica. The plants are still in flower, and it is one of the best hardy plants for cutting or for exhibition. I was watching an amateur gardener planting Roses yesterday, and in every hole was placed round the roots a peck of good mellow loam. This gives a little trouble, but it brings success above the average. Pull weeds out of Ferns and the lawns. Use the roller frequently. Do not worry about the worms—the work they do is beneficial to the Grass. Millions of tons of soil are scattered over the lawns and pastures in the course of a generation that could not be done in any other way. Hardy plants in pots should be plunged in ashes to protect roots and pots.

Fruit Garden.

There is no difficulty in selecting a dozen or more good Apples from the numbers catalogued now. Among the best are Stirling Castle, Bismarck, Bramley's Seedling, Lane's Prince Albert, Blenheim Orange, Warner's King, Duchess of Oldenburg, Annie Elizabeth, Lord Suffield, Cellini Pippin, New Hawthornden, Flander's Pippin, Peasgood's Nonsuch, Wellington. The three best dessert Apples, I think, are Cox's Orange Pippin, Ribston Pippin, and Lord Burghley. The last-named is the best late dessert Apple, and the handsomest I have ever grown. It might, perhaps, bear a little more freely if grafted on the Paradise-stock. I am a believer in the Paradise-stock. Buy good trees, which are cheap enough now, and plant in beds 6 feet apart, and after the first three years give the ground up to them. If there is a desire to make profit, plant in blocks of one kind, say a block of Shirley Castle, another of Lord Suffield. These two Apples bear so freely that they make but little growth unless freely manured on the surface. Blenheim Orange, Peasgood's Nonsuch, Warner's King, Wellington, and Bramleys' Seedling grow freely, even on the Paradise, and should have no manure till they bear well. It is better not to permit the bush Apples to bear the first year. Take advantage of every fine day to get on with the pruning and training of the wall and other trees. Select healthy pieces of wood for grafting. Prune outdoor Vines.

Vegetable Garden.

Make a fresh plan of the kitchen garden, and mark out where the different crops are to be planted, and prepare the land accordingly. Root crops, for instance, do not require fresh manure, though early Potatoes produce the best crops in deep, rich land, and as they are usually cleared off early, the disease does not affect them much; but late Potatoes are best from one field, where they can be given fresh land annually. All the sets of early Potatoes are now, or should be, laid out thinly to get the crown-eyes developed. Early kinds only require one stem, and when the sets are placed crown upwards the greater part of the strength of the sets will be in the crown-eyes, especially the White Kidney variety. There are various ways of forcing Potatoes, but none better than planting on a bed of fermenting leaves and stable-manure covered with a frame and lights. A good deal of work may be got out of a properly-made hot-bed. I have known three crops taken off one bed between November and June or July. First comes Asparagus and then Early Lettuces or Potatoes, and then Cucumbers. Where there are plenty of leaves, beds may be made up of Radishes and Horn Carrots. We shall soon be past the shortest day, and with the lengthening days forcing of vegetables may begin in earnest.

E. Hobday.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 13th.—Put in Chrysanthemum cuttings of various kinds. We never pass a really good cutting of any sort we want. Chrysanthemums are grown now in various ways, some struck early and others late in spring. Lightly mulched several beds of Tulips and Hyacinths Earthed up Tea Roses. Covered Figs on walls with Spruce branches, having first unnailed the branches and drawn them together.

December 14th.—Moved a lot of Deutzias, Lilacs, Spiræas, etc, to forcing-house Boxed the last lot of Daffodils for producing flowers for cutting. Potted Tuberoses (Africans). Vaporised several plant-houses, as flies are making their appearance. Potted spring Fuchsias in 48-sized pots. Potted off a lot of young plants of Asplenium bulbiferum from boxes. Placed more Seakale and Rhubarb in Mushroom-house.

December 15th.—Commenced making preparations for extending rock garden. The interest of rock gardening is enhanced by reason of the ease with which it can be extended. We can add new bits in any direction we like, and we want a collection of hardy Primroses. Made a new plantation of Raspberries (Superlative). All spare time now is devoted to trenching in kitchen gardens. Made a bed of leaves and manure for forcing Asparagus.

December 16th.—Thinned the growth of a lot of standard fruit-trees in orchard. Lord Suffield Apple is a wonderful bearer with us, but makes too little growth unless the fruit is thinned. This severe thinning enables the tree to make a little headway, and the fruits left come very large. Another variety that bears too much with us is Stirling Castle. We have it in various forms. Must thin them even more next season. Noticed a little sign of canker on Cox's Orange Pippin Apple; shall lift the roots.

December 17th.—Moved a few Indian Azaleas to warm-house to hasten blooming. We have a large stock and want a long succession of bloom. Rolled lawns and tennis ground with heavy roller. Made a new ash court for tennis. The ground was excavated 9 inches, and as the position was rather damp some of the earth was used round the edges to increase the height; 8 inches of clean brick rubble was placed in the bottom, and on this 4 inches of grey furnace ashes, and the whole rolled down hard, and then just a sprinkle of red loam on top and then rolled again. This makes a dry, firm court that will last almost for ever with a light top-dressing occasionally and rolling. The cost depends upon what one has to pay for the materials. We get our brick rubble cheap from the pulling down of old buildings, and the grey furnace ashes come from the brewery, and may sometimes be had for carting.

December 18th.—Pruned and trained late Peaches under glass. Examined borders, and where dry moistened them. Sponged plants in stove, and rearranged things generally. Liquid-manure is given to Eucharis Lilies, which are just throwing up flower-spikes. Potted last lot of Lilium longiflorum eximium and placed in cool-house.

CHRYSANTHEMUMS.

HOW AND WHEN TO PROPAGATE CHRYSANTHEMUMS.

The Chrysanthemum season of 1897 has scarcely gone ere we find how necessary it is to commence another year's work.

Cutting down old plants.

In many collections plants which have gone out of flower have probably been cut down long since; or, at least, as each one has had its blossoms removed. Yet there are growers who, being fond of a late display, have many plants still to be cut down. Before reducing the old stem take care that each plant is correctly labelled, or you may possibly find out when it is too late that you have been growing a sort which you never intended to. Some sorts are most prolific in throwing up new growths, from which an abundance of cuttings may be obtained and with such plants the old stem may be cut down to within 6 inches of the soil. There are others, however, which give very few cuttings early in the season, and to commence in good time with these sorts such drastic treatment as accorded the first style of plant would end disastrously. These shy sorts should have a good length of the old stems retained, 2 feet of growth not being too much to allow. If placed in a suitable temperature fresh growths break out from these old stems, and cuttings of the best of these must be taken, or none at all may be had for some time from the base.

After being cut down the old plants should be placed on the greenhouse staging, or on the greenhouse shelves, in this way getting them nearer the glass, and avoiding thin and weakly growth. In large and airy glass structures the plants may be left on the floor, such a cool position assisting in the developments of sturdy young growths. On the other hand, it would be a mistake to advise leaving the plants on the floor of a small greenhouse with limited air space. The importance of commencing well has often been emphasised in these columns, and to be sure of this new shoots of medium stoutness, not necessarily those too robust-looking and sappy, should be chosen. Some of the strongest-growing sorts produce their new growths in such quantities that it is necessary to thin out the weakly ones in order that those of a desirable kind may be perfected. Plants which have flowered in 6-inch pots from cuttings struck late in the past season often produce splendid cuttings. And as these are rarely fed to anything like the extent that those grown in the ordinary way have been, it naturally follows that they must be in a better condition for propagating than those just alluded to. If the greenhouse in which the old plants are standing can be kept at a temperature of about 45 degs., lower rather than higher for preference, it will assist the plants considerably in making a fresh start. The weak sorts, and those which we have designated as shy sorts, may be assisted into growth by syringing the stem occasionally, at the same time keeping all the plants just moist. On no account should they be allowed to get dry.

When to take cuttings.

Secure the cuttings when you can, no matter

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

what the sorts may be. There are always means by which a grower may get out of a difficulty, if he should, say, propagate his plants too early. Some varieties give far better results—when grown over a long season—than others; so that should a good cutting of any sort be obtainable some little time before it is generally considered advisable to insert the variety, if the cutting, when rooted, be grown on, it may be topped—*i.e.*, the head of the young plant may be taken off later, and inserted immediately. Such cuttings generally root quickly, and often make remarkably fine plants. The propagation season usually begins in the early days of December, and continues on until the end of January. Even later, in some cases, grand results are often obtained; but in such cases an experienced grower has many advantages over a beginner. The Japanese sorts certainly claim first attention, the incurved Pompons and decorative sorts, as a rule, succeeding better if deferred until January.

The kind of cuttings to select.

This has already been touched upon when I referred to thinning out the new growths. The best cuttings are those of free growth, and not those in which a small bud may be detected in the point of the shoot. The kind of cutting to select may usually be found an inch or two away from the old stem, and sometimes the cuttings may be distributed all over the base of soil, and also frequently just around the edges inside the pot. A good length for a cutting is from 2½ inches to 3 inches, and these should be detached with a sharp knife immediately beneath a joint, and this is found just below the junction of the leaf and stem. It should have been mentioned before that in all cases where the new growths are infested with green-fly it is necessary that the greenhouse be thoroughly fumigated for half-an-hour with Tobacco-paper. If this drastic measure be neglected, the green-fly, which increases at a great rate, soon renders the cuttings valueless. This operation is often neglected, with the result that the progress in the early stages of the new plant is seriously impeded.

Soil for propagating.

This is a simple matter, still of sufficient importance to be worth a little extra trouble. The soil should be just moist, and by this I do not mean pasty or sticky. It should be in such a condition that although moist each of the constituents may be easily mixed without adhering one to the other. Take of light loam and decomposed leaf-soil equal parts, and pass this through a ½-inch meshed sieve, and add to this liberally, or rather in sufficient quantity, sharp silver-sand, to ensure a free passage for drainage. Give the compost a thorough mixing before using. The rough siftings from the soil will answer admirably for covering the crocks in the pots or boxes used for propagation, so should be saved for this purpose.

Inserting the cuttings.

Cuttings of a suitable length may be inserted in boxes or in pots, in the latter either singly or in 3-inch pots. If put in 2-inch pots the roots do not get damaged. In 3-inch pots four or five cuttings may be inserted around the edge, and these very quickly root if given suitable conditions. In boxes the cuttings should be put in in rows, labelling each row, if a different variety, before proceeding with the next. It is a good rule to propagate one sort at a time, in this way avoiding any complication that might otherwise arise. Crock both the boxes and the pots with great care, laying each piece over the other, so that drainage may be satisfactory. Further ensure this by covering the crocks with the siftings before referred to, or, failing this, Moss, Cocoa-nut-fibre, or similar material. Fill the different vessels with soil, just pressing it in lightly. Place a pinch of sand on the surface, making a hole with a pencil or anything of the kind, and then inserting the cutting in this. Press the latter firmly at its base, otherwise it may "hang," and ultimately wither and decay. A sharp rap on the bench will settle the soil nicely, after which label each preparatory to placing the pots in a frame on the greenhouse staging. However, before this is done, with a fine-rosed can give the cuttings a good watering in, and when the superfluous water has passed away place the pots in regular order in a frame (either temporary or permanent) on the greenhouse bench. Keep up a temperature of about 45 degs., admitting air occasionally, and wiping excessive moisture off the glass or frame-light, as occasion arises. Experienced Grower.

Chrysanthemums—bush plants in five distinct colours *(H. B.)*.—You do not state whether you want your plants in five different colours for exhibition purposes or for home decoration. In the former case you would require those sorts which would blossom at one and the same time, while for the latter you may prefer the season of flowering to extend over a long period. We take the former interpretation of your request. Crimsons: John Shrimpton and Wm. Seward. Yellows: Phœbus and Pallanza. White: We only care for Louise in your selection, and this comes blush-tinted. Pure whites may be found in Western King and Emily Silsbury. Bronze: Chas. Davis and Col. W. B. Smith. These need high culture to get strong footstalks to the blooms. Pinks: Viviand Morel and Mrs. C. Probian, the latter a very beautiful and easily-grown Japanese-incurved. Late crown-buds in each case should answer your purpose, and by this we mean those appearing very late in August or thereabouts.

A SUCCESSFUL EXHIBITOR.

The accompanying photograph shows part of the result of the unaided work of a lady amateur gardener—Mrs. Bridson, of Dartmouth. It represents both Japanese and incurved flowers, these being shown at the West of England Chrysanthemum Society's exhibition at Plymouth, and at the Dartmouth Horticultural Show in November last—nine classes altogether, eight prizes being awarded. Mrs. Bridson has been a regular competitor in most of the Chrysanthemum shows in South Devon for the past five years and has taken seventy-eight prizes. The photograph was taken five days after the blooms had been picked, many of them having travelled one hundred miles, and therefore past their prime.

A prize exhibit of Japanese and incurved Chrysanthemums. From a photograph by Mr. R. Mesney, Dartmouth.

Chrysanthemums—stopping plants for securing crown-buds *(Anxious)*. — Many varieties need not be stopped to get the first or second crown-buds in time for an early November show. They do this naturally; but in some instances, notably with late sorts, this stopping is of importance. The selection you have sent us includes in several instances late kinds, and also not of the best. We could give you a much easier and far better selection: Etoile de Lyon, stop first week in April, retaining second crown-buds; Niveum, stop end April, retaining first crowns; Eda Prass, stop end March, retaining second crowns; Beauty of Teignmouth, treat same as last; Mrs. W. H. Lees, stop second week in May, retaining first crowns; Golden Gate, treat same as last; R. Dean, stop end March, retaining second crowns; Khama, if not making a break naturally, stop second week in May, retaining first crowns; Rose Wynne, stop second week in April, retaining second crowns; Lily Love, stop second week in May, and first crown-buds; Good Gracious, stop second week May, retaining first crowns; Mrs. G. Gover, stop end of March, retaining second crown-buds; and Golden Wedding, stop mid May, retaining first crown-buds.

Chrysanthemum Pride of Ryecroft.—This is a beautiful, sulphur-yellow sport, from the well-known variety Niveum. It is a typical plant of medium height, and as the parent variety is generally considered to be invaluable for late cutting, as a white sort, the same sort of flower with such a soft yellow colour should be welcomed by all desiring a fine display during December. For market it will supply a useful shade of colouring late in the season.—E. G.

Chrysanthemum Phœbus.—Notwithstanding the large number of yellow Chrysanthemums now under cultivation, there are none to equal this in clearness of colour. It is also perfect in every way, and a large, deep bloom. It is worth growing for exhibition and as a bush plant. A bush plant carrying twenty to twenty

four blooms is a striking feature. It stands out boldly when placed in the conservatory among Palms; in fact, it is a useful variety for decorations generally.—W. J.

Chrysanthemums—exhibiting bush plants (*W. D.*).—We gladly reply to your request, but regret that we cannot make a selection from any one particular grower's catalogue. However, the varieties we name you should have little if any difficulty in getting from the trade grower you mention. You state that you want to exhibit a collection of bush plants either on November 2nd or 9th next year, and on that account there should be a fine lot of sorts to select from. Besides Mons. Bernard, Viviand Morel, Chas. Davis, J. Shrimpton, and Val d'Andorre, the following seven sorts should make you a dozen reliable plants: Western King, pure white; Mlle. Lacroix, pure white; Mr. Chas. E. Shea, pale yellow; Annie Clibran, clear soft rose-pink; Australian Gold, canary-yellow; Col. W. B. Smith, golden-bronze (this should come to the time you name all right); Source d'Or, bright orange, shaded gold; and Yellow Source d'Or, a deep golden-yellow sport from Source d'Or. You will notice we have given an extra sort, in case you might not care to grow Col. W. B. Smith again, as its blossoms hang over unduly. Viviand Morel certainly should be grown, late buds usually giving flowers of good colour. We should never stop the plants after the middle of June, and if you stop at every 6 inches of growth this will be quite sufficient. The sorts we have selected above are all free growing, and, with very little difficulty, should be in splendid form early in November.

Chrysanthemums—which buds to retain (*George Tyro*).—The fact of your stopping your plants at 4 inches, and again when the resulting shoots have grown another 4 inches, must naturally upset one's calculation very much. In this way, supposing you treat all your plants alike, you cannot very well avoid a great mixing up of the dates when the buds should appear. We are pleased to give you our opinion as to the most desirable form of bud to retain of the varieties in your selection. Retain first "crown"-buds of Mlle. Marie Hoste, Florence Davis, Moonlight, Edwin Molyneux, Miss Dorothea Shea, Mrs. Falconer Jameson, J. S. Dibbens, Lord Brooke, Avalanche, Miss M. A. Haggas, Excelsior, Mrs. Alpheus Hardy, L. Canning, Mme. Carnot (late first crowns), Lady Saunders, Mlle. Thérèsa Rey, Mme. Recoud, and Princess Victoria. Retain either second or late crowns or early terminal buds of Mrs. Robinson King, Cullingfordi, Viviand Morel, Chas. Davis, Col. W. B. Smith, William Seward, William Tricker, W. H. Lincoln, Gloire du Rocher, White Louis Bœhmer, Mons. R. Bahaunt, President Borel, Mons. Chas. Molin, Etoile de Lyon, Baron Hirsch, Peter the Great, and Mme. Darrier. The remaining two or three sorts we do not know. Commence the propagation of these sorts at once, so that a lot of sturdy plants may be ready in the spring to ensure the buds coming along in the proper season.

Chrysanthemums—reliable selection for late display (*Mum*).—We can quite understand Niveum doing so well, while the other varieties you mention were a partial, if not an entire, failure. Both W. H. Lincoln and Wilfred Marshall should make satisfactory blooms, but it is better with such varieties to give them high culture. Some varieties develop good flowers, and these freely, without any extra trouble, while others require plenty of attention, and be freely disbudded, to secure anything like satisfactory results. A liberal course of feeding also assists very much. You cannot well do better than get the following sorts: Pride of Ryecroft, a new pale yellow sport from Niveum; C. W. Richardson, a beautiful deep rich yellow of large size, with pretty, curling petals; Olive Oclee, a Japanese-incurved, buff-yellow; Mrs. Hermann Kloss, a large Japanese, deep orange; Mons. Chenon de Leche, rosy-buff, very dwarf, late buds should be retained; Etoile de Lyon on late buds also is pretty; Le Rhone, bright clear yellow; Golden Gate, tawny-yellow; Eugene Dailledouze, rich yellow; L. Canning, white; Janette Sheahan, golden-yellow, tinted bronze; G. W. Childs, rich crimson; Western King, pure white Japanese-incurved. Smaller flowers of useful late sorts will be found in Golden Dart, rich yellow; King of Plumes, deep yellow; Taxedo, a beautiful orange, rather tall; Mrs. Wm. Filkins, a lovely yellow; and Mrs. Carter, pale primrose-yellow. These latter sorts are beautiful decorative plants, and fine for cutting.

Chrysanthemums (*Venus*).—You will see that we have commenced carrying out your suggestion in the present issue, and hope to follow on with other articles as the season progresses.

THE WATER CHESTNUT.

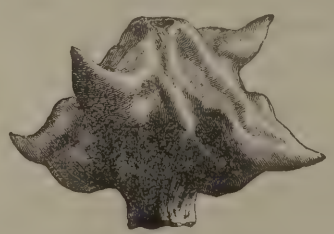
We have lately received several queries asking for information about this curious plant. We therefore give a few brief notes concerning it, also illustrations. The very singular four-horned fruits of this Trapa, which was the only one formerly known, have been compared to the spiked iron instruments called caltrops, employed in ancient warfare for strewing on the ground to impede the progress of cavalry; and,

Water Chestnut (Trapa natans).

from the plant growing in water, it is sometimes called the Water Caltrops. Besides the European species, there are five or six others, natives of India, China, and Japan. All are floating plants, with long-jointed rootstalks, having tufts of hair-like roots (sometimes regarded as submerged leaves) at the joints, and surmounted by a radiating cluster of toothed leaves, with swollen float-like stalks, which serve to buoy them up.

The seeds of all these plants abound in starch, and are much eaten as food. Those of T. natans (see cuts)—called Jesuit's Nuts at Venice, and Chataigne d'Eau by the French—are ground into flour and made into bread in some parts of Southern Europe. In Kashmir those of T. bispinosa, the Singhara of the natives, are used largely as food. T. bicornis, the Ling of the Chinese, has a fruit like a bull's head; the seeds of this plant also form a considerable article of food.

The Chinese mode of gathering this description of food is thus described by Fortune: "Leaving the old town (Kea-hing-foo, in the



Fruit of the Water Chestnut.

great Hang-chow silk district) behind us and sailing westward, we entered a broad sheet of water of considerable size, which is probably part of, or at least joins, the celebrated Tai-ho lake. The water is very shallow, and a great part of it is covered with the Trapa bicornis—a plant called Ling by the Chinese. It produces a fruit of a very peculiar shape, resembling the head and horns of a bullock, and is highly esteemed in all parts of the empire. I have seen three distinct species or varieties, one of which has fruit of a beautiful red colour. Women and boys were sailing about on all parts of the lake, in tubs of the same size and form as our common washing-tubs, gathering the fruit of the Ling. I don't know of any contrivance which would have answered their purpose better than these rude tubs, for they held the fruit as it was gathered as well as the gatherer, and at the same time were easily propelled through the masses of Ling without doing the plants any injury. The sight of a number of people swimming about on the lake, each in his tub, had something very ludicrous about it."

To get the horny-looking seeds of this plant to germinate in this country it is necessary that the water in which they are placed should range in temperature between 60 degs. and 80 degs. Fahr. After germination the plants grow quickly, and soon show their pretty roundish floating leaves over the surface of the water. They thrive best in a warm greenhouse while they are young, but as they advance and the weather out-of-doors gets warmer they may be safely removed to any pond or tank where the water is not impure. In this way the plants continue more healthy, flower better, and ripen their seeds with more certainty than they do when kept in a warm-house.

INDOOR PLANTS.

BRIGHT WINTER FLOWERS.

POINSETTIA PULCHERRIMA.

From November to the end of January flowers are scarce and valued accordingly. However, during this dull time the Poinsettia is to be had in perfection, and it can certainly be safely stated that there is no plant then more showy or useful. The gorgeously-coloured flower-heads, or, to write more correctly, "bracts" of the most intense scarlet, are attractive above everything during the shortest days, and even a few of them are capable of brightening up stove, conservatory, or rooms in the most pleasing manner when lustrous flowers are scarce and most appreciated. Everyone who has a hot-bed, frame, and greenhouse should try to grow some of these, as they are not very extravagant in their requirements, and so they may be cultivated to a most serviceable degree of perfection with ordinary treatment. The plants, generally speaking, are over by the end of January, and from that time until the beginning of May they will remain dormant under the plant stage of a root-house. They will not need any water or other attention at all at this time. About the beginning of May they are brought out from beneath the stages, watered thoroughly, and then placed in a frame or house where the temperature is about 65 degs. Here they will speedily begin to grow, and emit young shoots all up the stems. When these are about 3 inches in length they are taken off as cuttings; each one is detached with a "heel"—*i. e.*, a very little piece of the old wood attached—and they should then be inserted into the smallest-sized 2½-inch pots; are filled with a half-and-half mixture of leaf-soil and sand. They are then plunged up to the rim of the pot in sawdust in a hot-bed or Cucumber-house, where the bottom-heat is about 70 degs. Here they are not allowed to suffer for want of water, although they do not require much of this until the roots are formed, and they are also shaded from bright sunshine. With these attentions roots are soon made, and they are then withdrawn from the bottom-heat and placed on a shelf in the pit, and in a week or so after this shift into larger-sized pots. From 2½-inch pots they are generally put into 3-inch ones, and from the latter into 6-inch or 7-inch ones, and in this size they are allowed to bloom the first year. In potting them I have found it best to use a rough mixture of turfy loam, sand, and leafy soil. Proper drainage is of the utmost importance, and firm potting adds to success in culture. Poinsettias are plants that lose much sap when injured, and this, having a weakening tendency, must be avoided as much as possible. After potting keep close and shaded from bright sunshine for a few days; afterwards they will bear all the light possible. From the last pottings on until the middle of September they do remarkably well in a cold frame, and they should never be grown in a strong heat at any time in summer, as this causes them to make long straggling growths, which are neither ornamental nor useful. Dwarf sturdy shoots always produce

the finest heads, and short plants are always more valuable than long ones. Another way of securing serviceable plants is to cut the old stems down to about a foot from the bottom, and allow all the side shoots which sprout out to grow. In this way some of them may have six, eight, ten, or twelve shoots, and as each of these will produce a showy head, very attractive, or what might be termed specimen plants, are the result. When they are treated in this way it is best to repot the old plants as soon as the young shoots are a few inches long, and they may be potted again when growth is more advanced. As a rule those branching specimens flower well in 8-inch and 10-inch pots, and, apart from allowing the shoots to remain on in the place of taking them as cuttings, and the putting them into larger pots, these plants are subject to just the same treatment as those raised from cuttings. In the autumn, or about one month before they are required to be in full beauty, they are taken into a warmer and drier atmosphere, and here they soon develop their brilliant heads. Throughout all the period of their growth the greatest attention should be given to watering Poinsettias at the roots, as allowing them to become dry in any way causes the leaves to fall prematurely, and then the heads are poor and useless.

H. B.

Forcing Lily of the Valley (*A. J. G.*).—There is no great art in forcing Lily of the Valley. The chief thing is to have good sorts. These are usually purchased from the Continental growers, either in solid clumps, just ready to block into 5-inch or 6-inch pots, or else separate. In the latter case it is customary to find the finest roots or crowns. These may be put thickly into pots, say ten or twelve crowns, more or less, according to the sizes of the pots, or may be put equally thickly into shallow boxes, set in good pot soil, and be in that way forced in heat. A very short time suffices to drive the crowns into leaf or bloom if sufficient heat—that is, from 65 degs. to 75 degs.—be furnished. It is, however, well to treat these Lily of the Valley crowns as bulbs in pots or boxes usually are—that is, they should, after planting into boxes or pots, be set outdoors on a border or in a frame, and covered up some 3 inches deep with ashes or Cocoa-nut-fibre refuse, to induce good free rooting before the crowns start into growth. To that end, in order to have pots or boxes of roots ready for forcing into bloom early in the winter, the potting should take place early in September, or really so soon as they can be obtained from the exporters. When the flowers are produced in boxes they are usually pulled and sold in bunches or in dozens. The clumps, if the flowers be good, usually make most money sold as pot-plants. One of the finest of all strains is that known as the Victoria. It is now pretty abundant.

Justus igneus.—This is a beautiful stove plant, of dwarf habit, deserving wider cultivation on account of its blooming at such a dull period of the year. It is of easy cultivation, and succeeds well in ordinary potting soil, but delights in a brisk heat and moist atmosphere. It rarely exceeds more than a foot or so in height, and has broad, fleshy, dark green leaves. The rich orange-coloured flowers are single, and measure about 2 inches across. It is readily propagated by cuttings.—H.

Freesias in the north of Scotland (*Plena*).—You would not succeed with Freesias in the open ground in your locality, but under glass it should be a simple matter. Put about eight to twelve bulbs in a 5-inch pot. Drain well, and use a compost of rich loam with a little coarse sand. Place in a dark place, or cover with ashes or Cocoa-nut-fibre in the ordinary way. It is best to pot early in September. As soon as growth commences remove to the greenhouse, and keep them close to the glass to avoid spindly and leggy growth. They need plenty of water while growing, but as soon as the flowers are over should be kept dry. When dormant remove from the soil, lay upon a warm shelf for a couple of weeks, and afterwards store in a dry place. The end of the following August sort out the bulbs, and pot up the largest as before. Smaller bulbs may be put thickly into pans or boxes of the same compost, and treated likewise. These last we would not allow to bloom, when they will form really grand bulbs for next season. By following the above plan Freesias are easily grown, while the stock rapidly increases.

Veltheimia viridifolia.—This curiously beautiful species is rarely seen outside the botanic garden or that of the bulb specialist. It is, however, a capital winter-flowering subject, often blooming continuously for weeks together. The plant is bulbous in character, the bulbs being of good size and conical, and from these the attractive foliage issues, together with a centrally disposed flower-scape, the latter rising to about 18 inches high, terminating in a numerously-flowered raceme, the blossoms individually being tubular in shape, drooping, of a reddish hue, and tipped with green. When in flower the plant is interesting, and, being of easy culture, should be more frequently seen in gardens. Native of South Africa.—T.

ORCHIDS.

INDIAN CROCUSES (PLEIONES) ON WOOD BLOCKS.

In the excellent notes on the culture of the above which have appeared lately I have not noticed their having been grown on wood blocks. When potting up a batch last year about this time I decided to try about a score bulbs (or corms) in that way. I used a somewhat similar compost to what I had used for the pots—viz., peat and loam fibre with a little Sphagnum chopped up in it, the only difference being the addition of more living Sphagnum. For a block I got a piece of living Elder wood about 14 inches in length and 3 inches to 4 inches in diameter, cutting it square at each end. I affixed the compost to the block with some very thin wire, working in the Pleione bulbs as I went along, adding a few small plants of Adiantum Capillus-veneris and two or three of Pteris tremula variegata. I put the Ferns in so as to give a bit of green foliage when the Pleiones were in flower. It may be said here that it is not wise to put in many Ferns, as there is risk of their outgrowing the Pleiones in the summer months, and also robbing them of the moisture. By driving in a small staple at the upper end of the block and affixing a bit of wire thereto it can easily be suspended from the roof of any Orchid-house or warm plant-stove. There is no need to do this for some time after flowering; meanwhile it can be stood on the side stages. For some weeks the only water required at that sunless season will be an occasional dash over with the syringe or a rose water-pot. As the foliage develops and roots increase more moisture is needed. I dipped them from time to time, until in the warm days in summer this had to be done daily. A little weak manure-water was used for the purpose at that time. When the foliage begins to show signs of having completed its life's work less water is required, though it will not do to allow the block to become too dry even then, or the Ferns will suffer. Elder wood, with its soft porous bark, seems well adapted for the purpose. When the block was nearly covered with its pretty flowers it was much admired. P. Lagenaria was the kind I used, but the other varieties would, I think, do equally as well. Those of your readers who may not have grown Pleiones in this way for the purpose named will find them very useful.

H. J.

An Indian Crocus (Pleione Lagenaria) on a block of Elder wood

Treatment of Cypripedium Charlesworthi (*Amateur*).—Cypripedium Charlesworthi is a prety species, and should be grown by everyone who is an admirer of Cypripediums; its cultivation presents no difficulties when its requirements are thoroughly understood. The appearance of the plants of this Orchid in many collections which I have seen leads me to believe that the conditions requisite for its successful cultivation are imperfectly known, the principal cause of failure being in giving them more heat than they require, and by an insufficient circulation of air during the growing season. The result of this is that the growths come up weak and unsubstantial, and the whole plant is of a less vigorous and sound constitution. Cypripedium Charlesworthi should be grown in the coolest part of the intermediate-house, with a temperature ranging between 50 degs. and 60 degs. during the winter months. In summer, with sun-heat, the house would naturally be quite 10 degs. above these figures. The plant should at all times be carefully shaded from bright sunshine. The best season for repotting the plant is at the end of the flowering season, but unless the compost is sour or decayed, or larger rooting space is needed, annual repotting is unnecessary. In repotting keep the base of the plant well elevated above the rim of the pot. The pots should be well drained, about one-half filled with crocks, and over these place a thin layer of Sphagnum Moss to support the compost, which should consist of rough fibry peat and clean-picked Sphagnum in about equal parts, freely mixing with it some thick crocks to keep the compost porous. Pot moderately firmly, but not so hard as to prevent the water passing freely through the compost. For the first few weeks after repotting water must be carefully afforded; if kept too wet after being disturbed the old roots are liable to decay. The best method is to damp well between the pots several times a day, and whenever the surface of the soil appears dry give it a light sprinkling. When well rooted in the new soil and the young growths vigorous the plant will take water in almost unlimited quantities. During hot summer weather a good sprinkling overhead with a fine-rose watering-can will greatly assist growth and help to keep down insect pests. This may be done two or three times a week without fear of causing the slightest injury to the plants. The flowering season is October and November.—W., *B.*

Aster ptarmicoides.—This pretty variety is not so frequently grown as its merits justify, as it is by no means a commonplace kind. Its pretty satiny white flowers are freely produced on a neat erect bush. This variety should certainly be included in all choice selections.

FRUIT.

WINTER APPLES.

THE large importations from abroad affect, of course, our home-grown fruit, but this should not deter amateurs from growing their own supplies. I admit storage is an important matter, many not having the means to store large quantities, but many can store sufficient for their own use. If grown for sale it is equally important to secure the best varieties and not too many kinds. I was speaking a few days ago to an amateur who makes gardening pay. He told me he had an acre of Apple-trees, and certainly it was a most profitable investment. He grew only a few sorts, and the best one he specially noted was Cox's Orange. He said no one for some years will make a mistake in planting Cox's, as if sold direct from the trees there is a good profit, if kept till now there was a much better return, and in spring one could command a still higher price. To keep Cox's Orange till spring needs special care, but I need not go into details, as my notes more closely concern mid-winter kinds, and the variety in question will come in for its share of space in my selection of the best kinds. If we take cooking fruits, probably the one

The Wellington Apple.

illustrated may be classed as one of the best all round winter varieties. The variety in question is known under a dozen different names in various parts of the country, the one most general being Dumelow's Seedling; in fact, I am not sure if this is not the correct name, and Wellington only a synonym, but, be that as it may, we have in Wellington one of the best winter cooking Apples. As regards quality it is difficult to beat. Of course, with over fifteen hundred varieties of Apples to select from, the amateur will do well to avoid most of them, and, if he grows for profit, a couple of dozen will suffice. I will name a dozen of the best dessert and another dozen of cooking kinds. An important point for consideration is that of the stock the tree is to be worked upon, or shape and the after culture. My advice to those who do not wish to go to much trouble in the way of food, pruning, and thinning of fruit, and who require fruit in quantity, is to grow half-standards. These are trees with shorter stems than standards, and they are most profitable, but the fruits are not so fine as from bush-trees. In the case of dwarf standards, the fruits are easily reached, and cattle cannot be allowed near them. Standards on turf are very little trouble and soon pay; and for the garden bush-trees on the Paradise-stock give finer fruits. They mature earlier, and if attended to give splendid results. For a neatly-kept garden few trees are more ornamental than pyramid Apple-trees, and though the Apple does not make so natural a pyramid as the Pear, it has its advantages. Probably for gardens with none too much space at command the bush and pyramid are most suitable, and those on the Paradise-stock are most profitable in the majority of soils and positions.

PLANTING is best done in the autumn, and I would strongly advise doing this work at any time from October to February, if the weather is open, in preference to March planting, as though trees planted at the latter date are successful when well attended to, at times amateurs cannot give them the attention they desire if the weather is very dry and hot. I have not noted indoor culture, and this is excellent to obtain fine fruits, but it can scarcely be termed the most profitable. I have heard many amateurs deplore the loss of the well-known Ribston Pippin, one of our very best dessert Apples, but there is no need to do so; this variety, when grown in bush form or on the Paradise-stock, rarely cankers as when grown in standard form on the Crab-stock. If not too much pruned it is very prolific. Another objection I have heard amateurs make to planting fruit-trees is that certain kinds take so long to fruit—I mean so many years before they are profitable—and the Blenheim Orange in standard form is certainly not a paying variety on the Crab-stock; but in bush form produces a crop in three years. This applies to other varieties, the stock named being the most profitable for amateurs to use in most soils. As regards varieties, I will take the dessert first, and there is no lack of really good profitable kinds, as of late years many inferior kinds have been weeded out and more attention paid to the best.

DESSERT APPLES.

LADY SUDELEY rarely fails to crop grown in any form. I have it as standard, bush, and cordon trees, and all do well; indeed, from our dwarf standards we get splendid fruit, and find them most serviceable for early dishes. This comes in early in August in a warm soil, and it is attractive in appearance, fruit of high quality for an early variety, and eaten from the tree is delicious; but it should not be hard pruned. It is best grown as a bush or standard, and should not be stored.

WORCESTER PEARMAIN is another good Apple. I am aware it is not so universal a favourite as the first named, and does not keep; but, on the other hand, there are few which give a better return. It is a grand market variety, and in well-drained soil not at all poor in quality. The fruits are handsome, and it crops yearly on the Paradise-stock grown in bush form.

WEALTHY is less known than others, but it crops freely in certain districts, and the amateur would do well to first give it a trial before planting largely. It is a handsome fruit—an American introduction of great merit—not a keeper, but in season early in October, dark red in colour, juicy, and a free cropper in any soil.

KING OF THE PIPPINS.—No one can make a mistake in planting this in quantity. Probably it is the most reliable dessert Apple grown, and makes an excellent standard, or in bush form on the Paradise. Owing to its excellence in most localities it is known as Seek-no-Further and Prince of Pippins. It is a very shapely fruit, firm flesh, keeps well into the new year, but in season from October to Christmas, and in light soil it never fails.

RIBSTON PIPPIN.—A splendid fruit. It may well be termed the cream of dessert varieties; a very good cropper grown in bush form on the Paradise-stock, but less satisfactory on the Crab as a standard. It is in season from October until January, and a splendid variety for market.

COX'S ORANGE PIPPIN needs few words of praise. Every lover of a good Apple knows this variety. Grown as a bush or dwarf tree on Paradise-stock, it is the best Apple we have, and should not be too hard pruned. Gathered late, the fruit will keep till March in a cool store, and the quality is superb.

COX'S POMONA is another very valuable market fruit, a great bearer, and should be left as long as possible on the trees. It is a handsome fruit, not of special good quality, but a regular cropper.

BLENHEIM ORANGE.—One of the best known Apples in commerce, and one of the most valuable. It does not crop freely as a standard until it attains a fair age; but on the Paradise, as a bush, is profitable. The fruit is large and handsome.

CLAYGATE PEARMAIN.—This is not a handsome Apple, but a regular cropper, of Ribston flavour, and good from November to March.

GASCOYNE'S SCARLET.—A newer fruit than most of those named, and may be given a trial. It is handsome and promises well. A splendid market fruit for mid-winter.

STURMER PIPPIN is one of our best late fruits, and may be kept until June. It is a great bearer, good in any form, prolific as a bush on Paradise-stock.

BOSTON RUSSET.—This is one of the latest, is good in bush or other forms, not showy, but valuable for its keeping properties.

APPLES FOR COOKING.

MANKS' CODLIN is one of the most profitable early cooking fruits; it rarely fails, is of dwarf growth, and sells well.

DUCHESS OF OLDENBURG is valuable for September and fine in bush form on Paradise-stock. It is very prolific and rarely fails, and is of fine quality.

LORD GROSVENOR.—A Codlin of great excellence, is a special amateur's fruit on account of its size and free bearing; it rarely fails.

CELLINI PIPPIN.—A large, handsome fruit, a certain bearer, good in bush form or on Paradise, and keeps well into the autumn; a handsome fruit of first-class quality.

ECKLINVILLE.—A very good cooking Apple for October, free bearer, sells well, and one of the best for gardens.

NEW HAWTHORNDEN is excellent in bush or other forms. It is a grand market fruit, in season from October to December, large, handsome, and fine quality.

WARNER'S KING.—Mostly good in any form, a fine Apple, and though soft, one of the most profitable on account of size and quality. On Paradise-stock it is most prolific.

BISMARCK.—A newer variety, promises well, crops freely, and is handsome, of good size fine colour, and a special favourite in the market.

LADY HENNIKER.—A large fruit, hardy and prolific, in season early in the year, and is always reliable in exposed places or poor soils.

WELLINGTON.—The fruit illustrated is of splendid quality. It crops freely on Paradise-stock, and in warm soils is especially good as a

standard. It is in season from November till March.

Prince Albert.—A grand cropper, noted for quality, size, and free bearing in a small state. It is in season from December to April, one of the best amateur's fruit in cultivation, and not fastidious as to soil.

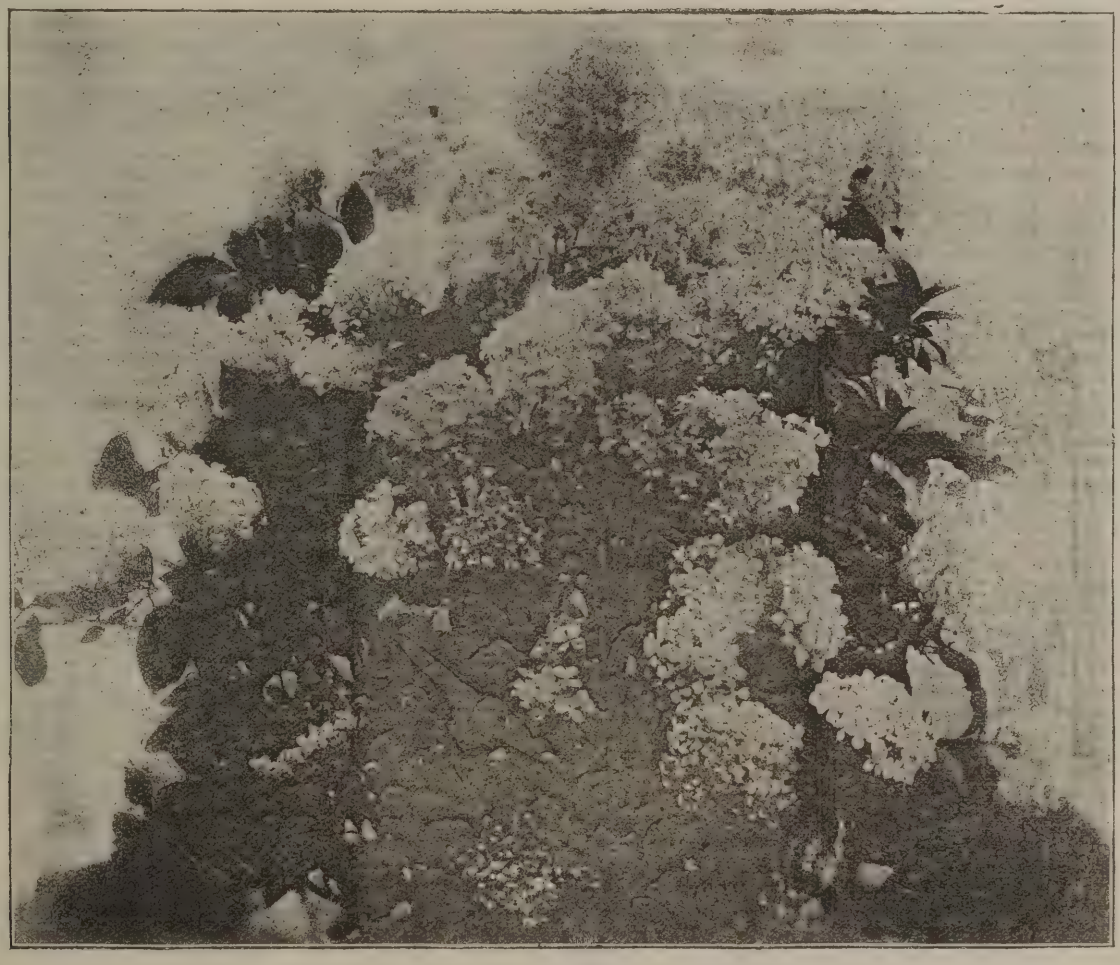
Alfriston.—A specially good late Apple in most soils, large, and very prolific in any form. It is of immense size on the Paradise-stock, and in bush form trees grow well in any position, and the fruits keep well. W.

A remedy for birds destroying buds.—As there are so many complaints about birds destroying the fruit-buds, also about Goose berry caterpillars, it may interest some of your readers if I give my experience as to how I keep clear of them. My plan is to take fine lime, and mix with it a pailful of water, so that it will pass through a syringe. I get at one end of a row of fruit-bushes, and with plenty of force I can dress several bushes at one time. I, as a rule, go over them three or four times from November to March. I do not lose a bud. The lime that goes on to the ground I quite believe keeps down the caterpillars, as I have no trouble with them now. Plenty of lime must be used; if too unsightly use half soot with the lime, mixed before it is wetted. When I dig between my trees I take some 3 inches deep of the soil from each, and bury it between the bushes, then give fresh soil and manure around each bush.—Greeting.

Pear Uvedale St. Germain.—This Pear takes a long time to come to perfection, as one in my garden now, over forty years old, said to be grafted on a Thorn, bore many but small Pears, till 1887, when they grew to, in some cases, 2 lb. in weight, and ever since the fruit has always weighed at least ¾ lb., generally from 1 lb. to 2 lb.—Flora.

The Mangosteen (Garcinia Mangostana).—Although introduced to this country in the year 1789, the Mangosteen is seldom met with except in botanic gardens, and even then the fruiting of it is very rare. According to "Loudon's Encyclopædia of Plants," it was named after Laurent Garcin, M.D., F.R.S., who travelled in the East Indies. The flower is like that of a single Rose, the fruit round and about the size of a small Orange, whilst the skin is similar to that of the Pomegranate. The flesh is of a rose colour, divided by thin partitions, as in Oranges, and surrounded by a soft, juicy pulp. It is esteemed one of the richest fruits in the world. It is a native of the Molucca Islands, whence it has been transplanted to Java and Malacca. There is a specimen of the plant in question in the Liverpool Botanic Gardens, bearing several fruits similar to the accompanying one.—J. Guttridge.

Melon culture *(Old Reader)*.—There is no book known to us dealing with the culture of Melons alone. There is one entitled "Cucumbers and Melons," by W. J. May, 170, Strand. No doubt full information is given in D. Thompson's "Handy Book of Fruit Culture under Glass," price 7s. 6d., but that may be too costly for you. Or you may find considerable information in C. W. Shaw's "Market Gardening," a very valuable and practical book. Melon culture is now somewhat advanced and is chiefly carried on in low glass-houses, either span or lean-to. The houses should be low inside, the floor being fully 2½ feet below the ground wall. The plants are grown either in large pots singly, or in stout wood boxes, three plants being grown in one 3 feet long, 12 inches wide, and the same in depth. Or they may be grown in shallow troughs with trellis bottoms, or in mounds of soil standing on a soil bed. In any case there must not be too much root room, as that is undesirable. The soil should be of a stiffish clean yellow turfy loam, to which is added about one-fifth in bulk of good hot-bed manure. Water should not be given close to the stems, as that often leads to canker. A temperature ranging from 65 degs. to 75 degs. is essential. The plants should be trained up to wires or wood trellis, 10 inches from the glass, and all shoots not carrying fruits pinched out. Fruit-blooms must be set or fertilised with pollen from the fruitless or male flowers. It is not wise to raise plants too early. Sowing in February will be early enough for you.



The Hydrangea in Essex. From a photograph by Miss Willmott, Great Warley.

TREES AND SHRUBS.

THE HYDRANGEA (H. HORTENSIA).

This lovely free-flowering shrub is a native of China and Japan, and was introduced to this country upwards of a hundred years ago by Sir Joseph Banks. It grows well in nearly all garden soils, but prefers a mixture of peat, loam, and leaf-mould in about equal proportions. Two essential points in its successful cultivation are good drainage and an abundance of water during its growing period. Care should be taken not to plant in dry, hungry soils and the full glare of the sun, as in such a soil and position weak, slender growths are the result, and when the flowers expand they are quickly scorched. It is hardy in sheltered spots, and although it is sometimes cut by frosts, nevertheless, young, vigorous growths appear every spring from the base of the plants. It is exceptionally useful for cultivating in small pots for conservatory decoration. If shoots are taken off when the flower-buds are being formed and inserted in peaty soil, with a little Cocoa-nut-fibre added, and placed in a close case for a few days, roots will be emitted, and when the plants have been hardened off they will be found handy for standing in small vases in rooms and for enlivening the conservatory. The large and handsome heads of flowers are soft pink.

Twenty-four hardy shrubs.—Will you kindly give me a list of twenty-four hardy flowering shrubs, deciduous or evergreen, including dwarf ones also, for a light soil in a sheltered part of Aberdeenshire? Plenty of peat can be

had. Shrubs that flower in England in March and April and in July and August are what I require.—G. T. F.

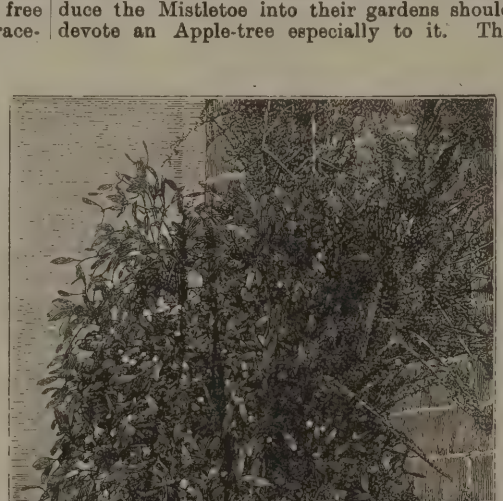
*** We are pleased to give you the names, with brief descriptions, of two dozen shrubs which flower during the months named in your query. The first twelve will be in bloom in March and April. Magnolia stellata is a grand shrub, whose pure white flowers are borne with great freedom along the leafless twigs. Rubus deliciosus is a much neglected, but very beautiful shrub, also with pure white flowers. Prunus triloba is a capital free-growing shrub, even in poor, hungry soils, and when its long shoots are wreathed with pale pink double flowers it stands out as one of the most conspicuous of spring-flowering shrubs. Kalmia glauca is another pink-flowered shrub of dwarf habit. Pyrus japonica is a good grower and a free-bloomer; flowers bright red. The double-flowered Kerria (K. japonica fl.-pl.) is another shrub which seldom fails to produce a good supply of its charming double yellow flowers. Another yellow-blossomed shrub of different habit is Forsythia suspensa. Its bright yellow flowers are borne on long, arching, leafless branches. Grows well in all soils, and flowers freely in shady positions. Ribes Gordonianum is one of the best of the Flowering Currants. Andromeda japonica should not be overlooked. It is very ornamental, and a free bloomer. Cytisus præcox is a shrub of graceful habit, and carries a rich profusion of small soft yellow flowers. Amongst Rhododendrons the dwarf rose-coloured variety named R. præcox is very handsome. Lonicera fragrantissima is a sweet-scented Honeysuckle which succeeds well in ordinary garden soils. The following shrubs flower in July and August; Veronica Traversi is a neat-growing evergreen shrub, with spikes of conspicuous flowers. Ligustrum sinense and L. Quihowi are a couple of white-flowered shrubs which succeed well in dry soil. Olearia Haasti, with its thick box-like leaves and clusters of white flowers, is a very ornamental shrub. Choisya ternata makes a very handsome bush. Its white flowers are very fragrant. Clethra alnifolia is very distinct. Its sweet-scented flowers are white and borne in racemes. Hypericum patulum is a good shrub, and thrives well in all soils. Indigofera Gerardiana is another easily-managed shrub of compact habit, with pale red flowers. Althæa frutex thrives in all soils and positions. Genista ætnensis, Spiræa ariæfolia, and Leycesteria formosa are good free-flowering shrubs.

Jasminum nudiflorum.—There is certainly no shrub which in mid-winter helps so much as this to give a little colour to dull suburban streets, and through being so frequently planted in such localities proves it to be one of the best flowering climbers for towns. For several seasons past it has flowered with more than usual freedom, a result most probably of the series of hot summers we have experienced in recent years. Like most other flowering shrubs, it enjoys abundant sunshine, and the gay, loosely hanging wands of yellow blossoms brighten these short winter days. How often has the gardener reason to recall the name of Robert Fortune with gratitude! It was he who introduced this Jasmine from North China when collecting for the Royal Horticultural Society, and none perhaps of his many introductions has become more thoroughly identified with English gardens.

Berberis nepalensis (Mahonia japonica).—Although the dictionaries make separate mention of each of these names, the plants grown under them are now considered to be the same species. What is known as Berberis Bealei, too, is merely a form, plants of both it and the type coming from seeds of the same plant. It is a widely distributed shrub, extending from North India to China and Japan. There are few evergreens in cultivation of more striking aspect than this, but, unfortunately, it is not hardy enough to stand the winters of the more favoured parts of this country. Near London it ought to have a warm, sheltered corner. Its stems are erect and unbranched, bearing the flowers at the top in a cluster of spikes. Even now the yellow colour is showing strongly in the buds, although it is usually from February to April that the shrub is fully in flower. The pinnate leaves are each 1 foot or even more in length and of rigid texture and pose. The leaflets are stalkless, oblique at the base, and armed with several stout spines, each leaflet resembling a Holly-leaf. This plant is not much grown in nurseries, its tenderness, slow growth, impatience of disturbance at the root, and probably limited demand all being against it; yet in places where it is sufficiently sheltered or where the winters are not severe (such as Cornwall or Devon) it makes one of the most picturesque of shrubs.

THE MISTLETOE.

WE have, on previous occasions, referred to the Mistletoe, and it will not, therefore, be necessary to write much concerning this interesting parasite. Our illustration shows it growing upon a very unlikely subject—namely, Cotoneaster microphylla—which, as will be seen, is against a wall, the Mistletoe having been there for about ten years. It would be very interesting to know whether any reader of GARDENING has seen Mistletoe growing upon a Cotoneaster before. Those who wish to introduce the Mistletoe into their gardens should devote an Apple-tree especially to it. The



Mistletoe growing on Cotoneaster microphylla.

berries from which it is to be grown should be gathered in March or April—not earlier, or success may be doubtful; earlier in the season the berries are not ripe. The branches on which they are to be placed should be from three to four years old. Selecting a clean bit of healthy bark, on the under side of the branch rub the berries on it, and they will be found to adhere. Blackbirds and Thrushes are very partial to them, so it will be necessary to cover them with muslin or net the tree. After a lapse of some three months the seeds will be seen to have thrown out sucker-like claws, when all danger from birds will be at an end and the plants will quickly increase in size.

Aucuba japonica fœmina.—Among hardy berry-bearing plants this certainly deserves much attention, more particularly, perhaps, as a pot plant for conservatory decoration. In this way compact plants of about 2 feet high freely set with bright scarlet berries form pleasing and attractive objects in many positions where things more tender or delicate could not exist. Many years ago the late Mr. Robert Parker grew a large number of small bushes in pots for winter use. By getting the plants indoors quite early in the autumn, many of the berries coloured well and a long way in advance of those unprotected, and when the plants carried plenty of highly-coloured berries they became objects of great beauty, surpassing in this respect such things as Solanums and Ardisia that require greater care and expense in their preparation. The handsome foliage of the Aucubas is in itself attractive, but doubly so when the plants are freely set with their brilliant clusters of berries that contrast so admirably with the dark green leaves. A good set of berries may be generally secured by plunging the small pot plants near the pollen-bearing plants in the open.

Blue Hydrangea.—In a garden on the shore of the Devonshire coast a fine bush of Hydrangea grew, which was of a light pink shade. Wishing to turn it blue, and having read of the effect of dressings of iron to produce it, I took an old rusty iron cask-hoop, broke it up into small pieces, and placed them round the roots on the top of the soil in the month of August. On my annual visit the following year this bush was covered with blue flowers, and the same on the second year; but it afterwards reverted to pink. I draw the conclusion that annual dressing with iron will keep the flowers blue.—M. B.

The large-flowered Mezereon (Daphne Mezereum var. grandiflora).—This variety of the Mezereon is noteworthy because it comes into bloom three or four months before the commoner form, and at a time when flowers out-of-doors are very scarce. It does not produce such an effective display as the ordinary Mezereon when in flower, for its blossoms, instead of expanding simultaneously, are spread over two or three months, from October to the new year. Compared with those of the type they are considerably larger, measuring sometimes as much as three-quarters of an inch across, and they are also of a richer purple. They possess all the charming fragrance so characteristic of this species. Besides this variety mention may be made of the variety alba, which has milky-white flowers, and comes into bloom in spring at the same time as the ordinary red-purple one. Daphne Mezereum is found wild in Britain, although it has possibly become naturalised and is not strictly indigenous. It seems, under cultivation, to be a comparatively short-lived plant, but it fortunately produces abundance of seed, so there need be no difficulty in keeping up the stock; yet, through neglect of this or for some other reason, it is by no means freely planted in gardens in spite of its great beauty and charm.

Elæagnus pungens.—This Japanese shrub is not only valuable as an evergreen, but also deserves notice as a winter-flowering hardy shrub. The flowers, which in shape may be compared to tiny blooms of Fuchsia, are pendent and produced in clusters at the leaf axils. They are of a silvery-grey colour, and have a strong, sweet perfume, which may most aptly perhaps be compared to that of a Gardenia. The leaves are from 2 inches to 3 inches long, and on the upper side are of a deep glossy green; beneath they are of a beautiful silvery colour and dotted with minute brown scales. Both surfaces are pitted with numerous small holes. This shrub grows 6 feet or 8 feet high in the neighbourhood of London, where it is perfectly hardy. As a shrub of considerably different aspect to the commoner evergreens in use, it is worth planting more freely than at present, at any rate in milder parts of the kingdom. The small variegated varieties of it in cultivation are very beautiful, and well worth growing in sheltered positions, but they are not so hardy as the green-leaved typical plant.

The Golden Osier (Salix vitellina).—Among the trees and shrubs with coloured bark which add so much to the interest and brightness of our gardens in winter this Osier holds a prominent place. Especially pleasing is the effect when the sun is shining, the mingled red and yellow of the mass of the erect shoots giving an almost flame-like aspect. Planted near water, too, as these are, the patch of colour is doubled by reflection. Salix vitellina is a British Willow, becoming a tree 30 feet to 40 feet high. It is not as a tree, however, that it is specially deserving of a place in the garden, but as a pollarded shrub. To obtain the brightest colours the plants should be cut hard back each February, and thus encouraged to send up numerous long, vigorous shoots, the bark of which is much more vivid in colour than the twiggy growths of large branching trees.

OUTDOOR PLANTS.

THE PRICKLY THRIFTS (ACANTHOLIMONS).

Although there are not more than about three or four of these lovely Statice-like-flowered plants in cultivation at the present time, many species are known. They are to a large extent, if not wholly, Asiatic, and it is to be regretted that we do not possess a larger number in our gardens, seeing how well the districts where many of them are said to be found have been explored by botanists of late years. The few we already have are quite a unique class of plants among our other alpines, flowering all through the summer in profusion. They affect dry rather than damp situations, and to see large plants flowering in the full blaze of the sun is a sight never to be forgotten. Our soil is well filled with broken bricks, etc., and we find this a good medium, as their health testifies; the centre is elevated, and it is a good plan where possible to plant them so that they may overhang clefts or ledges.

A. glumaceum is the most common in gardens; it is the most beautiful I have yet seen, and is certainly by far the most floriferous. It is a dwarf-growing plant, rarely more than a few inches in height, with crowded, short Grass-like foliage, the leaves stiff, and armed with sharp spines. The annual shoots bear a tuft of closely imbricated, spreading, and recurved leaves, the older ones generally withering as the growing point advances, which it does very rapidly, the more quickly forming large tufts of a very pretty appearance. The flower-stems are generally two or three times longer than the leaves, and bear a distichous spike of numerous and charming large rose-coloured flowers. It continues a considerable time in bloom, and is perfectly hardy in the neighbourhood of London, and does not seem to be affected in the least by the smoke. It may be propagated freely from cuttings or layers, simply singling the branches and notching and pegging down as many as may be required. When increased by cuttings they should be placed until rooted in a moderate heat, kept close, and gradually hardened off as they become established. It flowers in June, July, and August, and was cultivated about London as early as 1840. Native of Armenia. Synonym, Statice Ararati.

A. acerosum is a rare species, forming dense cushions of stiff leaves, glaucous, and armed with sharp points; it is, however, rather a shy flowerer; flower not so large as the above; rose. July and August. Anatolia, Tauria, &c.

A. androsaceum is a synonym of Statice Echinus, and is nearly allied to the above.

A. Kotschyi, a handsome species with white flowers, and

A. venustum are also desirable for borders We give an illustration of this. It is a rare and beautiful kind, with rose-coloured flowers. It was introduced from Cilicia in 1873.

A Prickly Thrift (Acantholimon venustum), with sixty-seven spikes of bloom, growing at edge of a dry, narrow border. From a photograph by Mrs. Stafford, Waldeck, Enfield.

MAKING ALTERATIONS.

I suppose no place is so perfect that improvements cannot be effected. It is certain that in many places the general style leaves much to be desired, and slight alterations would most emphatically be a step in the right direction. The idea is sometimes prevalent that such alterations entail a great amount of labour and the pulling of the place to pieces, but this is not necessarily the case if, as at present exists, the general arrangement of the flower garden is of a fairly natural character. It is then the question of the correction of a few abuses and a few additions, and not the necessity for radical changes. These last were more common some thirty years ago, and I remember having to assist in more than one such radical change—"improvements" they were called—when large slices of park or pleasure-ground were appropriated and laid out in formal gardens, terraced or on the flat, as the nature of the ground required. I am not, however, thinking at present of severely formal gardens of elaborate design and intricate pattern (one of those, by-the-way, named above was taken from an Indian shawl), but rather of the lawn, more or less open, with its occasional beds tenanted with various things, its ornamental trees and shrubs, deciduous and evergreen. Here the task of the flower gardener in any new operations would seem to be comparatively easy, but, unfortunately, additions are not always carried out in the best possible taste or objectionable features removed as promptly as their unsightliness would demand. Why, for instance, do we often find a row of standard Roses like inverted mops, each in its own tiny bed by the side of a pleasant walk bordering a lawn? Such a style not only often remains as a legacy of byegone planting, but is still adopted. It cannot be too strongly enforced that anything of the kind is a very objectionable feature. Roses should be grouped together in large beds specially prepared for them and the tiny circles promptly turfed up.

In place of the latter, if flowers are desired by the side of the path, beds of larger size may be formed at sufficient intervals to allow for a broad intervening stretch of lawn. Again, the introduction of unnecessary things is sometimes painfully apparent. I saw the other day a cosy corner on to which the windows of some best rooms looked and in close proximity to the same that had been cut up into a lot of little beds, and the latter actually severally filled with specimen plants of Cupressus, Thuja, Umbrella Pines, etc., and that, too, in the face of the fact that there was a thick background of evergreen shrubs and coniferæ, and that few other sites for the introduction of flowering plants were available. It was emphatically a place for a bold, irregular border in front of the shrubbery of the best herbaceous plants, and perhaps just two or three bold beds in the foreground. This is not a general protest against the use of specimen conifers—they are well enough in their way and place—but an objection to adding unnecessary foliage in the immediate vicinity of the house where there was already more than enough of it, and also the introduction of formality equally uncalled for. It is evident, too, that in many gardens there has been too much crowding both with respect to the blocking up of what would be interesting vistas and also in spoiling subjects that would, under happier conditions, have developed into beautiful specimens, and that even now would quickly improve given the requisite light and air. I was noticing the other day a scarlet Thorn and a snowy Mespilus from which a lot of old Laurels had been removed a few years back. They are now very shapely trees; the Thorn especially has a very large head, the branches on all sides nearly touching the ground. It is not uncommon in old gardens to find some good things hopelessly in the background, crowded out by common subjects planted with and allowed to overrun them. Sometimes they have become so drawn up as to be practically worthless, but at others they have retained their form fairly well, and in the latter case a judicious removal and yearly after-attention will result in a very fair plant.

It is probable, too, that in many alterations—especially in the way of new planting—we do not pay the necessary regard to existing surroundings. Where there is, for instance, as noted above, a great preponderance of evergreens—a state of things very common in old gardens—the tendency after removal should be to brighten up, to substitute nice flowering shrubs, or, in other cases, big herbaceous stuff for the monotonous greenery, taking care, however, first, in the event of any likelihood of trouble from rabbits, to wire effectually. The over-planting of conifers, especially if grounds are naturally somewhat dull and gloomy, is in its way as objectionable as too much dwarfer greenery. Again, in all new planting there should be plenty of variety.

I do not mean the kind of variety that is represented by an endless number of subjects on a limited area, but rather that no single species, however good, should monopolise the greater portion of the garden. One can understand the extensive planting of, say, Roses, Lilies, or American plants by those who take a special interest in them, and in their several seasons they make a very fine display, but it is not so much the concentration of the display on any one particular season that is required as extending it as far as practicable through all the months when outdoor flowers are available. I think with judicious planting one may be sure of flowers for at any rate nine months of the year, especially if they are not altogether confined to beds and borders, but are naturalised in any sites where they may reasonably be expected to flourish. It is doubtless the fact that in many places the amount of labour to hand does not give much chance for alterations.

Some, however, may be annually effected, and even a little alteration will be found a decided improvement if carried out in a proper manner. E.

Planting Lilies *(H. B. M. W. J.)*.—Now is a good time to plant the Lilies you mention. Plant about 4 inches deep, and place a little rough leaf-mould or Cocoa-nut-fibre over the surface to prevent the frost penetrating to them. They are better in the ground than if kept out of it during the winter, as the long drying impairs their vitality. A somewhat shaded border is eminently suitable for Lilies if the soil is good and deep. In dry weather give them a copious water supply, and they will increase in beauty year by year. Lilium longiflorum had better be left in the ground. Lifting will not benefit it. It is not, however, in many gardens that this beautiful Lily succeeds permanently. In numerous cases both this Lily and Lilium auratum die after flowering once; but the bulbs can now be purchased at so cheap a rate that a yearly planting is not expensive. Gladiolus Colvillei may be planted at once about 2 inches deep, giving a surfacing of Cocoa-nut-fibre. In light soil these increase rapidly, and may be left out without protection during the winter. In heavy soil a winter mulching will prove beneficial. These bulbs when left in the ground make an early start, their leaves at the present time being 6 inches high in some warm gardens.—S. W. F.

Tufted Pansies mulching.—In all cases where these useful plants were put out in the autumn they have made much new growth, owing to the prevalence of exceptionally mild weather during October and November. With a change to really seasonable weather, bringing with it some sharp and cutting frosts, these plants would be greatly benefitted by a careful mulching with some rotten-manure. I prefer that from the stable where peat-Moss-litter is used, this being short, and if exposed for some little time it can be easily handled, and well worked around the collar of the plant. There is a prejudice against the use of this material in certain quarters, and it has been suggested that it brings with it a fungoid growth, which, if true, is most undesirable. However, in all my experience I have never had reason to complain, but instead am pleased with its useful qualities. Failing such material, use rotten horse-manure, but see to the application of the mulching without delay. By the opening of the spring season these same plants, owing to the protection given to them by the mulching, will have attained to quite large proportions, and be some of the first to blossom. Until a few days since both the autumn-planted pieces and the old plants too have given quite a delightful display, and some of the flowers have been deliciously fragrant.—D. B. CRANE.

Clematises *(O. F.)*.—Clematis Duchess of Edinburgh and C. Lucie Lemoine belong to the Florida section, and are not hardy in all situations. We do not recommend these varieties for general open-air cultivation unless in favoured positions. Yours happens to be one in which they will not do satisfactorily, as it is too much exposed to cold east winds. The two varieties named are better adapted for growing in pots for conservatory decoration. Both varieties need cutting back yearly, which should be done in February. Shorten the old flowering wood and remove all the weak and worthless growths. The Jackmani type will answer your purpose admirably.

Japanese Wineberry (Rubus phœnicolasius).—I find the Japanese Wineberry does very well here. The fruit is splendid and excellent for jam. I find it better value than Raspberry-canes, so keep a good many plants. I grew it from seed got from America about five years ago. —CONSTANT READER, *Bandon, Cork, Ireland.*

Rhynchospermum jasminoides.—I think it is not generally understood that this climber is unusually hardy. We have had one surviving for thirty years, without any protection, against a south wall, and flowering more profusely than usual after the severe weather in '81 and '96, when Myrtles and Escallonia macrantha in the same position were severely hurt.—EBRA.

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THE KITCHEN GARDEN.

Vegetable Marrow culture. — In reference to the illustration of Vegetable Marrows in last week's GARDENING, it may be interesting to your readers to give the following few notes concerning them. The plants received no special culture, being planted out in a pit from which a crop of early Potatoes had been taken at the end of May. The lights were taken off, and the plants allowed to ramble at will, with an occasional stopping to keep them within bounds. They were well supplied with water, and also three times during the season with diluted liquid-manure from the stables; an abundance of fruits was obtained for daily use. The three green ones represented were all cut from one plant, and weighed respectively 60 lb., 47 lb., and 18 lb., or a total of 125 lb. The material they were grown in consisted mainly of leaves, the soil being only a little more than a foot deep, but the roots certainly liked the leaves, as on clearing out the pit we found roots in abundance. The ample waterings no doubt kept them cool and moist during the hot weather we experienced this season.—R. FILKINS, *The Gardens, Kevington, St. Mary Cray, Kent.*

Mushroom-bed and lime.—I see you mention in GARDENING, Nov. 27, p. 563, that Mushrooms do not seem to care for lime. In an article on Mushroom-growing by Dr. Répin, he says that, after spawning the Mushroom-bed, it should be covered or cased with a layer of "*terre calcaire on de sable*," if an abundant crop of Mushrooms is desired. Also, in M. Carrière's "Encyclopédie Horticole," under the term "gopter," it is stated that the soil used for casing the beds should be as calcareous as possible.—W. M.

Freedom Tomato.—In "Coming Week's Work" you say sowed Ham Green and Freedom Tomatoes. No seedsman mentions Freedom. Where can it be obtained? Is it a Tomato with another name? I shall be glad if you will give your views as to this Tomato, as it has been mentioned in your paper several times, and many, like myself, like to grow the best kinds, and wish to know which they are.—SUBSCRIBER.

*** This is a distinct variety, very hardy and free bearing. The reason it is not in many catalogues is it produces very few seeds, and is difficult to obtain, and consequently more expensive than other kinds. Apply to one of the large seed houses. If not in stock they will get it.

Cucumber Model.—Although during the last few years a good many good new Cucumbers have been raised, there are still several older varieties I would recommend to those who wish for quantity and quality combined. Amongst the very best is Model, a variety of medium length and perfect symmetry, having scarcely any neck, and taking a lot of beating when exhibited. Indeed, Model has, I should think, secured as many first prizes as any variety during the last fifteen years. The growth is very short, pointed, and the clusters of fruit so numerous that much thinning is generally necessary. Further, Model is equally suitable for frame culture as for growing in ordinary Cucumber-houses, and, as proof of its profitable character, I may mention that an old Norfolk grower for market, whose establishment I visited last year, had planted Model freely with several other old-fashioned, medium-sized varieties. I would advise amateurs whose experience of Cucumber growing is limited to give Model a trial.—J.

Tomatoes under glass *(Earliest)*.—We find much pleasure in answering the queries of so intelligent an amateur, and reply to your various questions. Your heating power, pipes included, is not sufficient to enable you to get up much heat in very hard weather, though enough to keep your house comfortable in mild weather. In giving ventilation it would not do to have a cast-iron rule. When dull and cold give none, unless you have ample heat on, but when the weather is mild or sunny, then give freely, but not to create cold draughts; also the house should be closed rather before the sun passes off to bottle in some heat so obtained. Your hours of opening and closing would do very well for the summer season. Of course, if you could fix over your ventilators when open slight wood frames, over which was stretched some open woolly substance, such as as frigi-domo, through which the cold air could filter, then there could be no cold draughts; it is well worth trying. Flannel would be too dense a material. The front ventilators are those which admit the coldest air. If you can have your cutting-raised plants in small pots now, well-rooted, and kept near the glass, you may find it safe to plant them out into boxes about the middle of January, and thus get them to set a good crop of fruit by June. Then you could raise other plants by sowing seed in March, and thus have them ready to succeed your first crop. Do not trust to cuttings more than once. There should be no undue quantity of water-drip from your boxes. Water rather sparingly than otherwise, never overdoing it. The plants will do very well 12 inches apart; if side shoots are kept hard pinched gross growth is not probable. If you mix one-sixth of lime-rubbish or one-eighth of crushed oyster-shell with the compost it will do good, though pieces of turf make the best drainage.

To keep Holly-berries from shrinking (*Bellefleur*).—Pick the Holly in the middle of the day if it is frosty. Let the sprigs stand in a drop of lukewarm water for a few minutes. Have a basin half full of turpentine. Dip in leaves and berries, and let them drip for quite one hour. Boil ½ lb. of white sugar in a ½ pint of water, with a few lumps of gum arabic. Let the syrup be quite cool, but not cold. When the berries have remained hung up for quite one hour dip them into the syrup. Hang them to drip, where they will not be disturbed or get dusty until the next day. Berries on a thread keep their colour without shrinking.—B.

Cycas revoluta flowering. — Is it common for Cycas revoluta to flower in this country? Our plant is an old one, and has lived for many years in the vinery. It has lately put out a crown of cream-coloured, hairy coral-like spikes with bright pink seed-pods (?) Are the seeds likely to ripen at this time of year, and in the vinery?—MONTACUTE.

*** Cycas revoluta requires to attain a considerable size and age before the flowering stage is reached; but in the case of old plants their flowering is not uncommon. The seeds—even if they partially develop—will be abortive, for all the Cycads are dicœcious—that is to say, the male and female flowers or cones are borne on different plants. It rarely happens that the two sexes of any one species are in flower at the same time in any garden; consequently cultivated plants are not known to produce fertile seed.

Double Daffodils early.—Introduced into gentle heat about the same time, these old-fashioned flowers are always a few days later in opening than is the Tenby, while the latter always precedes Ard-Righ by about ten days when given similar treatment side by side. The old double form, however, is very rich and effective in its handsome blooms, and, with the comparatively mild and genial weather of late, answers quite readily to a greenhouse temperature. The protection afforded by the greenhouse, together with the genial temperature, as also the beautiful sunshine of the past week, had a marked effect upon the expanding blooms, which have opened well, the flowers being handsome in the extreme. Although an old-fashioned garden plant, it is among the best for early work under glass, the blossoms singularly clear and pure in colour, and absolutely free from that amount of green which during the past few years has ruined large numbers of the flowers in the open in the natural season of flowering. There are, however, many strains of these double Daffodils, some of which are comparatively worthless, or at least vastly inferior when seen by the side of the rich glowing flowers now alluded to.—T.

Scutellaria Mocciniana.—The vermilion-scarlet heads of this are now very showy in the greenhouse. It is an excellent plant for flowering in comparatively small pots, and in this way may be used in divers ways. The plant is of comparatively easy culture, and roots freely in a warm bottom-heat.

Abutilon Golden Fleece is most effective by reason of its crowds of golden flowers, and as thus seen is very attractive. For small structures, however, its ample foliage would make too dense a shade at this time of year. As a pillar plant the same variety may be employed with excellent results

THE GLOBE-FLOWERS.

The Globe-flowers, like all popular genera of plants that are at all variable in character, are very much confused in the majority of gardens at the present time. They vary from seed, both in the size and shade of yellow or orange of the flowers, in the size and character of the foliage, and also in general habit. Although I fully agree with the utility of naming distinct varieties, I protest against this vast accumulation of names without substantial differences in the forms so named. Names are necessary, and so, unfortunately, are labels in most gardens, though the labels should be kept down as much as possible. This, in fact, is one of my reasons for being so much in love with the so-called wild gardens, where the Globe-flowers can be so much at home, and where charming combinations can be made without being marred by the label or the unsightly stake. The habit of growth dense and sturdy, the large golden-yellow or orange globes thrown well above the deeply-cut foliage, present an admirable picture in late spring and early summer, and which can be replaced by no other plants which I can at present call to mind. A good, deep, rich soil and plenty of moisture are essential to success with Globe flowers, and if the wild garden be variable in surface this may be very easily managed.

Mountain Globe-flower (Trollius europæus)

Globe-flowers, however, although good plants for the wild garden, can ill be spared from the garden proper, where in the mixed border or in beds they bridge over the season between the bulbs and spring flowers and the summer-flowering plants. Although confined to semi-marshy sub-alpine pastures and copses, they thrive well fully exposed to the sun if sufficient water be given at the roots. This is the advantage of planting in a deep, rich soil, as then the roots are less affected by drought. The best time, I find, to propagate the Globe-flower is in September, then the roots may be lifted and divided to almost any extent. If left, as is often the case, until the end of March they are almost sure to suffer, the foliage being very often destroyed by the sun or cutting winds, and, puny, short-lived flowers result. They may also be propagated by seeds, and these are best sown quickly; if kept for any length of time the germination becomes very uncertain. If liberally treated the seedlings will flower the second year, attaining their full strength during the third and fourth years.

The most popular species in cultivation are:—

T. ACAULIS.—A native of the higher Himalayan Mountains, and one of the most charming dwarf bog plants I know. It rarely exceeds 4 inches to 6 inches in height, producing in early April its bright golden-yellow flowers suffused with purple-brown on the outside, and usually as large as those of the smaller forms of T. europæus. It is perfectly hardy, and has been many years in cultivation. It will be found most useful for the low or moist spots of the rock garden, where I have seen it luxuriate in a fine peaty soil.

T. ASIATICUS, which also includes chinensis, Fortunei, and other forms, has deep, rich, orange-yellow flowers and bright, orange-red anthers. It has a wide distribution both in China and Japan, and is quite hardy even in the most exposed positions. It differs from the European Globe-flower chiefly in its orange, not yellow, flowers and their less globular form, in the small and finely-divided foliage, and taller growth. This and its varieties form a valuable group, and when grown in moist places in full sunshine produce flowers of the most brilliant orange, largely used, and much admired for cutting, etc.

T. EUROPÆUS (the Mountain Globe-flower) is an extremely variable plant, and so widely spread that almost every locality has its particular form. Raised from seed it also gives much variety, particularly in habit, and often in flowers and foliage. T. europæus has innumerable names in gardens, such, for instance, as pumilus, giganteus, Denayanus, dahuricus, dauricus, pallidus, americanus, albus, aurantiacus, napellifolius, etc. Some few of these, of course, are distinct varieties, such as T. e. aurantiacus. It is, like its parent, of strong constitution, flowers freely, and produces its flower-stems well above the handsome foliage.

The known species of Trollius, according to the "Hortus Kewensis," are T. acaulis, altaicus, americanus, asiaticus, caucasicus, dschungaricus, emarginatus, europæus, Ledebouri (see cut) (this has pale yellow flowers, and is a strong grower), patulus, and pumilus. D.

Trollius Ledebouri.

Propagating Daffodils by cutting the bulbs (*B. E. W.*).—"B. E. W.'s" suggested method of propagating Narcissi by cutting the bulbs is inapplicable to these subjects. In the case of tubers, such as Begonias and such-like, or bulbs composed of scales, such as Lilies, on the other hand, it is an excellent way of increasing the stock. Daffodil bulbs increase with fair rapidity if left in the ground a few years, though more so in some soils than others. Single bulbs when undisturbed often form good-sized clumps, which will divide up into a couple of dozen bulbs and bulblets. Strong varieties of the "trumpet" section are Emperor, Empress, Horsfieldi, maximus, Golden Spur, and princeps of the older varieties. A light, shaley soil is not best fitted to the rapid increase of Narcissi. Perhaps that in which they multiply most quickly is a porous medium of peat and disintegrated granite, such as is found in the Isles of Scilly, though in heavy loam they often show extraordinary vigour. The excessive dryness of a very warm south border under a wall, and the light soil, which, unlike the equally porous peat and granite, would not retain moisture, would not favour vigour.

Flower of Trollius asiaticus.

Planting Christmas Roses (*B. W.*).—The best months for planting Christmas Roses are February, after the flowers are over and before growth has commenced, and September, by which time the summer's growth will have been completed. Old plants should not be planted without division, as, when this is neglected, they often rot from the centre. The old plants should be carefully lifted, the soil

washed entirely away from the roots, which may then be divided into separate crowns by a sharp knife. The crowns should then be planted 18 inches apart in well-prepared soil. In strong loam, 2 feet 6 inches to 3 feet deep, Christmas Roses grow vigorously. The plants in question are evidently suffering from impaired root-action. It would be wise to lift in February, cut away any diseased roots, divide into single crowns, and replant. If a bed not less than 2 feet 6 inches in depth can be made for them this should be done, 6 inches of cow-manure being placed at the bottom and the rest filled in with strong loam. When planting, a little lighter soil should be placed round the roots.

FERNS.

NOTES ABOUT HARDY FERNS.

Of the many pleasant spots to be found in the majority of well-arranged pleasure grounds there are few more attractive than the hardy fernery. Ferns seem to commend themselves instinctively to nearly all parties, whether their admirers be enthusiastic or not in the matter of general gardening, and many varieties of hardy Ferns are in their way quite as ornamental as stove or greenhouse plants. I think that the choice of a site and other characteristics arising therefrom leave often much to be desired in such a fernery. The familiar groups of large stones, for instance, and tiny walks at regular intervals, with a lot of different varieties of Ferns huddled together in the smallest possible space, do not please the true Fern lover, for this indiscriminate huddling not only prevents the individual specimens from being shown to the best advantage, but is highly detrimental to the species of smaller growth, oftentimes the most lovely of all. The utilisation of a dell or ravine for such a fernery is also objectionable, for however pretty the general effect may be, it is almost impossible in such a case for the Fern lover to attend to his favourites, watch their growth, examine their progress, or report on conditions that may be favourable or unfavourable to their proper development. If a site is selected that can meet all requirements, I think it may be found on either side of a shady winding walk that has 6 feet or 8 feet of Moss or Grass for its verge, and this backed up by a good thick growth of Evergreens. Here plenty of space would be at hand to allow each variety ample room and provision made for any sorts requiring rather different treatment. Nearly all hardy Ferns are, however, not very particular in the matter of soil, provided it is rather deep, cool, and moist. There are, of course, some exceptions, and to accommodate such Ferns as object to any great quantity of soil a few stumps of trees dotted here and there at the side of the walk are very useful. These may be inverted, and all interstices amongst the roots filled up with soil, whilst any natural rising ground might receive occasionally a little artificial addition to accommodate any drooping Ferns.

In enumerating useful Ferns for planting, I will confine myself to the best known varieties and those that will do well at the expense of little money or labour. To commence with the small Ferns more suitable for covering stumps of trees, rocks, &c., there are few better than Asplenium Trichomanes (the common Spleenwort). I have found this Fern under several conditions, on one occasion partially covering an old sand rock in a bright exposed position. It is, however, seen at its bestin partial shade, and when growing in such profusion as to cover a considerable area of ground, as in certain places along the valley of the Wye, it must be a lovely feature. Cystopteris fragilis (the common Bladder Fern) is another capital subject for a sloping bank. It is of easy culture and readily procured. Two more Ferns of comparatively slender growth that would help to furnish the tree stumps are Blechnum Spicant and Ceterach officinarum, the last-named a very pretty Fern, and one that will well repay watching, as its fronds are gradually developed from the thick fluffy tufts.

The tiny Rue Fern (Asplenium Ruta-muraria) is also interesting. It is rather impatient of removal, and very small plants should, therefore, be taken, and these inserted in any tiny crevice where there is the least morsel of soil. For clothing sloping banks there are few better subjects than the two well-known Ferns, Scolopendrium vulgare and Polypodium vulgare, as when established they will soon clothe their quarters with a glorious robe of green. Having furnished all rising ground, tree-stumps, etc., the planter will turn to the remainder of the space at his disposal, and for this the choice of subjects is varied.

One of the best Ferns that can be used is undoubtedly the common Buckler Fern (Lastrea Filix-mas). The annual decay of the fronds is rather against it, but in a warm sheltered spot the old fronds will keep in a comparatively fresh state until the young growth is fairly developed, and this, when seen at its best in spring, is at once striking and very beautiful. It is a bold, robust Fern, and, with the exception of the common Bracken and the Osmunda, perhaps the strongest in growth of any native Fern. Dilatata and æmula are also species of Lastrea that may be safely included in the hardy fernery; æmula is more delicate in habit than either the common form or dilatata, and should therefore receive a position where it is not likely to be encroached on by more robust neighbours.

Polystichum aculeatum and P. angulare are also among the more vigorous of our native Ferns, and are very pleasing either in big groups or as isolated specimens. There are several varieties of both these Polystichums which, although they may be scarcely so vigorous as the types, are equally hardy, and may therefore be safely used. The black Maiden-hair Spleenwort (Asplenium Adiantum-nigrum) is an evergreen Fern of great beauty, and as it is found in great profusion in many parts of the country may be rather largely used in the fernery. I have found it doing well both in stiff and light soil. It is, however, a decided lover of shade, and is seen at its best on the most shady side of the bank. Thanks to the exertions of the indefatigable Fern hawker, it is unfortunately fast disappearing in many places where it was formerly found in quantity. The above are a few of the native Ferns that might form the nucleus of a collection to be extended at the will of the cultivator. These are all well known, pretty generally distributed throughout England, and may therefore be easily procured and grown. I may add that where there is plenty of room the Ferns may be dotted at intervals along the sides of the walk and the intervening spaces filled in with such dwarf-growing flowering plants as Aconites, Primroses, Bluebells, and Hypericum, or any similar flowering things that do not object to the amount of shade essential to the well-being of the Ferns. E.

Group of the Male and Royal Ferns.

Crickets and Carnations.—Quite recently in a large market nursery where winter Carnations are a feature we were surprised to note the destruction caused by these insects, more particularly to the expanded flowers, quite a large number of these being nightly destroyed.

2297.—**Carnation Magnetic.**—This has pink waxlike petals. I saw it growing in the garden of Mrs. Geo. Stocks, Sandway, Northwich, who raised it. It is a distinct advance.—Wingless.

FRIENDS OF THE GARDENER.

THE STARLING (STURNUS VULGARIS).

The question of whether birds are of use or the reverse in gardens is, I know, a much disputed point, and it is with some misgivings that I allude to the subject, for fear that someone of the anti-bird way of thinking should be incited to state their views, and so perhaps more harm than good to the birds would result. But if there is any bird which is more useful than another in gardens it is the starling, and against which there are no accusations brought, except by the fruit grower, and particularly by those who own Cherry-trees. Strawberries, Raspberries, Currants, Gooseberries, and Plums these birds do not meddle with, as far as I am aware, but they will sometimes attack Apples and Pears. Cherries are, however, their favourite fruit, and in Cherry orchards, I must admit, they are at times very destructive. But as "there is no Rose without its thorn," we should be lenient with the starling on account of his many good qualities. No one can have noticed starlings apparently hurrying over a lawn, almost at every step making a peck at some insect, without realising what a vast amount of insect life they must destroy. One of its favourite morsels is one of the grubs of the common daddy-long-legs. These grubs, as every gardener knows to his cost, are among the most destructive to his plants, as well as the most difficult to exterminate, and were it not for the help of these as well as other birds in destroying them, our lawns and flower-beds, to say nothing of the kitchen garden, would soon be in a sorry state. They are also of considerable use to farmers, for besides the grubs they remove from his fields they are of service to a large extent in ridding his sheep from the ticks that infest them. Starlings may often be seen on the backs of sheep picking out the ticks. They are very sociable birds, and may generally be found near dwelling-houses, even in suburban gardens, where few birds except the ubiquitous sparrow are ever seen. Except during the breeding season they are generally found in flocks, sometimes only consisting of a few, and occasionally in countless numbers. In the Fen districts they have been known to roost among the Reeds in such multitudes that the Reeds were quite broken down and rendered useless. In other places they congregate in vast numbers in woods, and the chattering they make in going to roost may be heard from a long distance off. Starlings are very fond of associating with other birds, and flocks of them may often be seen with rooks, jackdaws, and pigeons. They are much handsomer birds than most persons imagine, for at a distance they appear to be of a very sombre colour; but if seen tolerably near, and particularly if the sun is shining on them, their foliage will be found to be resplendent with purple, blue, green, and

copper, and almost every feather is tipped with cream colour, so that they are by no means a dingy-coloured bird. Starlings cannot be said to have any particular song, but they have a very melodious whistle, and many will at times reproduce the notes of other birds. Unlike most small birds, when moving on the ground they do not hop as blackbirds and thrushes do, but they walk, though in rather a waddling manner, putting one foot in front of the other. They make their nests in all manner of places—in holes, trees, cliffs, in old walls, and in any suitable position about dwelling-houses and other buildings. The nest itself is by no means an elaborate structure, composed almost entirely of dry Grass and roots. The eggs are of a pale greenish-blue colour. One pair will frequently rear two broods in the course of the summer, each brood consisting of four or five young ones. The eggs are laid in April, and the young birds usually leave the nest about the end of May. Their plumage is then of a greyish-brown colour, which is rather lighter beneath, and the adult feathers do not begin to show for another two months. In confinement they easily learn to repeat a few words or to whistle a tune; but I would never recommend anyone to keep a bird in a cage, as it must be most irksome to it. G. S S.

GARDEN PESTS.

A wasp colony.—As you may have destroyed my letter sent with wasps, will you allow me to state in answer to Mr. Hiams that the number sent to you was 300, but about 100 more were knocked in pieces, or otherwise crushed in capture. As I did not commence to collect for a day or two after they made their appearance, I think that there must have been quite or more than 400 in the nest. I had no opportunity of seeing if any were not hatched from cells, but the mice attacked the nest and released a great number. This I think to be the case, as some had their wings crumpled as if lately released from cells, and I heard mice at the nest.—T. Stanton, *Bath.*

The Chrysanthemum fungus (*F. E.*).—The brown fungus attacking the leaves of Chrysanthemums is a species of Æcidium. You should cut off and burn all the infested leaves as soon as possible, so as to prevent the spores flying about. Next season, as soon as the fungus makes its appearance, spray or wash the plants with Bordeaux-mixture, made by dissolving 1½ lb. of sulphate of copper in warm water. Slake 1 lb. of freshly burnt lime, and make it into a whitewash of about the thickness of cream. Then strain it into the copper solution and add 11 gallons of water; or an ammoniacal solution of copper carbonate, made as follows: dissolve 1 oz. of carbonate of copper in enough water to form a thick paste, dissolve the paste in ½ pint of ammonia (add more ammonia if this is not enough), and add water so as to make 9 gallons of the mixture.

Spotted Apples (*Beta*).—The spots on your Apples are caused by a fungus "Fusicladium dendriticum," by no means an uncommon pest. As a means of combating it, spraying with Bordeaux-mixture just before the buds open, and again just before the blossoms open, a third time just after the blossoms have fallen, and once again in about a fortnight is recommended by American authorities. It is not advisable to apply Bordeaux-mixture late in the season to Apples.—G. S. S.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

Dear Sir,—Kindly allow me to protest against Mrs. Jocelyn's notions of everything being in line, as lately preached in Gardening Illustrated, I think to a far too great extent. Lines are very well in nurseries and market gardens, where they are essential, and in small nurseries such as we may have in gardens for cutting or for increasing our things, but they are against all art and progress in the flower garden itself, or in borders or positions that should come into the picture. It is as easy to get beauty out of the clouds of heaven in stiff lines as out of flowers in that way. Mrs. Jocelyn's teaching is quite contrary to the whole spirit of the paper itself. Under-cropping and flowers of different seasons succeeding each other is an old and sound principle to which there is no objection whatever, but to put them in lines is an error if our gardens are to be picturesque in any degree. The true way is, as I think I have often read in Gardening Illustrated, bold, picturesque grouping. With a little care we may arrange these in the most charming ways, with enough of each to be effective, without being stiff or ugly or out of proper relation to those about it. W. S.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2441—**Aquatic plants for stove.**—Can you tell me what aquatic plants are suitable for a large tank stove)? Is there any book on the treatment of the same? Where can such plants be purchased?—Black Pearl.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2442—**Yucca gloriosa** (*Yucca*).—The dry summer is the chief cause of your Yucca flowering. We have several upon the point of bursting their blossoms. July is the usual time of flowering, and there is little hope of yours coming to any good so late in the season. If a backward spike, and we get mild weather, it may push out some blossom in the early summer.

2443—**Treatment of Chrysanthemums** (*Botany*).—It is always best to root fresh plants each year, and the growths now pushing up will give good cuttings. Do not attempt to root them until the middle of next month; and when you have secured sufficient, we would advise you to throw away the old stools. Young plants take up much less room, and are not so much trouble.

2444—**Roses for greenhouse** (*W. Nicholson*).—W. Allen Richardson Rose is a grand orange-coloured variety for the greenhouse; Maréchal Niel is still unbeaten for a deep yellow, and Reine Marie Henriette is a good deep crimson. We would prefer Clematis indivisa lobata in the other corner. This is a pretty white, starlike blossom, a good climber, and very profuse bloomer.

2445—**Dahlia tubers** (*Urmston*).—We have no recollection of this being received before. Lift the whole of your tubers, store in a dry and frost-proof shed; and, if you want to increase your stock, part them when the eyes are pushing out once more, taking care to have at least one eye upon each division. If you do not want to propagate, plant the bunch of tubers intact, and thin out the weakest growths next summer.

2446—**Lemon-tree** (*Lemon Pip*).—Your Lemon-tree, judging by the fine leaf sent, is in robust health and doing well. If it be too thick or dense cut out here and there a few of the weaker branches. If it be out of shape, some branches being longer than others, shorten them back somewhat. Do you give enough of water? Keep the stems occasionally washed or cleansed to keep down mealy-bug or scale, should any get on to the tree.

2447—**A bower fence** (*Justleigh*).—A lattice-work fence, the same as you describe, can be made by any rough carpenter, and one nail where each lath crosses will be ample. The class of wood used is almost immaterial so long as it is well painted. If you object to paint, use cleft Oak laths. Should the fence be more than 4 feet high, you will need have each other support of a stronger character; but any local carpenter could do the job, and give you estimate of cost.

2448—**Heat for greenhouse** (*Wilts*).—We presume the gas-stove has been used before, and if so, the condition of the plants must be your best guide. We see no reason why it should do harm. Yes, to do the Vine well you need a little artificial heat from March onwards, and especially when the Grapes are finishing, and during dull or wet weather. But if the Vine is doing well, there will be little room for other subjects in so small a house as 13 feet by 8 feet.

2449—**Making a tennis-court** (*Rosalie*).—Upon such a dry foundation asphalte would stand remarkably well, but is rather hard. If under cover we would use a fine-grained carpet of Cocoa-matting, similar to that used for cricket and tennis where Grass is not available. This could be removed when not in use, and would not be difficult to fix in the open, provided you kept the gravel level and had some spot to which the ends of matting could be fastened securely, so that it could be stretched tightly.

2450—**Treatment of Clerodendron Balfouri** (*J. G.*).—It needs a warm greenhouse or stove temperature. It is a good climber, and grows well in a compost of peat loam, and a little leaf-mould and coarse sand. Cut back close after flowering, and keep rather dry during winter. From 55 degs. to 60 degs. is ample at that time, but a rise of 10 degs. to 15 degs. is necessary when in full growth. Fresh growth should be encouraged in February. Do not prune away the growth made after cutting back when they have flowered, as this is the most valuable wood.

2451—**Plants for wall** (*J. G.*).—What could be better than Roses upon your wall? These would flower in June and July. Try the following, and plant them 6 feet apart, when they will soon cover the whole height: W. A. Richardson, Emilie Dupuy, Reine Marie Henriette, L'Ideal, Aimée Vibert, and Bardou Job. Ceanothuses and Clematises are also suitable, and might be placed the same distance apart. By intermixing these and the Scarlet Trumpet Honeysuckle you would have a very pleasing effect.

2452—**Heating a greenhouse** (*Flowers*).—You could not do better than have one of the small oil-stoves that heat water, several of which are advertised in these columns. If your oil-stove makes the plants dirty, it is clear you do not manage it correctly. To have the wick too high will cause a nasty smell and a sooty settlement upon all the occupants. If too low, you burn just as much oil, and again get an injurious and nasty smell. Quite a small stove should heat a house 8 feet by 6 feet. The question of brick or wooden walls is immaterial.

2453—**Lettuces** (*Tineside*).—There are but three really distinct Green Cos Lettuces suited for exhibition—Paris White, Giant White, and Winter or Hicks' Hardy Green. Cabbage Lettuces are meritorious for exhibition just as they produce solid, firm heads. A very fine green Pea for exhibition is Alderman. Other good green Peas are Sharpe's Queen, Mr. Gladstone, and Autocrat, these are all rather late. That is, if sown at the same time as the mid-season varieties, they pod about eight to twelve days later.

2454—**Streptocarpus** (*J. Page*)—These do very well in an ordinary greenhouse temperature during winter, and enjoy a moist bottom without too wet a compost and overhead watering. Keep them thus until the end of February, or early in March if very cold and dull; then repot into a compost of peat, turfy-loam, and leaf-soil, in equal proportions, with a dash of sharp sand added. Do not overpot, and take great care not to injure the foliage. From this stage they do well in a temperature of 65 degs. to 70 degs., but will thrive in one of 5 degs. to 10 degs. less.

2455—**Apricots under glass** (*B. J.*).—These fruits may be grown under glass, but in such case do not require the same strong sun-heat that Peaches require. With Peaches on a front trellis, Apricots do well on a back wall. They will also do well in large tubs or pots tied up to stakes or columns. We should, if trained under glass, like Peaches, much prefer a west aspect. Good varieties are Shipley and Moor Park, ripening in this order. You may get much useful information respecting Apricots under glass by obtaining "Modern Fruit Culture," price one shilling and sixpence, post free, from G. Bunyard and Co., nurserymen, Maidstone.

2456—**Cabbage club** (*S. E.*)—The best admitted remedy for clubbing, whether it be engendered by slime fungus, or by the club-beetle, is, without doubt, gas-lime. That should be applied to vacant ground at once, at the rate of 2 bushels to 3 rods, if clubbing is very bad. If it be not, then put 1 bushel to 2 rods of ground. After lying on the ground from four to six weeks, dig the dressing in. Even a good dressing at the same rate of fresh lime is good also. Rather than plant any of the Cabbage tribe, plant or sow Potatoes, Onions, Parsnips, Beet, or plant Seakale or Rhubarb, indeed anything other than Cabbage. By doing so for a couple of years the club trouble may disappear. Peas or Beans also may be sown with advantage.

2457—**Cigar-ashes** (*Carnation*).—We assume that even if you smoke the finest brands, the ash product from your cigars would have all the same a mere minimum of manurial value, especially as the process of combustion is slow. It is, however, a matter of which as a manurial application we have no experience. Suppose, by way of experiment, you save a tablespoonful, mix it with, say a pint of pot soil, and use it for a plant when repotted, and pot another plant exactly alike the other in a pot same size, and in soil without the ash, to test effects; or you may mix ash and fine soil in equal portion, and use it to top-dress a plant and note results. Possibly the ash may contain a minute quantity of potash, and if so, it will prove to have just such manurial value and no more.

2458—**Seakale blanching** (*Westmeath*).—If you had stated what were the conditions under which you were growing Seakale we could have given you a more practical reply. If yours is being grown in the form of permanent plants then all you have to do is to cover over the crowns with fine soil or ashes, in mounds some 8 inches deep, and over those lay any long straw-manure or leaves you may have to spare. If that be done in February you should have well-blanched Seakale ready to cut during April. Where Seakale is grown annually from root-cuttings to lift in the winter, and forced heads may be had blanched in warmth from Christmas onwards, and the latest left in the ground may be ridged over with soil, and the stem growths will be fit to cut if so treated in April and May.

2459—**Woodlice amongst Rhubarb** (*South Wales*).—You had better make traps to catch the woodlice that infest your Rhubarb. You should get nice flat roofing tiles, or small slates, or pieces of board, press one piece of either into the soil firmly, then lay across it at at both ends thin pieces of wood, just thick enough to keep another piece of wood, or till barely the eighth of an inch from the under one. Several of the traps may be laid about amongst the Rhubarb, and then examined every morning, the woodlice found in them being at once swept up on to a dust-pan and thrown into boiling water. So attended, there is no reason why you may not clear your bed of these pests in a few days. It is pleasant to learn of your flowers outdoors.

2460—**Apples for cordons** (*Springfield*)—Good eating Apples for this purpose are Kerry Pippin, Worcester Pearmain, Ribston Pippin, Cox's Orange Pippin, King of the Pippins, Adams' Pearmain, and Sturmer Pippin. These are of the best flavoured varieties. For early Strawberries for forcing you can hardly do better than have Noble, very fine, but poor in flavour, Le Gros Sucrée, and, the best of all, Royal Sovereign. If you grow one only then have the last. If you propose to

obtain pot-plants for forcing next year, you had better get strong plants of the variety at once, and plant them in good soil, in rows 2 feet apart. In the spring pinch out any blooms they may show, and then they throw runners for layering in pots earlier than do fruiting plants.

2461—**Mossy wall in house** (*A. C.*).—If your Cucumber-house is now empty, you can burn in it, when close shut up, sulphur dusted freely over red-hot cinders, but the moment it is laid on the fire you must get outside. If the house be close shut for twelve hours, everything living in it, vegetable or insect, should be killed. Or you may apply whitewash made with water in which soft-soap and soda have been liberally mixed. The whitewash should, however, be dabbed on whilst boiling hot, if possible. We fear, however, that the wall has not had any damp course of slate or lead put into it, and that if you kill the Moss for a time, it will soon grow again. We are pleased to learn that following this paper's instructions as an amateur you have done so well with Cucumbers and Tomatoes.

2462—**Decayed Parsnips** (*W. D*)—The brown spots seen on your Parsnips are the product of a fungus, usually generated in soil by too much wet, or too rich dressings of manure. It is well not to have Parsnip soil too highly manured, as large roots not only are likely to be thus affected, but they are relatively softer and more watery than are roots rather smaller, and grown somewhat closer together. To have Parsnips good when cooked they should never be too large to boil whole, and should be merely scraped and not peeled, or cut through the centre. If your roots are still in the ground give them a thorough dense dusting with fresh slacked lime. Also another autumn give a couple of such lime dressings a month apart, hoeing in the lime between the roots. That helps to destroy fungus and sweeten the soil.

2463—**Potting Camellias** (*E. Jones*).—Camellias are best repotted as soon as the bloom is off and new growth is pushing. They are rather impatient of root disturbance, and will do a long time in the same soil, if helped with a slight dressing of coal-soot, or soot water. They must be well drained, for although enjoying abundance of water while growing, the least suspicion of stagnation is fatal to their thriving. Use a compost of fibrous or turfy loam, with a little peat and coal-soot. A dash of sharp sand, not too fine a compost, and firm potting are great aids Camellias often fail through change of position and temperature. A cool and moist bottom, with plenty of overhead syringing and the avoidance of a sodden soil, are important. The present is a very good time to repot Roses.

2464—**Brompton Stocks** (*Martin*)—To have these fine biennial Stocks at their best, seed should be sown out-doors in the month of May. When the plants are strong they may be transplanted to where wanted to bloom, but unless your position is a warm one, it is wise to plant either under the shelter of shrubs, or of a house, wall, or fence. These Stocks, though reputed hardy, yet oftentimes are killed by severe frosts, especially if the plants have grown very strong. We have, in years past, found it to be a good plan after pulling out the strongest plants from the seed-bed, to later pot up many of the rest into large sixties. Get them well rooted, then shift them into 6-inch or 7-inch pots, and in that way keep them in a cool greenhouse or frame for the winter, planting out early in April.

2465—**Seakale** (*Delta*).—Your method of growing Seakale is hardly up-to-date. It is the old way of planting a permanent bed in clumps, to cover up with pots and manure to blanch the tops. If you have gaps in your plantation, and these constantly occur, you had far better get as many sorts as you want, the stronger the better, from a seedsman, and breaking up the places deeply, adding some well-decayed manure. Plant the new roots in threes, triangular, letting the crowns be just even with the surface. These will bear covering, blanching, and cutting, the same as the older ones. When in the spring all are cut over, then with a sharp knife cut the old crowns clean off to the ground; that compels the formation of new crowns, and these do not run off to flower as old ones will. Taking off short side crowns and planting them will be of no service to you.

2466—**Coke versus coal** (*Colonel D.*).—Whether coke or coal be the best article of combustion in furnaces depends very much on the nature of the furnace and the heat that may be required. All growers for market who have large ranges of houses, many of which are for forcing, and who have large, long furnaces, use Anthracite hard steam coal in preference to coke, as giving greater heat. For upright boilers, no doubt, well broken coke is best, because it is less liable to bake or clog. If you want to keep up a greenhouse temperature only, we should advise well broken coke, but if you want greater heat at night, then some well broken hard coal may be added with great advantage. Coal gives the quicker and fiercer heat, needing rather more attention in stoking. Coke is rather slower and more enduring. So very much depends too on the setting of boilers, and whether they are active or sluggish. That is as near as we can determine the matter for you.

2467—**Coke-dust for lawn** (*Anxious One*)—We have no experience of coke-dust, let it be ever so finely screened, as a dressing for Grass. It would, however, surprise us to learn that a dressing did the Grass any good, although it may do no harm. Coke, like coal, is an insoluble mineral, and possesses none of the manurial properties that pertain to soot or ashes, especially wood-ashes. Coal ashes at their best are never used as manure. As plant food they are worthless, so also, no doubt, is coke-dust. However, we shall be pleased if you will try it as a dressing, to learn later what is the result of the application. The soil dust you refer to found in sacks of Potatoes, on the other hand, should make capital Grass dressing, because it is excellent soil. It should be strewn over with the hand broad-cast as fast as obtained, dressing all the lawn gradually. Get it all dressed so soon as you can, and then occasionally roughly disturbed by brushing with a long broom.

2468—**Weed-killer** (*Alpha*). — Weed-killers, as offered by chemists, are composed of divers strong poisons, their compositions being trade secrets. We can very well imagine, however, that they include sulphuric or carbolic-acid, mixed with an abundance of water. Most certainly they are dangerous to use, yet gardeners do so, and find them to be most serviceable. We do not know how to advise you to obtain any similar compounds safer or cheaper. You may use salt, or a salt solution brine, but that applied at this time of the year makes the gravel exceedingly cold. Pouring boiling water—a large copper being kept in use for the purpose—exterminates weeds on gravel at once. Both these, and the latter especially, are cheap remedies. The water should be kept boiling in the copper. Oddly enough no one has ever patented an iron roller that can be kept intensely hot, and which run over gravel walks would burn up the weeds rapidly.

2469—**Book on pruning fruit-trees** (*Hampshire*).—We heartily wish we could specify any suitable book dealing with the pruning of all descriptions of fruit-trees. Even if there were such, the book could be useful to learners only, if abundantly illustrated with wood-cuts. Pruning varies so much according to kind of fruit, to form of tree, to variety, and to some other things as well, and directions suitable in one case cannot be suitable for all. The "Fruit-growers' Guide" is now the most comprehensive fruit book published, but that costs some two guineas, and is in three large volumes. Suppose you get De Breuil's "Fruit-trees," price 3s. 6d.; that may give you the information needed. Pruning varies somewhat with the passing years, newer ideas or methods growing up. For that reason many of the old standard books seem rather out of date. A book dealing with pruning alone would probably have a poor sale. The work is too much a matter for demonstration.

2470—**Old Apple-trees** (*Springfield*).—Your old trees evidently do not want root-pruning. Rather, they need feeding. Give the stems and branches as far up as they can be reached a good scraping and scrubbing with a hard broom, then make up a solution of soft-soap and clay, thick; then in another large vessel soak in water half a bushel of fresh lime. When dissolved mix the whole, and add, well stirred in, a pint of paraffin. Make enough to allow of all the stems and branches having a good dressing with a hard brush. Work the mixture well in Also either dust, whilst the branches are damp, all the heads with fresh slacked lime to kill the Moss, or syringe with strong hot lime-white. All that should cleanse the trees when the branches are thick Cut out one third of them first, then open the soil about the roots a good way, and bury in a dressing of well-decayed manure. That will encourage root-action. Also in the summer water freely with strong liquid-manure or sewage from cesspools.

2471—**Differences in glass**—I am getting a greenhouse erected, and would be pleased to know the difference—that is, to discern between 15 oz glass and 21 oz glass? I am aware the latter is the best.—INQUIRER.

*** *Look closely at the sheets, and you will see that the 21 oz. glass is the thicker. If you have only one kind of glass, and you do not know which kind it is, measure a square or sheet and then weigh it.*

2472—**Best dark Rose and Clematis for greenhouse**—Please say which you consider the best dark Rose for growing as a greenhouse climber, also the best Clematis?—J FILDES.

*** *Reine Marie Henriette Rose and Clematis indivisa lobata.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*A. E Bill.*—It it quite impossible to name a plant from so tiny a portion as you send. To the best of our belief it is one of the dwarf Saxifragas, or a side leaflet of Kalosanthes coccinea.——*Silvester.*—It is difficult to name Orchids from a small portion of growth Yours is one of the Cœlogynes, probably a variety of C cristata. Sphagnum Moss, peat, and a little coarse sand make a good compost. They must have thorough drainage, and plenty of water while growing. A warm greenhouse temperature is best suited to them when growing, but while at rest they may be kept in a cool greenhouse. If you look through our index you will find frequent allusion to this most useful and easily grown Orchid. The name of your other plant is Dieffenbachia nobilis. They are stove plants, and could not be grown except in a very warm temperature. We doubt if it would be worth your while trying, except to keep your present specimens as warm as your accommodation will allow.——*Nuts.*—These are the fruits of Terminalia Chebula, imported from India in large quantities for tanning purposes under the name of Myrobalans. The fruits had probably drifted from a wrecked vessel.——*W. Blundell.*—Probably Dipterix odorata (the Tonquin Bean) ——*W. Thompson.*—Cotoneaster Simmonsi ——*F. A. M.*—No. 1 is not F. Davis; it looks very much like a small bloom of Viviand Morel; No. 2 is W. H. Lincoln; No. 3, too poor a specimen.——*Gardener.*—1, Mutual Friend; 2, Niveum; 3, Excelsior; 4, Golden Gate. Other not recognised.——*Allegin.*—It is very difficult to say what the plant may be from a leaf, but we should think it is Spiræa gigantea, but would like to see it when in bloom.——*Brown.*—Habrothamnus elegans.——*O. F.*—The Marigold, an annual ——*Constant Reader.*—1, Adiantum concinnum latum; 2, Pteris tremula; 3, Doodia lunulata; 4, Adiantum Sancta-Catherinæ; 5, Please send better specimen.——*E. Marshall.*—Aloe gasterioides.——*Petworth.*—4, Kindly send a better specimen; 5, Epiphyllum truncatum; 6, Pteris serrulata cristata.

Names of fruits.—*E. Cooper.*—1, Wellington; 2, Crimson Queening; 3, Lady Henniker.——*Regular Subscriber.*—Bess Pool.——*Beauchief.*—Margil.——*Zircon.*—Apple Old Nonpareil ——*Petworth.*—1, Minchall Crab; 2, Very poor Scarlet Nonpareil; 3, Golden Reinette. Plants named under proper heading. —— *Sosturfhiel.*—Wellington.——*W. L. Porritt.*—A fine specimen of Rymer Apple.——*F. Hurst.*—The Apple is Winter Hawthornden and the Pear is Beurré Sterckmans.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and addresses of sender.

G.—Yes, it is the rule if the garden is of any size. Of course, there are plenty of gardens in which coals are not provided, but this is not the case in large establishments.——*D. T.*—Apply to Messrs. Corry, 15 and 16, Finsbury-street, London, E.C.——*Bellefleur.*—We should like a little more definite information, but will try and find out for you.——*A. B.*—Try Messrs. R. Smith and Co., Worcester.

PHOTOGRAPHIC COMPETITION, 1897.

WE herewith announce the result of the Photographic Competition for 1897.

LIST OF PRIZES.

Class 1.—COUNTRY HOUSES AND FLOWER GARDENS.

1ST PRIZE.—*Mr. WALTER ROSSITER, 9, Elm Place, Bath.*

2ND PRIZE.—*Mrs. HELEN GILLIAT, Abbots' Ripton Hall, Huntingdon.*

EXTRA PRIZES.

Miss Ellen Willmott, Warley Place, Great Warley, Essex. Three views of Hinchinbrook; Cottage in Kent.

Mr. C. Dixon, Holland House-gardens, Kensington. Bower covered with Wistaria; two views of Holland House; Vine and Clematis-covered House.

Mr. Frank Parkin, Pepper Arden, Northallerton. Azaleas at the Hayes; Herbaceous Borders; view of Pepper Arden; Lake view, Bothwell Castle.

Mrs. Barton, The Grove, Wishaw, Warwickshire. Four views of Cottage Gardens.

Mr. A. J. Edwards, West End, Morecambe. Heynsham Old Hall; Chatsworth House; French Gardens, Chatsworth; Border at Chatsworth.

Mrs. Deane, Fairfields, Fareham, Hants. Woodbine Cottage; Catisfield Cottage; old House at Wickham, Hants.

Miss Gaisford, Offington, Worthing. Two views of Offington House.

Mr. J. Cobbett, Stoughton, Guildford. Garden at St. Catherine's, Guildford; Golden Field, Liphook.

Class 2.—FLOWERING PLANTS.

1ST PRIZE.—*Miss ELLEN WILLMOTT, Warley Place, Great Warley, Essex.*

2ND PRIZE.—*Mrs. NEWMAN, Hazlehurst, Haslemere.*

EXTRA PRIZES.

Mr. Walter Rossiter, 9, Elm-place, Bath. Rosa pomifera; Wistaria; Chamærops Fortunei; Cactus.

Mr. J. C. Varty-Smith, Nandana, Penrith. Passion-flower; Primula farinosa; Ferns in Rock-garden; Study of Tree Pæonies.

Mr. S. W. Fitzherbert, Lanscombe House, Torquay. Rose on trellis; Rosa lævigata; Dracæna; Hydrangeas.

Miss Mabel S. Knox-Gore, Ardmore, Torquay. Lilium candidum; Roses on arch; Summer Chrysanthemums, etc.; Gladiolus gandavensis.

Mr. C. Mayor, Paignton, Devon. Erinus alpinus; Aster alpinus speciosus; Phlox setacea; Weigela rosea variegata.

Mrs. Shuttleworth Rendall, 10, Apsley-road, Clifton. Hyacinths; Apple-tree in bloom; Flower garden at Wilsford; a Lilac-bush.

Mrs. Deane, Fairfields, Fareham, Hants. Rose Ulrich Brunner; French Crab tree; Lilium giganteum; Galega officinalis, etc.

Mr. Henry Withers, School House, Knockholt, Kent. Campanula carpatica alba; Fritillaria Meleagris alba; Delphinium conspicuum; Auricula General Niell.

Mr. C. Metcalf, Mill House, Halifax. Christmas Roses; Azalea Mrs. Turner; Kalmia latifolia; Funkia Sieboldi alba.

Miss Gaisford, Offington, Worthing. Drimys Winteri; Stachyurus præcox; Beschorneria yuccoides.

Mr. J. C. Tallack, Livermere Park Gardens, Bury St. Edmunds. Double White Rocket; Delphinium cambricum.

Miss Mary Cotton, Ballynadigne, Lismore, Ireland. Tree Pæony; Carnation Souv. de Malmaison.

Mr. G. T. Hardman, Hayward's Heath, Sussex. Narcissus Mrs. Langtry; N. poeticus.

Mr. Edward Geo. Lowe, Eglantine, The Avenue, Trowbridge. Calceolaria; Clematis Jackmani.

Miss F. Pope, Coombe Down, Bath. Alstrœmeria.

Mr. J. E. Fletcher, Fairlawn House, Worthing. Prunus triloba fl.-pl.

Mr. E. W. Billington, Hill View, Park Hill, Ampthill, Beds. Rose Gloire de Dijon.

Col. Taylor, Stanhope-road, St. Albans. Adiantum grandiceps.

Class 3.—Borders.

1st Prize.—*Miss ELLEN WILLMOTT, Warley-place, Great Warley, Essex.*

2nd Prize.—*Miss E. F. WOLLEY-DOD, Edge Hall, Malpas.*

EXTRA PRIZES.

Mr. Thomas Taylor, Crowsley Park, Henley-on-Thames. Groups of Camellia, Spiræa ariæfolia; Clematis montana; Lupins; herbaceous borders.

Mr. C. Dixon, Holland House-gardens, Kensington, W. Two views of rock garden, Holland House; Myosotis palustris on a wall; a mixed border.

Mrs. Martin, Lyndhurst, Gravelly Hill, Birmingham. View at Lyndhurst; herbaceous border; group of Papaver orientale; Olearia Haasti.

Mr. S. W. Fitzherbert, Lanscombe House, Torquay. Polypodium cambricum in rock garden; Oak Fern; Æthionema cordifolium; view in rock garden.

Mrs. Barton, The Grove, Wishaw, Warwickshire. A trailing Campanula; part of wild garden; Rose border.

Mr. Walter Rossiter, 9, Elm-place, Bath. Lake spring; Sundial.

Miss Mabel Gaisford, The Grove, Dunboyne, Ireland. Herbaceous border; Group of Azaleas.

Class 4.—Lawns, etc.

1st Prize.—*Miss WILLMOTT, Warley Place, Great Warley, Essex.*

2nd Prize.—*Mr. J. COBBETT, Stoughton, Guildford.*

EXTRA PRIZES.

Miss C. H. Gunner, Holm Oak, Bishops Waltham, Hants. Four views of Lawn at Holm Oak.

Miss Barron, Cranborne Corner, Ascot. Rustic Boat-house; Rustic Archway; Old Apple-tree.

Mr. C. Dixon, Holland House-gardens, Kensington, W. Achillea ptarmica fl.-pl.; Echinops ruthenicus; Hydrangea paniculata grandiflora.

Mr. Walter Rossiter, 9, Elm-place, Bath. Cherry-tree; A Rock garden.

Miss Mabel Gaisford, The Grove, Dunboyne, Ireland. Blue Anemones.

Class 5.—Fruits.

1st Prize.—*Mr. F. PARREN, 38, Northgate-street, Canterbury.*

2nd Prize.—*Mr. J. C. TALLACK, Livermere Park-gardens, Bury St. Edmunds.*

EXTRA PRIZES.

Mr. A. W. Brown, Belwood Cottage, Perth. Apple Warner's King; Apple Peasgood Nonsuch; Grape Gros Colman; Grape Cooper's Black.

Miss Ryves, The Mount, Buddleigh, Salterton, Devon. Pear Glou Morceau; Pear Brown Beurré; Plum Prince Englebert.

Mr. E. G. Lowe, Eglantine, The Avenue, Trowbridge, Wilts. Plum Coe's Golden Drop.

Class 6.—Vegetables.

1st Prize.—*Mr. F. PARREN, 38, Northgate-street, Canterbury.*

2nd Prize.—*Mr. J. C. TALLACK, Livermere Park Gardens, Bury St. Edmunds.*

EXTRA PRIZE.

Miss F. S. Pope, Coombe Down, Bath. Yellow Tomatoes in pots.

Class 7.—Cut Flowers.

Prize. — *Mrs. CHANCE, Wheatfields, Worcester.*

EXTRA PRIZES.

Mr. G. Ingram, Ascot. Hedera Rægneriana in vase; Pot of Dog's-tooth Violet; Vase of Scabious; Rat-tailed Cactus.

Mr. J. Cobbett, Staughton, Guildford. Vases of Tulips, Lilac, Narcissus, and Gladiolus; Pot of Pelargonium Woodside Rival.

Miss Hutley, Derwards Hall, Bocking, Braintree. Baskets of Columbines; St. Bruno's Lily; Vase of Dictamnus fraxinella; Table Decoration.

Mr. C. Metcalf, Mill House, Halifax. Vase of Poppies and Grasses; Sprays of Wild Cherry, Cluster Cherry, Double Cherry.

Miss Mary Cotton, Ballynadigne, Lismore, Ireland. Vases of White Rose, Day Lilies, Lavender Clematis; Basket of Wild Daisies and Grasses.

Col. Taylor, Stanhope-road, St. Albans. Vases of Double Poppies, Pancratium, Ivy-leaved Geranium.

Mrs. Martin, Lyndhurst, Gravelly Hill, Birmingham. Vases of Rose Catherine Mermet, Double Pyrethrums.

Miss Amy Harman, 148, Hither Green, Lewisham. Stands of Pyrethrum, Single Dahlias.

Miss Turner, Kenningham Wallands, Lewes Vase of Carnations; Spray of Carnations.

Mrs. W. Saunders Knox-Gore, Belleek Manor, Ballina, Co. Mayo, Ireland. Two Table Decorations.

Class 8.—Vases, etc.—There was only one entry for this Class, but the photographs were not of sufficient merit to gain the prize.

EXTRA PRIZE.

Miss A. Morris, Hillside, Enfield. A tool-shed; a summer-house.

The causes of failure have been various—viz., bad flower gardening, that is to say, hard patterns of carpet and other forms of bedding, which, however carried off by their colour, look shocking in photographs; bad building, the mark of the Victorian architecture over so many houses, ugly railings and iron work, fussy, broken rock-work, and ugly patterned vases; overcrowding of cut-flowers and ungraceful arrangement of the same; too great reduction of subjects; too many Lilium auratum; too many Orchids; over-exposure of plates, and ugly purple colour used in printing the photographs.

GARDEN AND PLANT PHOTOGRAPHS, 1898.

The Editor of The Garden and Gardening Illustrated announces Photographic Competition for the season of 1898.

LIST OF PRIZES.

Class 1.—Country Houses and Flower Gardens.—A prize of Ten Guineas, and a Second Prize of Five Guineas, for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm, manor-house, rectory, and cottage gardens may be included in this class.

Class 2.—Flowers and Shrubs of the Open Air.—A prize of Six Guineas, and a Second Prize of Three Guineas, to the sender of the best series of not less than twelve photographs of the above. These may include wild plants or bushes, or any plant, flower, or shrub grown in the open air, including also half hardy plants put out for the summer, and either single specimens or groups, or the effects resulting therefrom, in beds or borders. Shoots also of rare or beautiful plants photographed in the house may be included in this class.

Class 3.—Indoor Flowers and Plants.—A prize of Five Guineas, and a Second Prize of Three Guineas, for the best series of indoor plants—greenhouse, stove plants, Orchids, or any other plant not of the open air—either single shoots, plants, or specimens, or the effects resulting from good grouping or other arrangements of such plants separately or in association with others. Ferns or groups of Ferns in houses may be included in this class.

Class 4.—Picturesque Gardens.—A prize of Six Guineas, and a Second Prize of Three Guineas, for the best ten views of ferneries, rock or water gardens, old orchards, lawn trees, and climbers. This may include picturesque grouping of native plants or trees, also woodland and pleasure ground and park groups or effects.

Class 5.—Best Garden Fruits.—A prize of Five Guineas, and a Second Prize of £2 10s., for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 6.—Best Vegetables. — A prize of Five Guineas and a Second Prize of Two Guineas for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 7.—Vases, Cut Flowers, Table Decorations, etc.—A prize of Five Guineas for not less than twelve photographs of arrangements of flowers or plants in vases, table decorations, and cut flowers. Merit to be in graceful effect.

Class 8.—Garden Structures of Good Design.—A prize of Five Guineas for not less than twelve photographs of seats, bowers, summer-houses, loggia, pergola, stone and other seats good in form, fountains, garden houses, wrought iron garden gates of good form, bridges, boat-houses, flower-bed "baskets," garden sun-dials. This class may include any structure of garden, pleasure ground, or park use.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until November 15th, 1898.

What to avoid.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

First.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

Second.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

Third.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

LAW.

Validity of notice to quit.—On April 1st, 1893, I took about 2 acres of land for market garden purposes on a verbal agreement, the tenancy to commence on May 1st, 1893. I also held under the same landlord a cottage and garden, but held these separately from the field. On October 15th, 1896, the landlord served me with notice to quit the cottage, garden, and garden-land "on the 30th day of April next, or at the expiration of the year of your tenancy

which shall expire next after the end of one half year from the service of this notice." I gave up possession of the cottage and garden on May 1st, 1897, but refused to give up the land on the ground that in respect of the land I was entitled to a year's notice. The landlord says the notice is a good notice for May 1st, 1898. Is he right?—DOUBTFUL.

*** My own opinion is that the notice is bad. It is clear that it was a bad notice for May 1st (or April 30th), because it was only 197 days' notice, whereas you were entitled to a year's notice. It is also expressed in the alternative as "at the expiration of the year of your tenancy which shall expire next after the end of one half year from the service of this notice." Half a year from the service of the notice expired 183 days later (or on April 16th), and the year of your tenancy which expired next after the 16th of April, actually expired on April 30th (or May 1st), and therefore the notice was bad for that year, and there is no mention of any other year. But although this is my own individual opinion, I can scarcely advise you to rely upon it, as in nearly all the text-books the forms given follow the words of the present notice. I think the words used should have been these—"or at the expiration of the year of your tenancy which shall expire next after the end of one year from the service of this notice," and had those words been used the notice would undoubtedly have been good for April 30th, 1898. As already stated, I cannot advise you to contest the point, because there can be no question that you understood what the meaning of the notice was intended to have been. Had there been any doubt as to the actual meaning, you might have properly contested any proceedings your landlord might found upon the notice. —K. C. T.

Obstructing view from window.—Can my neighbour build a high wall and obstruct the view from a window that has existed for sixty years? Can I do anything to hinder him? Between us there is a path 6 feet wide.—ANXIOUS.

*** No right to an obstructed view can be acquired by any number of years' enjoyment, and you can do nothing to hinder the blocking of the view. But if the light to the window is appreciably obscured you could enforce the removal of a part of the wall or recover damages. The right to light is gained by twenty years' enjoyment, but if the wall is 6 feet distant from the window, and the height of the wall is not 6 feet above the bottom of the window, there will be no appreciable interruption to the light.

A neighbour's boundary (*Potsy*).—In the question originally asked it was not stated how the position arose, but it seems my assumption was correct. If it was, there would in the conveyance by the vendor be almost certainly mutual covenants, expressed or implied, giving each party certain rights of access, etc., and I should expect to find a covenant, mutual or implied, under which you would have the right to enter your neighbour's garden for the purposes named. But this would only mean at reasonable times, once or twice a year, unless it was evident at other times that repairs were necessary. Unless such rights are given you, the wall could only be repaired and inspected by you by getting over it, and by passing materials over it. Much depends in any case upon the situation of the wall and the buildings adjoining, upon its height, etc. You should examine your deeds, and, if you cannot understand them, take them to your solicitor. The extent of the footings may be ascertained by digging at the bottom of the wall.—K. C. T.

Tenant's liability to repair.—I hold a small nursery on a lease for the term of seven years, expiring in September next. I am thinking of then retaking the place upon a yearly tenancy if the landlord is agreeable. Should I have a written agreement, as the glasshouse is rather old? Should I be liable if it were damaged by wind?—FLORIST.

*** Written agreements of tenancies are always advisable, and when a tenant takes a place upon a yearly tenancy at the close of a lease to himself, it is especially desirable to have a written agreement. If there is no such agreement, there may be a presumption that he holds upon such of the terms, covenants, and conditions of his expired lease as are consistent with yearly tenancy. Leases often contain covenants for repair by tenants, and so it will be better to avoid any difficulty or dispute by having a written agreement strictly defining the liability of the tenant to repair.

Notice to quit — surrender of tenancy.—On October 11th I gave my landlord six months' notice to quit in accordance with the written agreement, and I told him if he could let the premises I would at once give him possession. Three weeks ago he came and said that he had let the premises, and he asked me to clear out in three weeks' time, which I promised to do. He now tells me that the man to whom he had let the place will not have it; but in the meantime I had taken another house. Shall I be liable for rent until the expiration of my notice if I remove to the house I have taken? A CONSTANT READER.

*** On the facts stated I think there has been no real surrender of the tenancy, and strictly speaking you will remain liable for the rent if you do remove. But I do not think the landlord will ever take any proceedings if you do remove, and if he did take proceedings it is not at all certain that he would succeed.—K. C. T.

BEES.

WHITE COMB HONEY FROM STRAW SKEPS.

IN the old days of Bee-keeping, before the introduction of the bar-frame hive, the following method of procuring surplus honey while preventing swarming to an undue extent was practised by some apiarians with great success. Two stout floor-boards were provided, and from the front of each a piece was cut in a sloping direction to answer the purpose of entrance, another being similarly formed on the right and left side of each, and made to correspond exactly when the boards were placed side by side. Then before the time of swarming a strong stock was placed upon one of these floor-boards and an empty skep on the other, a small tunnel of wood being fixed between the two side entrances to connect the hives; the doorway of the stock hive was then stopped so that the Bees could have no way of egress except through the empty hive, the hives and boards being then so moved along the stand as to bring the new entrance into the same position as the old entrance occupied. This affording the Bees more room, put a stop to swarming and gave the increasing population plenty of space for building extra combs. On the hive becoming stored with honey, it was removed, when a second yield was sometimes obtained, the doubled population doing much more work united than they would have had they occupied separate hives, as in the usual way, and by this means a skep of white comb honey was often obtained early in June (and without the destruction of a single Bee), at a time when the price of honey is much higher than it is later on in the season, when the general honey harvest takes place. The queen does not lay her eggs in a temperature lower than 80 degs., as this appears to be necessary for hatching the brood; the added hive, being cooler, caused her, therefore, to remain in the stock-hive to deposit her eggs and rear brood; in the stock-hive was also deposited the pollen to be used in brood rearing, so that in the added hive nothing but fine, pure honey was stored. The removal of the store-hive was effected by cutting off the communication by means of a piece of tin slipped between the side entrances, while the entrance to the honey-hive was closed, and the mouth of the stock-hive was brought into the some position by pushing the hive along the stand; this enabled the Bees to find their way easily into the parent hive on their leaving the honey-skep on its removal. To ventilate the honey-skep a piece of perforated zinc was fixed over the crown hole, and covered till the Bees had commenced court building, when the covering was removed, and the perforations kept clear from propolis by means of a piece of wire; constant and regular ventilation was thus afforded, and the hive being kept cool enabled the Bees to perform their work much more quickly and better than had no ventilation been afforded, while the result was the production of the purest honey and wax. Of course, this method of obtaining white comb honey is not to be compared in the matter of neatness and convenience with the modern way by means of the 1 lb. section, still large yields were obtained with but little trouble. S. S. G.

BIRDS.

Death of Canary (*Mrs. Whitman*).—The plumage and claws of your bird were in a very dirty state, and the poor thing had evidently received but very little care and attention, and must, of late, at all events, have passed a miserable existence. The immediate cause of death appears to have been phthisis, which arises in the case of cage-birds as a sequel to diseases in other parts of the body, and suffering from which they gradually pine and waste away. Lung troubles are also often brought about through their cages being exposed to draughts of cold air, and although they require good ventilation, and can bear neither a hot, close room, nor exposure to cold, fresh air without draughts is a point to be rigidly attended to in order to keep Canaries in health. Cleanliness, again, is not less important than temperature and proper diet, for without due attention to the supply of water for bathing, the frequent cleaning out of the cage, and a liberal allowance of sand, no bird can remain in good health for any length of time. Its feet become diseased, its plumage soiled, and it becomes the victim of minute red parasites which cover the bird beneath its disarranged plumage, lurking during the day in the cracks and fissures of the cage, and coming forth at night to torment their victims. Under these circumstances, if not speedily relieved, the bird soon dies. You appear to have treated your bird judiciously in the matter of food, and, provided the Hemp-seed was given in very small proportion, it was not the feeding that caused its death.

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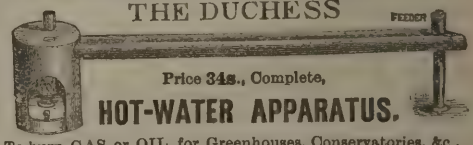

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GARDENING ILLUSTRATED.

No. 981.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* DECEMBER 25, 1897.

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CHRYSANTHEMUMS.

BUSH CHRYSANTHEMUMS.

To obtain bush plants the cuttings may be taken at once; but some growers will defer this until the end of January or beginning of February. To obtain good plants, three cuttings of one variety may be placed in a large 60-sized pot; especially in the case of the weaker varieties, as when they are placed singly in a pot they require great attention. It is preferable to place them in a cold-frame close to the glass, with a temperature not much below 40 degs. Fah. Air should be given on warm and bright days to prevent the cuttings from damping, and when they are struck ventilate more freely to obtain a strong and sturdy growth. As soon as the plants are 5 inches high stop them for the first time, to induce them to throw up three or four shoots from each cutting. From this time until the middle of June the chief point is to obtain a good and well-formed plant by keeping them pinched when the growths are 4 inches to 6 inches in length. In April the plants are nearly ready for a shift, a 6-inch pot being of ample size. They may now be placed in the open during the daytime, with a temporary covering during the night in case of late frosts. When the plants are rooted do not allow them to become dry to cause a check, and thus lose all the bottom foliage, and cause the plants to look unsightly throughout the summer. The final potting will be necessary the last week in May or first week in June, according as the plants root, using a 10-inch pot or one of larger size if specimen plants should be needed. The soil for the final shift should consist of some good turfy-loam, but not too light and sandy. Dry cow-manure is preferable, with a little leaf-soil and soot. It is a great advantage to plunge the plants in ashes during the summer months to keep the roots cool, and thus avoid constant watering. When the plants are placed in their summer quarters they should be staked at once to prevent them being broken with the winds. When well rooted into the new soil a little liquid-manure is then necessary, soot-water and cow-manure being preferable. W. J.

Chrysanthemums for a small greenhouse (*Student*).—As you state your greenhouse is only 9 feet by 6 feet, you must necessarily have dwarf plants to properly control them in so small a structure. You also ask for the display to spread over the three months of October, November, and December. The sorts we recommend here are not necessarily exhibition plants, but are given for their good all-round qualities. We append eight sorts for each month. October should be represented by Mrs. A. J. Parker, light pink, shaded salmon, very pretty; Emily Silsbury, an easily-grown pure white; Roi des Précoces, rich crimson, very free and bright; William Holmes, rich crimson; Source d'Or, terra-cotta; Yellow Source d'Or, rich golden-yellow; Samuel Barlow, bright salmon-pink, very free-flowering bush plant; and Clinton Chalfont, rich yellow. November sorts should embrace Souvenir de Petite Ami, pure white, very dwarf and constant; W. H. Lincoln, rich golden-yellow; John Shrimpton, rich crimson; Annie Cliban, silvery-pink; Chas. Davis, bronze, shaded rose; Viviand Morel, silvery-mauve; Western King, purest white; and Phœbus, yellow. December sorts are more difficult to find; however, grow L. Canning, pure white; Golden Dart, golden-yellow; Jeanette Sheahan, golden-yellow, tinted bronze; Mrs. W. Filkins, bright yellow spidery flower, very free, small; Princess Blanche, white; Mme. Felix Perrin, soft rose, very free flowering; Golden Gem, crimson-bronze, very late; and Royal Windsor, creamy-yellow, shaded orange. All the above are Japanese sorts.

Chrysanthemums—treatment after flowering (*G.*).—If you wish to propagate from the old plants, they should be cut down as they go out of flower. The sooner this is done the better, because the energies of the plant are directed to the production of new growths, and it is only from these that the best results are to be obtained. You will notice that some of the plants are wonderfully free in producing new growths, while others are just the reverse. The first kind should be cut down to within a few inches of the soil, and the second kind only cut down just below where the first break took place last season. This will leave a foot or two of stem remaining, and may have to produce the stock for next season's growth upon it. Where there are crowded growths on the cut-down plants, the weak and spindly shoots should be cut out, in this way giving those remaining an opportunity to develop growth of a robust kind. Keep the plants in a cool greenhouse, and place them as near the glass as possible. Then, as the cuttings are wanted, they may be detached with a sharp knife, and should not exceed 3 inches in length. A useful compost may be made of loam and leaf-mould in equal parts, and a liberal use of coarse sand. Mix these together, and place the soil in pots or boxes, of different sizes to suit the needs of the different sorts. Insert cuttings, pressing them in firmly at their base, watering them in with a fine-rosed can.

Chrysanthemums with hard centres (*F. E. H.*).—You are at a distinct disadvantage so far north (Scotland) in growing the Chrysanthemum in a free manner, and it seems the only way out of the difficulty is to retain the buds fairly early, growing only those which are not late in their period of flowering. The blooms submitted to us are not what are generally termed those from "hard" buds, but simply lack the requisite number of florets to make a full and double flower. To achieve this result it is important that early buds—we should say "crown"-buds—be retained, as failing in this respect you must not expect to get flowers of a useful kind. Chrysanthemums so late in the season need more than a cool-house; there must be artificial heat of some kind, or the blooms will never develop satisfactorily. Regarding their culture, we would suggest you should commence to insert cuttings for next season's display at once, so that you may have a forward lot of plants early in the year, and also that they may be grown on well throughout succeeding seasons. This will assist you to get the "crown"-buds in good time and at a date sufficiently early for the buds to develop full and double flowers. Evidently the plants still growing are running on to the terminal-buds, and these will probably be useless this season.

Chrysanthemums—buds from cut-down plants (*Francis James*).—Yes; when a plant is cut down or pinched back in March, and a second "crown"-bud recommended to be retained, we mean that the plant is to make the next break naturally, which is caused by the appearance of the first "crown"-bud. We should prefer first "crown"-buds of Edith Tabor, Mrs. W. J. Godfrey, and Mlle. Thérèsa Rey. Second "crown"-buds of Mons. Chenon de Léché and Australian Gold may give you somewhat smaller flowers, but they will be of high quality.

Chrysanthemum buds decaying (*William*).—It is exceedingly difficult for us to determine the cause of your buds failing to open and decaying without our first seeing a specimen. Probably you have kept your house in too cool a condition. You should maintain a temperature of about 45 degs., more or less, according to climatic conditions. You do not state whether your plants are in a heated glass-house, and this is very necessary in a great many instances to develop satisfactory blooms.

Chrysanthemums — white sport from Etoile de Lyon (*W. F. Dark*).—The spray of blossoms of what you term a white sport from Etoile de Lyon was very pretty for so late in the season. You can hardly call it a pure white sport from that variety, as we had no difficulty in tracing a faint tinge of rose colouring on the outer florets. All the same, the flowers, as submitted to us, for all practical purposes, would answer the requirements of a white sort for late cutting. There are better white sorts for late cutting than the sport you sent to us, and we are afraid you would have a difficulty in getting a trade specialist to send the variety out.

Chrysanthemums for cutting October to December (*Geordy*).—To get a collection of plants to blossom during the above period is a simple matter. We cannot do justice to the selection, owing to the small number of sorts required. For an October display you could not well do better than obtain cuttings or plants of Lady Selborne, a freely-flowered white sort, nice bushy habit; Yellow Selborne, a rich yellow sport from Lady Selborne, and possessing equal merit to the parent variety; Clinton Chalfont, a bright and rich yellow sort, very free and of medium habit; and Mme. la Comtesse Foucher de Cariel, rich orange-yellow, very free and dwarf. This last sort should not be disbudded when useful sprays may be had in abundance. Follow in November with Mlle. Lacroix, a pure white, very free, and with a nice habit. Source d'Or, bright orange-red, a standard cut-flower sort; John Shrimpton, a rich crimson flower, free and dwarf, and Reine d'Angleterre, a lovely rosy-mauve, which should

be grown without disbudding. The supply for December should be got from L. Canning, a pure white sort, while Etoile de Lyon, grown in bush form, will give a number of rosy-white blossoms at this time; Golden Dart, golden-yellow, dwarf branching habit, and Royal Windsor, creamy-yellow, shaded orange in centre, a very lovely sort. If a larger selection was asked for we could give you a much better list.

Chrysanthemums—which buds to retain (*A. E. G.*).—You could not very well do better than treat your selection as follows: Lord Brooke, Mrs. T. Denne, Mrs. Libbie Allen, Globe d'Or, and Florence Davis, on first crown-buds; Phœbus, Hairy Wonder, Mrs. Dr. Ward, Mons. G. Montigny, Etoile de Lyon, and White Louis Boehmer, on second crown-buds; while Baron Hirsch should be stopped first week in April and second buds retained. The other variety on your list we do not know.

Chrysanthemum Rose Wynne (*Constant Reader*).—The bloom you sent to us is very pretty, but we cannot advise you to grow it as a new variety. You have probably taken the same kinds of buds each season, thus accounting for similarity in colouring. If buds of this variety are retained too early in the season they invariably come white in the resulting flower. Grow your variety on to a later bud, and then the flowers will probably be a delicate blush.

Chrysanthemums—dark sorts for October, November, and December cutting (*Geordy*).—Gloire de Mezin, a deep orange-red, fine habit; Roi des Précocés, rich crimson, very free and compact, should not be disbudded; Ruby King, ruby-red, dwarf and free flowering; and William Holmes, rich crimson, with golden reverse; vigorous grower and dwarf. The foregoing will make a rich display in October. November should be followed with William Seward, deep crimson, an invaluable flower of its colour; Edouard Audiguier, rich purple-amaranth, very vigorous-growing sort; Mrs. William Walters, rich crimson-amaranth, sport from the last-named, and of similar habit; and Matthew Hodgson, light reddish-crimson, capital habit. In December the list gets rather limited, but Nyanza is a splendid rich crimson and a good late sort. Pride of Madford, rich amaranth, and, on terminal buds, a useful December flower; Golden Gem, really a crimson-bronze, and in fine form late in December, and even later; and Elmer D. Smith, a rich cardinal-red, and of good service late in the year. We should not advise you to pinch back any late sorts after the third week in July, and then in most cases you should get a bright display in December.

GARDEN WORK*

Conservatory.

Swainsonia galegifolia alba and S. g. splendens are two charming greenhouse plants for training in a light position. The Pea-shaped blossoms are nice for cutting. Where there are no specimen Camellias, good-sized bushes of Luculia gratissima will be in flower now and do much to brighten up the house. To grow this really well it should be planted out in a good border of peat and loam. After flowering, prune rather hard back. The Indian Daphnes are often unsatisfactory when grown in pots, but planted in a well-drained bed of loam and peat, with a little sand and crushed charcoal to keep it open, they do well, as they run less risk of being over-watered. These Indian Daphnes are very sweet, and it is rare to meet with them doing well in pots, as there are so few growers of hard-wooded plants nowadays, and these plants will not stand the rough treatment often given to soft-wooded plants. Cyclamens, Cinerarias, and other plants coming into flower may have weak stimulants twice a week for a time. All Lilies should be potted now. L. longiflorum eximium is among the most useful, but the bulbs of both these and Harrisi appear to be scarce this season. These Bermuda bulbs seem to have failed more or less, and those now in hand come from Japan, and are scarcely equal to the stock from Bermuda last year. Cleanliness is next to godliness, and every day, when the weather is too bad for outdoor work, wash the pots and sponge the leaves of the plants. Dust settles on the glossy leaves of Camellias and other plants and stops all the pores and checks the growth, and at this season plants are taken into the rooms in larger numbers, and are consequently exposed to more vicissitudes of temperature and atmosphere. And cleanliness is essential to their recovery; besides, no one would tolerate a dirty plant or pot in the room. Tree Carnations are most valuable now for cutting. Two-year-old plants will throw a lot of flowers. The flowers on yearling plants are fine, but they are few in number. A temperature of 50 degs. at night will suit all the plants required for the conservatory, and if cold weather sets in let it drop to 45 degs. When the apparatus is forced and the pipes get very hot the extra heat does more harm than good. Keep out cold winds, but when suitable give air.

Stove.

Euphorbias and Poinsettias are very bright just now. From E. jacquiniæflora long wreaths of bright-coloured flowers may be cut. All that is required is free growth, ripened in a light position. Where there is a demand for bright flowers for cutting, plant this Euphorbia out against a wall of a Melon-house or small forcing-house. I have had a 12-feet wall covered with it; a blaze of colour in winter. The Banana (Musa Cavendishi) forms a striking centre-piece for a large stove. Strong suckers will fruit in twelve months; all that they want is good soil and a stove temperature. I fruited the Banana a good many years ago before the fruit became an article of commerce, and it is one of the easiest plants to grow in a warm-house. It could not, of course, be grown in a small, low house. Ficus repens is a pleasing, neat plant for covering a wall, on which flowering things do not thrive from want of light. The golden-leaved Ficus elastica has not become so popular as it appeared likely when first introduced. It requires a higher temperature than the type to keep it in good colour, and when the gold loses its brightness its effectiveness is gone. How beautiful the scarlet Passion-flower (princeps) is now, and that other old climbing plant, Ipomœa Horsfalliæ, opens fresh flowers every morning to replace those which close. For brightness of leaf and blossom stove plants are unequalled at this season. Night temperature, 60 degs. to 65 degs., with little ventilation on bright days. Enough air comes in through the laps on dull days to give the necessary change. Regulate the moisture in the atmosphere according to the temperature.

Ferns Under Glass.

Where a collection of Ferns are grown, have a division across the house, and keep one part 10 degs. or 15 degs. hotter than the other. A good many specimens and varieties may be grown in a temperature of 50 degs., but the tropical Ferns require more heat, and among these are some of the most beautiful, Adiantum Farleyense, A. concinnum latum, A. Williamsi, to name only a few; and the Gymnogrammas, Davallias, and Nephrolepis require heat to make them really effective. A Fern-house, naturally arranged with rockery and waterfall, with a basin for aquatics, tastefully arranged and planted, may be very effective; but nowadays plants in large numbers are required for the rooms, and for this purpose must be grown in pots. Of course, very rare or choice Ferns are not usually used for decorating draughty passages or rooms, when there are plenty of the hardier kinds of Pterises, Adiantums, and which are easily grown either from spores or division. Most of the Pterises, Gymnogrammas, and a good many Adiantums and others produce spores freely.

Orchard House.

As soon as the bulk of the Chrysanthemums are over the Peaches and other trees in pots should be taken inside. A few degrees of frost will not hurt Peaches when the wood is well ripened, but a tree in a pot in not quite so hardy as when planted out. At any rate, the trees are better placed aside early in January, and before the buds begin to move much the pruning and washing should be done. The repotting, if any were required, would be done in autumn. The orchard-house system is not generally connected with early forcing, but where the house is large it is better to have a division across the centre, and one part warmer than the other. Peaches and Nectarines established in pots force well, and by a proper selection of varieties very hard forcing is not necessary to obtain early fruit.

Window Gardening.

Keep Cactuses dry till the middle of February or later if the weather is cold. Some day there will be a run upon this interesting class of plants again. I miss also the Myrtle and the old Oak-leaved "Geranium" from cottage windows. These must be had back again. Be careful in watering. Bedding "Geraniums" in the spare room should be kept dry for a month.

Outdoor Garden.

Get all wall-shrubs trained. When this work is neglected the wind makes sad havoc among the climbers and creepers. The Laurustinus, when thinned and neatly trained, makes a beautiful wall-shrub for walls up to 10 feet in height. The Silver and Golden-leaved Euonymuses might be used more than they are for clothing naked walls of moderate height, where the aspect is not suitable for Roses and other flowering plants. Very bright just now in many suburban gardens is the Pyracantha. In country places the birds soon take the berries; but near towns there are few birds, and the berries hang longer. I am often surprised at the general absence of Hollies from many gardens. If the ground is well prepared the Holly will grow anywhere, and, though I do not say it will grow in smoky towns like Sheffield, it grows freely enough and looks healthy where the smoke is less dense. Many failures may be traced to careless preparation of the site and neglect afterwards. There are many beautiful varieties of Ivy which ought to be more used, not only to cover naked buildings and fences, but trained as pyramids and as bushes about the garden. The Tree Ivies are very effective when in flower and berry. The frost keeps off, and, at the time of writing, "Geraniums" may still be seen in window-boxes and garden borders; but they have a weather-beaten appearance, and lack the freshness of a group of Christmas Roses, just opening their blossoms, and a clump of the Golden Amaryllis in a sheltered nook on the rockery. I suppose no one has too many of these two plants.

Fruit Garden.

It is customary to leave the pruning of Peaches and Nectarines to the last, and the flower buds are frequently very prominent before the pruning is finished. There may be some slight advantage in leaving the trees untrained and away from the warm wall as long as it is safe to do so, but there is nothing gained by delaying the pruning. It is necessary in shortening back Peaches and Nectarines to cut to a wood-bud to secure a leader; but this can be done by cutting back to triplets, as there is always a wood-bud in the centre of the group of flower-buds. It has never been perfectly convincing to me that there was a decided advantage in retarding Peach or other blossoms in spring. I have seen efforts made to carry this out, but failed to see where the advantage came in. Of course, protection is necessary when the trees are in blossom, but a double thickness of fishing-nets will afford protection enough to secure a crop of fruit. It is, perhaps, premature yet to hazard an opinion as to next year's crop. All we can say at present is that the buds are plump and have the appearance of being fertile. It will, at any rate, be an advantage to get the pruning and training done as soon as possible, as after Christmas the weather may be cold and frosty, and I do not care to be pruning trees in frosty weather. In training trees on walls or espaliers do not tie them too tight. Leave room to grow. If not already done, young plantations of Strawberries should be mulched with something. It need not necessarily be very rich manure.

Vegetable Garden.

Prepare ground now for special crops, such as Asparagus, Onions, Early Potatoes, and long roots, such as Carrots and Parsnips. Of course, where land is kept closely under crop this cannot always be done. Where the manure supply is ample and the culture deep and thorough, rest is not often necessary. Many good cultivators generally manage to trench the land over deeply every four years, and, of course, some period of rest or fallow must then be allowed, and advantage is taken of that resting time to give an extra dose of manure, and by manure I mean all kinds of compost suitable for the land. Lime in certain cases may be as valuable as manure, and the same may be said of soot and salt. I have always seen the advantage in close and continuous cropping to give a dressing of something of a manurial character for every crop. Continue to make hot-beds to keep up regular supplies of Asparagus. Those who have no Mushroom-house may grow Mushrooms on a gentle hot-bed, covered with a frame and shutters. The spawn runs best in a temperature of 80 degs. or 90 degs., and a bed of leaves and stable-manure 3 feet high will make a good foundation for a Mushroom-bed, and the prepared droppings need not be more than 6 inches deep where there is a steady warmth below. Do not stint the spawn, and make the manure firm. E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 20th.—Put in cuttings of new Zonal and Ivy "Geraniums." Potted off seedling Grevilleas and Dracænas. Put in cuttings of White and Yellow Marguerites. Potted Roses from open ground for late flowering. This really might have been done before, as the roots of the plants which were moved in November are making new growth. Filled a frame from which Asparagus had been taken with small plants of Tom Thumb Cabbage Lettuces. Made alterations in shrubberies. Cut out and thinned.

December 21st.—Still further making changes in shrubberies, opening out and giving more room to the good things, and clearing away the nurses and common things. This has given an opportunity for introducing a few rare or new trees and shrubs. Fixed new scrapers where getting worn in kitchen garden. If the walks are to be kept tidy, there must be scrapers where men have to go on the land for vegetables in all weathers. Trenching vacant land and pruning and training fruit-trees always finds us work at this season.

December 22nd.—Pruned Honeysuckles and other climbers on walls. Cut down some weakly Clematis to strengthen base. Made a rough plan of kitchen garden, showing how garden is to be planted during coming season. Stirred the soil among beds of spring-flowering plants. Only those who practise this know the value of it. Put in cuttings of Chrysanthemums. Moved more forcing plants to warm-house. Started Early Potatoes for planting in frames. Made up beds for Horn Carrots and Radishes.

December 23rd.—Placed a lot of Lily of the Valley in heat to start. They start better after being exposed to a low temperature; hence, ours are always laid in outside, with crowns exposed for a time. Took up a lot of Snow's Winter Broccoli just forming hearts and planted in cold-house. Put Chicory-roots in Mushroom-house. Gave Mushroom-beds warm liquid-manure. When a certain stage has been reached in bearing, water is generally given once a week, though sometimes it is only a sprinkle. Judgment is required in watering at this season.

December 24th.—Rearranged conservatory to make it as bright as possible for Christmas. Plants are also required for the rooms. Palms, Ferns, and other foliage plants are largely used, and we have also a good stock of late Chrysanthemums, including Pelican (white) and W. H. Lincoln (yellow). Swept walks. Rolled lawns; are usually attended to every week. This brightens up things, and gives neatness and polish. Sowed Mustard and Cress and Radishes in warm-frames.

Carnation Wm. Scott is a fairly good grower among the winter-flowering kinds. There is, however, little either of beauty or refinement in the rose-magenta of its flowers or its coarse, saw-edged petals. The variety is, however, of good perpetual habit, and under artificial light the colour tones down considerably. The same shade occurs, however, frequently among the Marguerite kinds, which comes so very freely from seed that it will never be classed among choice kinds on this side of the Atlantic. The variety is of American origin.

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CHRISTMAS ROSES (HELLEBORES).

The planting of these should always be done prior to the pushing forth of new foliage. I am, however, aware that in some gardens where special attention is accorded these plants they are successfully planted in the spring months as well as at other seasons. In all ordinary instances and where no especial home is provided for Christmas Roses it is by far the best plan, where they cannot be planted in early autumn, to do it as soon as flowering is completed. This will give them an opportunity of becoming well established before the parching winds of March and April arrive. Christmas Roses—that is, all the varieties of Helleborus niger—are best broken up into rather smaller pieces. Particularly is this the case where the plants have been allowed to remain long in one position. Very large plants with probably 100 or more flowers springing from each are exceedingly handsome-looking subjects in the herbaceous border, or indeed in any position where such may perchance exist, but it does not follow that the finest flowers are always produced by these very large examples. On the other hand, I have found that the best flowers are produced on two-year or three-year-old plants, counting from the time of planting and assuming that the plants have been broken up into pieces of not more than two or three crowns each at the most. Divisions of this size are quite large enough for transplanting, so that those possessing large specimens that have not been broken up for years could soon increase their stock of this invaluable winter flower. To those possessing such plants I would suggest that a portion be broken up or divided every year, as by so doing a continued supply of flowers may still be forthcoming as before. Where, however, the dividing and transplanting are deferred till the flowering is complete the supply of bloom will not be interfered with.

A jarful of Christmas Roses.

One thing is especially disastrous in transplanting Christmas Roses, and this is attempting to transplant very large clumps—that is, clumps of 2 feet or so in diameter. Though nearly twenty years have elapsed, I still remember an attempt to transplant some grand examples of these Hellebores in the lump as lifted, and though every precaution was taken and their new quarters ready prior to the specimens being lifted, it was all to no purpose. As a result, the attempt was an absolute failure and a lesson never forgotten. Every vestige of their grand foliage was lost leaf by leaf, and when in the early autumn of the following year I lifted them again to see if anything could be done, there was hardly a living root to be found in that huge mass, all of which was in the most perfect health when transplanted early in the previous autumn. The only remedy for plants thus reduced is to wash every particle of soil from them and remove the dead roots, afterwards dividing them into small pieces of a couple of crowns each and planting them in good soil in nursery beds. Prior to planting, allow the plants to become quite dry from the washing by laying them out in an open shed, and when planting freely dust them in the trench with fine charcoal. It will also be well to plant somewhat deeper than usual, so that the new roots which shall presently issue from the base of the crown shall have the advantage of additional protection. This is the more needful because the old decayed roots will be of very little service in restoring the plant to health, and for which it must depend on entirely new roots. This to some may seem a good deal of trouble to go to, but if the variety be a good one—as it was in the case of that I nearly lost—it will be well repaid, as in two or three years these divisions will have made nice flowering plants, and in much less time, of course, where the plants have not been subjected to a course of wrong treatment. It is at this season of the year that many who possess a stock of flowering plants of these favourite Christmas Roses are tempted to lift and pot a portion of them for blooming under glass, and for purposes of decoration, either in a cut state or in pots, few plants can equal, much less surpass, them. None are hardier or more enduring, and none more free flowering or continuous. But where the plants are few in number and valued accordingly, the protection of a handlight will keep the flowers clean and pure, while no probable danger hangs overhead. All plants lifted and potted for flowering under glass will, if at all large, be best broken up into small pieces when flowering is over and replanted in good rich soil.

The position this section of Hellebores appears to prefer is one sheltered from cutting winds and also protected from hot sun. Distant shade is preferable to that provided by a wall, for example. An abundant depth of soil where the roots may be constantly cool is, however, the chief point. Given this, you may plant your Christmas Roses in a greater variety of positions with success than in those instances where depth of good soil is wanting. It is nothing unusual for their roots to descend to 2½ feet or 3 feet in the earth where the soil will permit, and it is more than probable that their roots will go down far deeper if an opportunity be afforded them. I mention this that amateurs who would desire to make a special feature of a few plants should in the first instance provide a fitting and a permanent home for these very desirable garden flowers. There are some excellent varieties in commerce at the present time, and a good one, if costing a little more primarily, will not require any more room than an inferior variety, while the satisfaction and pleasure obtainable by planting the best kinds will increase year by year, as will also the plants and the quantity of flowers. J.

ROSES.

A border of Roses. — I have just formed a border, about 5 feet wide, against a south wall, and about 30 feet long. I am desirous of planting masses of strong-growing Rose-trees of the best kinds that will practically give me blossoms all the summer. Will you kindly give me a list of what you recommend? The soil is sandy, but I have had it well manured. I may say that H. P.'s do not seem to do well with me. Is it possible to purchase own-root plants, and where?—Jay Ess.

*** Teas would undoubtedly be better for your purpose than Hybrid Perpetuals, and would also do well in your lighter soil. It is just the compost for own-root Roses. Select from the following: Marie Van Houtte (yellow), G. Nabonnand (salmon), Safrano (apricot), Madame Lambard (red and salmon), Papa Gontier (pink), and Souvenir de S. A. Prince (white). The following H. Teas are also most suitable: Viscountess Folkestone, Augustine Guinoisseau, Camœns, Clara Watson, Mrs. W. C. Whitney, and Marquis of Salisbury. Most of our trade Rose-growers can supply these upon their own roots; but if upon the Brier-stock they will do well, and soon go off upon their own roots if planted 2 inches deeper than the collar where Rose and stock unite.

Moving Roses.—Having to go to Jersey early in March I want to take with me two Moss Rose-bushes. Is it better to put them in a pot now, or leave them in the ground till the last moment, and move the roots in Moss and straw? Do they want any pruning, and what is the best time for it?—A Constant French Reader.

*** You would do better to leave the plants intact and in the ground until your departure. Then lift very carefully and prune rather hard. You may just as well prune when lifting, and so save labour and room in packing. Give them a rich soil; few Roses pay for high cultivation more than the Mosses.

Rose Marechal Niel in pot.—I have got a Maréchal Niel Rose, planted in 10-inch pot in greenhouse heated by oil-stove. It has three growths 13 feet long, the current year's growth, and was budded and grown in greenhouse in 5-inch pot. What pruning does it require? I have got a greenhouse which I can heat 55 degs. to 65 degs. When should I move the plant into the warm-house?—Sultani.

*** Do not prune away any of the ripened wood from your plant. You have grown it well to get three shoots of 13 feet length. Shift into a small tub or box of rich loamy compost. Your pot will scarcely support so much growth and bloom as you ought to get from such a good plant, but do not disturb the roots more than can be helped. Start the plant end of next month.

Planting Marechal Niel Rose outdoors (*South Devon Amateur*).—In such a warm position, and when moved early, there is no reason why your Maréchal Niel should not bloom outside; but you will not get many flowers the first season. We presume it is against a wall or fence.

THE KITCHEN GARDEN.

SPROUTING EARLY POTATOES.

The time is very near at hand when those who wish for early frame Potatoes, say at the end of March or early in April, must prepare the sets by introducing them into a little warmth and moisture. A house in which the temperature ranges from 45 degs. to 50 degs. at night to 60 degs. by day is suitable for the first lot that are to be planted in frames, say about the first week in January. I have now abandoned the old-fashioned way of placing leaf-mould or fine soil in the bottom of the box in which the sets are raised, as I found that unless planting was performed in the nick of time the young rootlets got interwoven, rendering it impossible to separate them without injury. I now simply place them end up in the box, giving them a slight sprinkling with the syringe occasionally on fine days, avoiding saturation, which is likely to cause rot. As soon as growth is sufficiently advanced to remove I rub off all sprouts except the two stoutest, as one of the worst evils in connection with frame culture is too much leafage, by which sun and air are excluded. In about a fortnight's time it will be advisable to place those sets that are intended for successional frame crops, to be planted at the end of January and beginning of February, in boxes in quite a cool greenhouse to sprout gently. If left till the last and then hurried on in much heat the produce is invariably poor. Potatoes for very early work are often placed in autumn in some out-of-the-way corner and not again inspected till wanted for starting into growth, when it is found that a blanched growth has been going on for some time, the tubers, of course, being much weakened. The best plan is to store in a cool place thinly and to examine them at short intervals, removing the growths immediately they appear. There is not much gained by previously sprouting tubers intended for pot work, the best way being to plant them at once in the pots, keeping the soil on the dry side until growth appears. J. C.

Chou du Burghley.—This is a most excellent vegetable at this season of the year, it being when cooked of delicate colour and rich flavour. It is, moreover, quite hardy, resisting ordinary frost well. The great mistake often made in its culture is sowing the seed too soon in spring; consequently the heads get too forward, and a spell of wet followed by frost rots the centre. The best dates for sowing are the end of spring and the third week in June, satisfactory results being then certain from one or other of the sowings, as if the season is such that growth is rapid and the heads from the first sowing are too forward, the latter-sown batch turns in just at the right time—namely, Christmas, when Cabbages are scarce. When cooked, in general appearance and flavour it is much like that little-grown but really excellent vegetable, Couve Tronchuda.

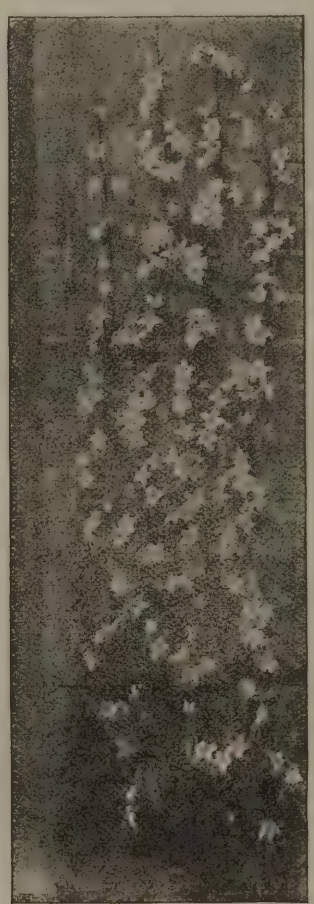
Cutting forced Asparagus.—It often happens that one is obliged to cut forced Asparagus in small quantities, and the usual plan to preserve it is to place the lower part in a pan of water and keep on adding to that which has been cut. Many will have noticed that when treated in this way the heads double over and do not keep erect, but twist about. If any attempt is made to straighten the heads they break off short. A much better way of keeping the growths fresh is to lay damp Moss or any moisture-holding material in a close box, placing the growths flat on this and keeping cool. The Grass may be kept good for ten days or a fortnight and the flavour is retained, which is not the case when the heads are immersed in water. The same treatment may be given to Asparagus from beds in the late spring and early summer months. The chief point is to put it in a close place and keep it quite dark. I have, from want of a better plan, buried it in Moss in hot weather under a north wall, and kept it a long time in this way.—B.

French Beans in winter.—No matter how good the culture, French Beans are anything but a profitable crop, as in my experience I have never found a midwinter crop worth the attention given it. These remarks need not deter anyone from sowing early in the new year, as with longer days, when the plants are in bloom, a fair return may be expected. For a first crop, I find much better results are secured by sowing in 6-inch pots, not following the usual advice of half-filling the pots and moulding up afterwards. I have seen many winter Beans decay at the part newly soiled, and do not advise it; in fact, I never top-dress forced Beans, as their season is so short. By feeding freely the plants get the food necessary, and in heavy loam such aids as old mortar rubble sifted fine, or wood ashes with a dash of bone-meal, will encourage quick root action and form sturdy plants. I have often noticed how well large growers cultivate French Beans, the plants being rarely top-dressed and having but a small root space.—G.

OUTDOOR PLANTS.

THE PYRAMIDAL BELLFLOWER.

I have kept the post-office for the last 37 years at Newton Harcourt, and my hobby is the culture of flowers. The photograph of Campanula pyramidalis which I have sent you was of a plant in full bloom in June, and flowered until the late autumn. The most remarkable feature is, that it grew from a seed which was blown into the joint of the brickwork. The plant beautified the space between my two doors, and grew to the height of 5 feet. It was full of flower from the top to the bottom, and was greatly admired. Edwin Freestone.



The Chimney Bellflower (Campanula pyramidalis), from a chance seed. From a photograph by Mr. E. Freestone, Newton Harcourt.

THE GREATER BINDWEEDS, OR HEDGE BINES.

There are not a few of the attractive plants grown in our gardens that require to be used or planted with extreme caution in order to avoid future trouble, and amongst these beautiful robbers or usurpers we must place the great Hungarian Bindweed and the rosy-pink form of our own native Calystegia Sepium. Both are far too insidious and grasping ever to be used on good borders or in beds amongst shrubs or herbaceous plants, for if once they stitch their white, thong-like roots into clumps of other things it is next to an impossibility ever to get them out again, and meanwhile they smother up everything during their season of growth. They are beautiful in growth and in blossom, and places appropriate may readily be found for them in which while growing rampant they can do no harm. We may, for example, safely and satisfactorily plant them beside woodland walks or in copses in positions where they can twine and dangle from Hazel, Birch, or sapling trees of various kinds. Even in winter their dead bine and warm brown leaves give colour to the landscape and form an additional cover for game and birds of all kinds; or they may be planted here and there in Thorn or Quick-set hedges at points where their beauty may be seen from footpaths or roads, while I know of nothing better for quickly growing up and hiding ugly iron palisades or railings. I once saw a cottager's pigstye made beautiful by the great white Bindweed, common Hop Vines, and the great French soup Gourd, which, planted in the little garden behind, had scrambled on to the red-tiled roof, which it completely covered with its great red fruits and succulent green leaves.

Not unfrequently there are isolated shrubs on grassy lawns that do not themselves flower or are of no great importance, and these may often be covered with either one or other, or both, of these Calystegias. As thus used in places where they are easily kept within reasonable bounds by the scythe or lawn mower they are not at all dangerous, and at the same time are very beautiful from July until they are killed off by the frosts of October and November. One of the most effective combinations I ever saw was made by planting the great Polygonum sachalinense and roots of these Bindweeds in well-enriched earth in a large hole made on a grassy lawn in a half-shaded place The Polygonum threw up its great shoots to a height of fully 16 feet, arching gracefully outwards over the closely-mown Grass. Over these great leafy wands the Calystegias clambered and entwined themselves, and when their great flowers expanded the whole group was very much admired. I have also seen these Bell Binds, as they are sometimes called, grow very prettily over the arching shoots of Willows and Bamboos in half-wild places where they did no harm. But there are many other ways and many more suitable places in which to plant these flowers, which, rampant though they be, are far more ornamental in more or less out-of-the-way or derelict corners than are their usual weedy occupants. The white-flowered Calystegia sylvatica in deep rich soil will grow fully 30 feet in a single season. C. sylvatica is a native of South Europe and the Caucasus and North Africa, and, except in size, differs but slightly from our native species. C. Sepium var. incarnata, a rosy-pink form, is generally supposed to be N. American, but is naturalised in at least one or two places in Ireland.

W.

A FEW OF THE BEST DWARF CAMPANULAS.

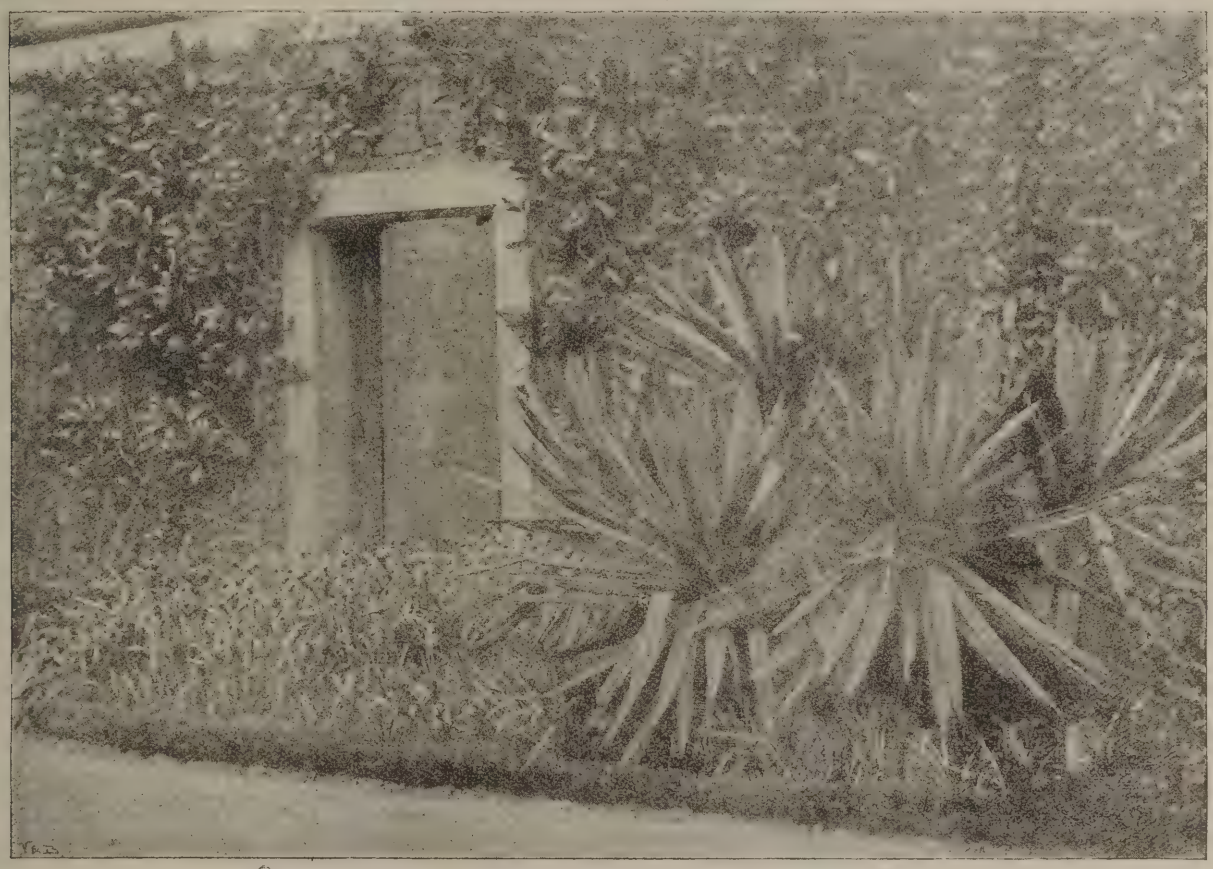
As border plants, for the rock garden, or upon sloping banks, and to cover the ground around Andromedas, Ghent and mollis Azaleas, and similar subjects, we have none of more use than the dwarf-growing Bellflowers. They are very accommodating in their requirements. The pretty pale blue of C. pumila and its white form, C. p. alba, may be had in perfect masses or carpets during summer and autumn. They are quite hardy, and very seldom fail. There are deep and light blues, but the white form is simply superb. If a few of the outside runners are taken off late in the autumn and rooted into small pots, they may be planted as an edging to form masses or carpets beneath such subjects as standard Roses, and will be one of the most permanent plants we could have for the purpose. All of the forms of C. pumila (syn. with C. pusilla) are grand upon rough old stone walls and ruins, also the hardy rockery.

C. alpina is very pretty upon the rockery or in pots. This variety needs more drainage than most. The many pretty forms of C. carpatica prefer a moist, although gritty or sandy, compost, and are not quite so well suited for the rockery. Here also we have whites and various shades of blue. One of the prettiest little Harebells is found in C. cæspitosa, commonly called

the Tufted Bellflower. Upon the cool or shady side of an old wall or rockery this will thrive in any crevice. It is also good for edgings in cool, moist soil. One of the very best is C. pulla (the Austrian Bellflower), about 4 inches high. When planted in a partially shaded position, and a little care taken to afford some good potting compost, unless the natural soil is favourable, we have few more lasting or prettier deep purple Harebells than C. pulla. A few other good varieties are C. abietina, a hybrid between C. pulla and C. turbinata, named G. F. Wilson, C. haylodgensis, and C. isophylla alba. As a rule the Campanulas enjoy a rich and moist soil, containing enough grit to ensure against stagnation, and the above compact varieties are by no means so generally cultivated as they deserve. Plant early in autumn or early in spring and water well immediately afterwards. P. U.

DAFFODILS ON A BORDER.

A CHARMING way to grow Daffodils in variety is as suggested in the accompanying illustration.



Yuccas on Daffodil border.

This border is filled with Yucca gloriosa and Daffodils, which make a charming association of colour, while the Magnolia in the background adds to the beauty of the picture. It is by thus grouping various plants together that bold effects are gained.

THE JAPAN WINDFLOWER (ANEMONE JAPONICA) AND ITS VARIETIES.

So much has been written during the last few years about the white and coloured varieties of the Japan Anemone, and their value as garden plants is so fully recognised, that it is unnecessary to direct attention to their merits. Their only fault was, that, by reason of their persistently refusing to produce seeds, they gave the hybridiser no opportunity of exercising his skill upon them. During the past fifteen years I have had many hundreds of the white and coloured forms bloom, and never in a single instance have I seen the slightest indication of seed forming. What could have induced one single bloom to form and perfect seeds after such a long period of absolute sterility it is impossible to say, but the long spell of barrenness was at length broken, and the varieties named Lady and Lord Ardilaun were the immediate result. With respect to the former, I am obliged to come to the conclusion that it is not a plant for every garden, and I much doubt if it will ever become really popular. It evidently possesses an element of weakness, which in some soils is so pronounced as to render it practically valueless. With me it is affected much in the same way as the Old White Lily is so frequently affected.

This is the more striking, as the older kinds flourish exceedingly with me, and the newer one, Whirlwind, growing within a few yards of Lady Ardilaun, has been remarkable for its healthy appearance. There can be no doubt that Lady Ardilaun is much inferior to its parent in stamina, although probably this element of weakness will not be so apparent in soils that may happen to be very favourable to hardy flowers generally. Of the variety called Lord Ardilaun I have a very different opinion, and I cannot understand why this was not selected for special distribution in preference to its companion. The flowers are as double, as large and pure as those of Lady Ardilaun; it is with me even more free flowering and is apparently as vigorous as the old white form. It is evidently a fine thing, and will, I think, take a front place among late-blooming hardy flowers. Whirlwind, which came to us from America, does not seem to have become popular, and I must admit that at first I thought it worthless. Grown in rich soil it makes very large leaves of a rich deep green, and the individual flowers are, I think, at least, disfigured by the enlargement of the calyx, which projects beyond the corolla and is like a miniature leaf. It flowers, too, somewhat later than the type. I thought of discarding it, but have this season had occasion to considerably modify this adverse opinion as to its merits. My plants have passed this summer in very poor soil, and although the flower stems did not attain to more than half the height of that of previous years, the flowers are very pure instead of having a greenish tinge, as was the case when growth was strong, and the calyx is of normal proportions. The flowers are certainly not so good in form as those of the type, being composed of from twenty to thirty strap-shaped petals arranged in two rows, with rudimentary petals here and there round the centre. As affording variety, Whirlwind may well be grown, and those who have been disappointed with it might try it in poor soil, and where the plants get abundance of sun and air so as to discourage a gross growth.

There can be no doubt that in course of time we shall get a race of varieties of this fine autumn flower exhibiting considerable variation in colour, as double as the Rose, and probably the hybridiser will be able to infuse increased brilliancy and depth of colour. I am sanguine on this point, for it may be noted that in the flowers of the old coloured kind we may at times discover a purplish tinge, and it is quite possible that this in time may become more accentuated and give birth to colours similar to those which exist amongst the varieties of A. coronaria. It is not unreasonable to expect such a future for the Japan Anemone, seeing what has been done with such things as the Pyrethrum, Phlox, and Chrysanthemum. It is safe to assume that in time we shall obtain varieties with flowers much larger than those now in cultivation. One of M. Lemoine's seedlings has flowers double the size of those of the type, and if this improvement can be made in the course of two or three years, what may we expect in the course of a decade? Coupe d'Argent, distributed by M. Lemoine recently, is a decided advance towards the perfect doubling of A. japonica. The individual blooms are composed of about forty petals, arranged in three, and sometimes four, rows, and when fully expanded are pure white, though the latest flowers are faintly tinged with pink. The habit of growth is vigorous, though somewhat distinct from that of the parent form. Several varieties were distributed a year or two ago by M. Lemoine, but not having seen them in bloom I can say nothing as to their value. J.

Nerine Manselli.—Attention has recently been directed to more than one of the interesting and beautiful members of this race of nearly

hardy bulbous plants, and this will add yet one more to the latter section of them. The plant is of dwarf and sturdy habit, and very free flowering when good-sized bulbs are secured. The coral-pink of the expanding flowers is very charming, and eventually deepens to a warm rose-pink hue. Being a late-flowering plant, it is valuable for the succession it gives, and where such things are grown the above should not be omitted. This fine hybrid has N. flexuosa and curvifolia for its parents.

UNDERPLANTING PÆONIES.

THERE was a short article in GARDENING, November 20th, headed "Simple flower-beds," in which the theory is excellent, but perfectly unpracticable. In it the advice is given to underplant late-flowering Pæonies (commonly called French ones, the writer says, but I have never heard them so called). Anyway, they are not French ones, but Chinese (the double ones), and Japanese (the single ones), and the earlier-flowering ones are European.

The underplanting advised is Narcissus princeps or Sir Watkin planted between them, and then the old surface of the border is to be planted with Sedum glaucum or Antennaria tomentosa. The Narcissus will be very successful thus planted, but the writer says that the red stems and leaves of these late-flowering Pæonies would intermix with the bright yellow flowers of princeps or Sir Watkin Daffodils, and these do not. I have them so planted in a large bed of my own, and the Pæony foliage does not show colour when these two Narcissi are in bloom. They are both early-flowering ones. I think one of the Incomparable section of Narcissi, such as Barri conspicuus, might be in flower when the Pæonies were showing stems and leaves, and that the flower-stems and leaves would not too greatly overtop them at the later season when these Narcissi are in flower; if so, the effect would, of course, be pretty. But I am not quite sure about this. I will notice next spring.

Then, again, it is advised to plant the Pæonies 3 feet apart—a good distance. But Pæonies are very heavy in their foliage during the summer, and no carpet which is under them would thrive saving at the very edges of the bed. Bulbs do not seem to mind being thus covered, but foliage plants certainly must have some light, and under Pæonies, 3 feet plant from plant, they would get none. Besides, even if they lived they would be quite hidden from sight, for the Pæonies must certainly not be cut down until late autumn.

Another thing the writer seems to have overlooked is that the leaves of the Narcissi are very long, and that to cut down would ruin the bulbs. They would smother any permanent carpet under them.

One can bed out with a carpet of Forget-me-nots, Daisies, Arabis, and other such plants, under Tulips, Hyacinths, and most spring-bedding bulbs; but one cannot make a permanent bed of Narcissus, planted fairly thickly, with a carpet or anything under it, excepting of such bulbs as Snowdrops or Aconites, which flower before the Narcissus-leaves are much above the surface of the soil. I have had large beds of hardy plants underplanted with Narcissus and Crocuses. The Crocuses look well for a short time, but are smothered by the Narcissus-leaves before their flowering-season is nearly over. Scillas flower at the same time as Crocus. So this only leaves Snowdrops and Winter Aconites to go under the early-flowering Narcissi, such as princeps or Sir Watkin.

The later-flowering star-shaped Narcissi would answer well underplanted by Scilla sibirica or bifolia, or by Crocuses.

Underplanting herbaceous beds and borders is a hobby of mine, and I have had many years' personal experience of it. I have discovered just when such and such herbaceous plants are a certain height, and what season certain bulbs succeed others. As experience is generally rather dearly bought, I should like other amateurs to profit by mine and avoid the blunders I have made; and I most certainly advise them not to underplant a Pæony-bed with anything but bulbs, or to imagine anything which is beneath the Pæonies will be seen after they have once become full grown for the summer.

I quite agree with the writer of this article that bedding-out on a large scale is an interesting way of gardening; but there is no reason why bedded-out beds should not be very gay during April, May, July, August, September, and October, and the surface well covered all the winter. They need only be empty one day in June and one day the end of October, when the summer plants are taken out and the spring-flowering ones put into them. I am not advocating bedding-out *versus* massed beds of herbaceous plants: far from it. I greatly prefer the latter, but I like change, and a few bedded-out beds often set off the others, and there is no reason why because a bed is bedded out it should be done badly, and there are scores of pretty ways of getting variety. MRS. JOCELYN.

ORCHIDS.

CATTLEYA LABIATA VERA.

THIS beautiful Cattleya was discovered so long ago as 1818 by Mr. William Swainson, who found it growing upon the Organ Mountains in Brazil. For many years this species was extremely rare in this country, but, thanks to several energetic and persevering Orchid collectors, it has now become so plentiful that plants may be seen in almost every collection. C. labiata vera generally blooms during the months of October and November, at which time Orchid flowers are scarce. It is therefore a useful and valuable species to grow in quantity where cut flowers are required for decorative purposes generally. When the plants are in bloom the atmosphere of the house should be kept rather drier than

The autumn-flowered Cattleya (C. labiata vera). From a photograph by Mr. I. J. Cowie, Sackville-street, Dublin.

usual; by doing this the flowers will remain perfectly fresh for a period of four to five weeks, which is of the greatest importance to those who have to supply choice flowers for cutting purposes. Newly-imported plants on being received will need to be cleaned, dead roots and decayed bulbs cut off, and then placed in pots which will just fit them, and no larger, nearly filling up the pots with crocks, making the plants steady by tying two or three of the pseudo-bulbs to neat sticks. The plants should on no account be excited into growth quickly, but place them in the intermediate-house, and surround them with a moist air, and moisten the crocks by pouring water through them two or three times a week. When growth has fairly commenced some lumps of peat and Sphagnum Moss may be packed firmly around them in the usual manner, and then place them in the rather warmer temperature of the Cattleya-house. If the plants are carefully watered each time the compost becomes dry they will soon become established and make strong flowering bulbs. Healthy plants after flowering may be placed in the lightest position available in the intermediate-house, where with plenty of sunshine to harden the newly made growths they will pass safely through their long period of rest. During the winter water at the root is only necessary at long intervals of time, sufficient being applied to keep the pseudo-bulbs plump, the object being to induce the free growth of roots, and yet to prevent the young growths from starting before their proper season. The proper time to repot those plants that need a larger pot is when new roots are seen pushing from the base of the current season's growth. When repotting it is well to bear in mind that overpotting is a great evil, and, as a rule, the smaller the pot the better the safeguard against excess of moisture at the root; also not to disturb or injure the old roots more than is absolutely unavoidable. The pots should be filled to three parts of their depth with drainage, which should be covered with a thin layer of Sphagnum, using for the compost good fibrous peat and Moss in equal proportions, and freely mixing with it some thick pieces of broken crocks, which will assist the water to pass rapidly away. For a few weeks after repotting keep the compost on the dry side, but the surroundings should be kept fairly moist by syringing between the pots two or three times a day. When the plants become properly re-established a gradual increase in the water supply at the root will be necessary; but when growth is completed a smaller quantity will be sufficient for them. When the plants are in full growth it is always advisable to avoid as far as possible any water lodging in the young breaks, as they are liable to turn black and decay from this cause, and at all times sponge the bulbs and leaves often enough to keep them free from scale and thrips. W., *B.*

TREATMENT OF CLAYEY SOIL.

THERE are few things connected with gardening that are more difficult to the amateur than the successful management of stiff, clayey soil, and certainly to have it in a thoroughly disintegrated and genial condition at the early spring seed-time is no easy task. Nevertheless, it can be accomplished; and having had during a long gardening career several extensive gardens of this nature under my charge, I will endeavour to explain the method that I have found a perfect success.

As soon as any ground is cleared of its summer crops, let it receive a good dressing of horse-manure, fresh from the stable, with a goodly amount of the short litter left in it, and if any of the following are at command, use them freely with the manure: Leaf-mould, charred vegetable refuse, old mortar refuse, road sweepings, or sandy soil. Take out a trench 2 feet or 3 feet wide, and half the breadth of the plot. Remove the soil one good spade deep, and place in a ridge along the edge of the other half for filling in the last trench, then manure the bottom of the trench, and dig it a good spade deep. This lower spit is easily dug with a four-pronged digging fork. Trench this half two spades deep, mixing in the manure, etc., throughout the whole depth it is dug. Take thin spits, well breaking any lumps at the bottom of the trench, but leave the surface of the work rough and flat, not in ridges. On reaching the far end of the plot take out a like trench to the former, and fill up the open trench, and then proceed to work back the remaining half in the same manner, and on reaching the end the soil that was first taken out will fill up the last trench. This method saves much heavy labour in wheeling soil the whole length of the plot for filling up the trench. It will thus be seen that the soil is dug two spades deep, the lower one being placed entirely below, and the whole depth manured. As the work proceeds a few lumps of fresh lime may be scattered on the surface of the soil. It will soon slacken and mix in with the soil in the spring, and tend to keep the soil open and offensive to slugs and other enemies. Let there be no treading on the ground after it is dug during the winter.

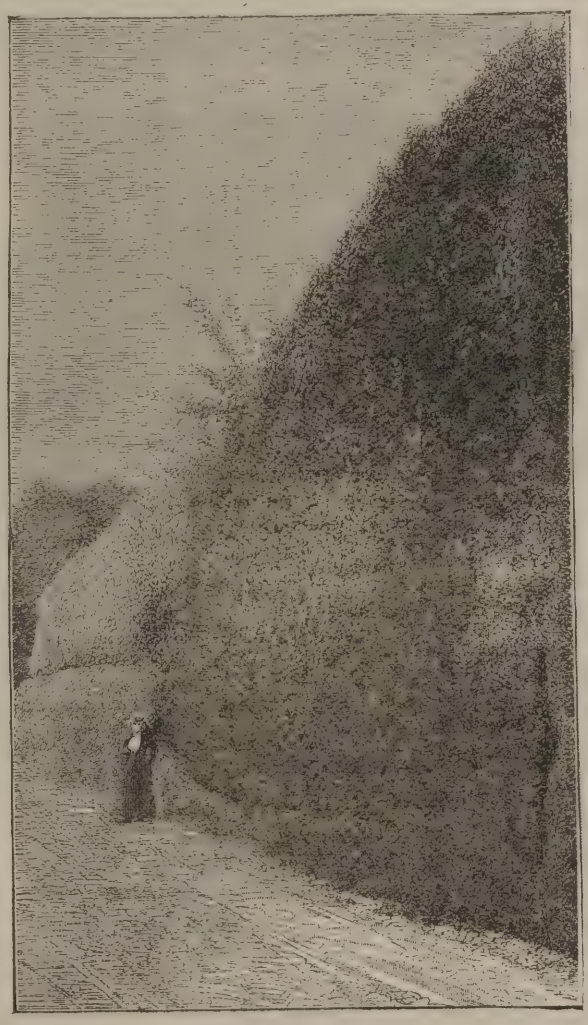
About the end of February or beginning of March choose a fine dry day, and just break the surface of the soil with a fork or hand scarifier, but do not turn the soil over. The object is to keep the soil that has been exposed to the influence of the winter on the surface, then during a fine dry day, if the rake is passed over it, it will be equally as fine and congenial to tender seeds and plants as sandy or gravelly-loam. Soil of this kind should be kept light and open on the surface during summer by frequently using the Dutch hoe; this keeps it open and healthy for the crop, and prevents "caking" and cracking during hot, dry weather. If possible, soil of this nature should not be dug during wet weather. H. ELLIS.

Laportea moroides.—This is the Poison-tree of Queensland, though its handsome masses of Mulberry-like berries are scarcely suggestive of poison. Indeed, the dense clusters of fruits

are distinctly attractive, and being also of large size, would tend in some degree at least to tempt the unwary. The plant is of erect growth, with foliage somewhat akin to Sparmannia, and the clusters of bright red fruits surround the stem at about 15 inches high, other clusters of unripe fruit occurring at intervals on the stem.

HOLLIES.

The Holly in its many forms is the finest evergreen hardy berry-bearing tree in this country. It is always beautiful, and a well-grown specimen, 15 feet or so in height, feathered to the ground, and well cropped with its highly ornamental berries, is a fine acquisition to any garden during the dull winter months. Specimens thus described are occasionally met with, but by no means so often as they might be. Planted singly on the lawn or judiciously placed in the shrubbery border they produce bold, striking effects. The common variety, Ilex Aquifolium, is well known as a hedge plant, for which purpose it is specially adapted. Hollies are useful, and at the same time ornamental in many positions. No situation seems to be too cold or bleak for them, and they succeed well in nearly all soils. A somewhat dry soil is preferable to a wet or boggy one. They are generally grown in two forms—*i.e.*, bushes and standards. The first-named is to be commended as being more ornamental and graceful in outline than the standards. True, the standards have this advantage, that shrubs or plants of dwarfer habit can be planted at the base of them, but generally the bush form is to be preferred. Opinions differ as to which is the best month, or months, in which to plant Hollies. Some prefer early autumn, others spring, but it does not matter very much which month is selected so long as ordinary care is taken in the operation. It is not necessary to coddle them, but if they are lifted with good balls of earth and the fibrous roots left intact there need be no fear of losing them through transplanting. When it is necessary to move Hollies, it is always advisable that the work should be carried out while the atmosphere is charged with moisture. Dry, windy weather should be avoided if possible. It is an easy matter to keep them in good shape by regular pruning—especially if a good foundation has been laid in the early stages. A few remarks about their



Part of Holly-hedge at Bagshot.

Propagation might be useful to readers of Gardening Illustrated, especially as we have lately received several queries on the propagation of this popular evergreen. It can be increased by seeds, cuttings, budding, and grafting. For the present we will describe two of the most generally adopted methods. Propagation

By seed is resorted to in the case of raising large batches of the green-leaved varieties, principally Ilex Aquifolium. The seeds should be collected as soon as ripe, and mixed with about double their bulk of sand or earth, and laid in a heap until the pulp and husks have rotted away. The heap should be turned over monthly. In about fifteen months' time the seeds will be ready for sowing, and they should be separated from the sand and sown in moist and friable soil in slightly raised beds, the seeds being covered with about ½ inch of very fine soil. The seeds germinate irregularly, some taking as long as eighteen months, while others germinate in less than half that time. As the seedlings do not grow very fast in the early stages, they should be allowed to remain in the seed-bed for a couple of years, after which they should be taken up and planted out in nursery-rows.

Cuttings a few inches long of the current year's growth should be taken off in the autumn and inserted in a bed of sandy soil on a sheltered border, and covered with hand-lights. Make a clean cut with a sharp knife below a joint, and remove the lower leaves. The base of the cuttings should be made quite firm, after which a watering overhead with a fine-rose water-pot should be given. It will be necessary to shade them from the sun on hot days. It is an important point in the successful cultivation of Hollies that they should be transplanted every two or three years up to a certain size, by means of which they are encouraged to make a large quantity of fibrous roots, so that if it is at any time found necessary to move large plants from one part of the garden to another, it can be done with greater chances of success than if the plants had not been properly transplanted in the young state. The following list contains a few of the finest varieties.

Green-leaved Hollies.

The green-leaved varieties are indispensable where ornamental hardy trees are cultivated on an extensive or even moderate scale. Amongst them the under-mentioned hold high rank. I. A. Hodginsi is not only distinct, but very handsome. It makes a fine avenue tree, and is of good habit, free growing, and easily managed. I. A. Altaclarensis is a capital variety of noble growth with large ovate deep green leaves. I. A. platyphylla is of even, regular growth, and forms a dense bush, furnished with broad, deep green, prickly leaves. It bears very freely large round red berries. I. A. camelliæfolia is one of the most handsome of the green-leaved varieties. Its leaves are large, broad, shining green, with a few marginal spines. It is a very free berry-bearer. I. A. atrovirens is another excellent free-growing sort with broad, flat, deep green leaves. It is a handsome Holly, but I cannot recommend it as a first-rate berry-bearer. I. A. laurifolia longifolia is of spreading habit, well clothed with large, smooth, deep green leaves. I. A. ferox (Hedgehog Holly) is very distinct, with curled, spiny leaves. I. A. ovata is of medium size and well adapted for growing in small gardens. It is of rather slow growth, with medium-sized deep green ovate leaves. I. A. Hendersoni is a grand variety. Its large, smooth leaves are of a deep Myrtle-green. I. A. balearica, frequently met with under the name of Minorca, is a first-rate grower, with ovate, shining green, flat leaves. It carries a rich profusion of berries.

I. A. Donningtonensis has thick, dark green, spiny leaves. It is a good grower, of close, pyramidal habit. I. opaca is also very distinct, but rarely seen outside large collections of Hollies. Its oval flat leaves are deep green, and furnished with spiny teeth. It is a free berry-bearer. I. A. fructû luteo bears yellow berries.

Variegated varieties.

I. A. Mme. Briot is a useful golden-coloured variety, with large oblong, ovate leaves, mottled with yellowish-green in the centre, and irregularly margined with yellow. It is of good habit and a capital grower. I. A. aurea marginata has large broad leaves, heavily blotched with yellow; very handsome. I. A. aurea marginata ovata is of even, regular growth. Its medium-sized leaves are greenish-grey, with a broad margin of sulphur-yellow. I. A. ferox argentea deserves a place for its distinct and quaint appearance. The leaves are blotched with silver, and the central portion covered with stiff spines. I. A. argentea marginata is an old but excellent free-growing sort. Its large leaves are green, mottled in the centre, and irregularly bordered with silvery-white. I. A. Golden Queen is one of the finest all-round Hollies grown. It is very handsome, and should be included in every collection of choice shrubs. Its large leaves are mottled with grey and light green on a dark ground, and irregularly margined with deep golden-yellow. It is a free grower, and keeps its colour well in all situations. I. A. laurifolia albo marginata is very handsome. Its broad, Laurel-like leaves are broadly margined with white. I. A. sulphurea deserves a place. The central portion of the leaf is mottled with green and grey, and bordered with soft yellow. I. A. aurea pendula is, as its name implies, of pendulous habit and of graceful outline. Its large, ovate leaves are irregularly bordered with yellow. This is a capital subject for planting as an isolated specimen on the lawn. I. A. heterophylla aureo-picta is well worth including in a selection of good shrubs. Its neat foliage is blotched with pale green and soft yellow. I. A. argentea albo-lineata has ovate leaves with slender spines, distinctly margined with cream-white. I. A. Milkmaid is very distinct. The centre of the leaf is heavily blotched with creamy-white. I. A. Wateriana is one of the most pleasing of the golden-coloured varieties. It is of dwarf, compact habit, and one of the best varieties for planting in gardens of restricted area. Its glossy green leaves are mottled with soft yellow and bordered with a deeper shade. I. A. argentea elegantissima is a large-leaved variety; leaves dark green, central portion grey, bordered with cream-white.

Begonia Gloire de Lorraine.—Considering the beauty of this Begonia, one wonders why it is not more frequently grown. At this time of the year, when flowers are getting scarce, its masses of tiny pink blossoms are exceptionally pleasing. "A constant bloomer" the variety is termed, and this is by no means an exaggeration, for so long as there is a particle of growth left on a plant it will continue flowering. The habit is graceful and pendent, and when grown in small pots the masses of rosy-pink flowers look charming on the table. It is no less pleasing when grown in small pans, suspended from the roof of a warm greenhouse, as when so grown the flowers droop gracefully. The variety is increased by propagation from cuttings rooted in heat. Amongst the winter-flowering Begonias this variety is the one most suitable for the warm greenhouse.—H. H.

FRUIT.

PROFITABLE PEARS.

IN the selection of Pears for profit the question of high flavour or quality must be a secondary consideration. The amateur need not grow many kinds; indeed, about half-a-dozen will be ample, and even less would suffice if all the fruits are to be marketed. There are few kinds equal in quality to Doyenné du Comice, and some will remark, why leave out that good Pear in a selection of profitable kinds? It is, however, not always free, and not suitable for all soils. It cannot be disputed that for market there must be size, colour, and shapely fruit. There are serious objections to this. I have heard it remarked, why not grow the best? But, unhappily, these do not produce a full crop, many do not thrive as standards, and, with a severe foreign competition, it is well to grow those kinds for which there is a demand. In my list colour will count greatly—size also; and I have found it does not pay to grow very late kinds, as the foreign fruit soon prevents the sale at a profit of later kinds, and many cannot store, as this adds to cost and labour. Amongst profitable Pears we have some good early autumn fruits, and these grown in quantities command a fair price, but even then much depends upon gathering, packing, and grading, details space prevents me entering into, but the two first are important points, though often lost sight of. Fruit of any kind is so much more valuable if well preserved during transit. Another point deserving of attention is the kind of tree to suit the soil, the stock on which it is grown, and the management of the trees, as the latter grown for profit need different treatment to those often cultivated as ornaments to fruit quarters. A certain amount of freedom must be allowed. No severe pruning, but not crowding, or small fruits of less value will be produced. In light dry soils or in gravel the trees are best grown, or on the Pear-stock; but in good land the finest fruits are produced on the Quince-stock. If standard trees are grown these are mostly on the natural stock and give heavy crops if the heads are kept thinned out to admit light and air, and allow the sun to reach the fruit and colour it freely. I have noted that orchard-trees are most productive, and the amateur can also grow bush trees with profit, as these occupy less space and produce finer fruits. Those on the Quince give an ample return, but require more attention in the way of food, moisture, pruning, and thinning of fruits. On the other hand, by this mode of culture much better prices are obtained, and anyone may grow better kinds if they are sure of a ready sale, and size and colour are not the most important points.

A branch of Beurré Clairgeau Pear. From a photograph by Mrs. L. Gordon Cumming, Billesley House, Kings Heath, Worcestershire.

The following may be termed excellent market kinds. The well-known Jargonelle is always saleable early in August, as Pears are always liked as soon as they can be procured, and this variety does well as an open standard. I know it is often grown on a wall, but it also succeeds as a bush on the Quince, but it is not so profitable as

WILLIAMS' BON CHRETIEN. — This is so reliable that I class it as the most profitable Pear an amateur can grow. It succeeds in any form, standard or bush, is a beautifully coloured fruit, rich, melting, and large. Even when grown as a standard it is not at all fastidious as to soils or locality. It bears grandly on the Quince-stock in bush form, and on the Pear is equally prolific, but a little later. There is one difficulty —namely, that the fruit will not keep, but if gathered from the trees and eaten at the end of August it is first-rate, and commands an excellent sale. I knew an amateur who paid the rent of a garden of some acres with his Williams' Bon Chrétien Pears, and this was done years in succession, but he thinned his fruits and got size and colour. Another valuable market Pear is

CLAPP'S FAVOURITE, not a rich Pear, but a variety of great excellence, of fair size, good on the Pear or Quince-stock, and a grand standard or orchard tree. This is an American introduction, and a pretty fruit, yellow, flushed with bright crimson, and in some soils is even earlier than Williams'. This also will not keep long; is best gathered at the end of August, and used from the trees. It always commands a ready sale in the market.

BEURRE CLAIRGEAU (the variety illustrated), is not nearly as much grown as its merits deserve. It is a special market favourite, a large, handsome fruit, and it rarely fails to crop —indeed, grown in bush form on the Quince-stock it is very fine, and on the Pear, in standard form, gives a smaller return, but always saleable. This is a second-rate fruit as regards quality, but I have tasted good fruit if gathered before it is quite ripe, and equal to some of less size and given a better name for quality alone. It comes in after the fruits I have named above—viz., during October—and should not be stored but gathered and disposed of like Clapp's Favourite. It is finely coloured, and is not a coarse grower. It does well in light soils, and is not inferior in quality grown thus.

DURONDEAU, a handsome Pear, valuable for its size, colour, and fair quality. This makes an excellent bush, is a melting fruit on a warm soil, and may be grown in any form. It is exceedingly fertile on the Quince or Pear-stock, and will bear when others fail in cold clay soils. I do not advise it to be grown as a standard, but as a bush, and it is a great favourite in the market, being in season the latter part of October and early in November. The fruit should be left on the trees as long as possible if it is wished to store, but I find there is a good sale for large Pears early in October. This variety well repays cultivation in bush form, and the fruits must be thinned to get size and good colour. Keep the trees free from wood. On walls this variety comes very large.

PITMASTON DUCHESS.—This is an October fruit in warm soils or from bush trees. It is one of the largest Pears grown, and a favourite on account of its size. As regards quality it is not inferior. On the Quince-stock it comes very large and is earlier than the Pear. I am not in favour of planting tall standards, as, owing to the great weight of the fruits, the winds soon damage them. Dwarf or half standards on the Pear do well, also what may be termed bush trees with a dwarf stem or leg. It is much liked as a dessert fruit if gathered a little time before ready for use. If several positions are given the trees there is no difficulty in keeping the fruits so as to ensure a succession well into November. If stored, a cool place should be given, and only a single layer of fruit. W.

WINTER DRESSING FRUIT-TREES.

ACTIVE operations should be commenced at once against all sorts of insect pests that prey upon fruit-trees. Owing to the buds being now dormant, stronger remedies can be more safely applied than at any other time. Amongst the worst of fruit-tree enemies may be mentioned American-blight and various sorts of scale. The latter infest Cherries, Plums, Pears, and other wall trees, even more than they do trees of similar kinds in the open garden. For American-blight, or, in fact, any of the insect pests that remain on the bark during winter, I have found nothing so effectual in reducing their numbers as a good hard scrubbing, going over the trees first, and thinning out the knots and spurs, around which they usually collect in great numbers at the approach of winter. Strong soapsuds or brine may be safely used on the old wood, and after the trees are divested of all that can be reached by these means the garden-engine should be vigorously applied, for if once the insects are loosened from their hold a good drenching will completely destroy them. Then apply one or other of the various insect destroyers now so numerous, such as Gishurst Compound, paraffin-oil, etc. I find a hand-syringe a very good means of applying liquids to wall and dwarf trees, and in the case of tall standards I use the garden-engine. The principal point is to see that every particle of the bark is wetted, being careful to get well under the branches. I have seen trees badly infested with insect pests cleansed with that homely remedy "soapsuds," well drenching them overhead for a few times in succession at short intervals between the applications. Hundreds of unhealthy fruit-trees are often badly infested with scale, though unnoticed by their owners, who go on applying stimulants to their roots, forgetful that these minute and unobserved enemies are sucking the very life-blood from the trees, and that, until removed, all hopes of improvement are useless. Coating the stems and branches with a mixture of various compounds applied with a soft brush is an effective mode of dealing with these pests, but it takes more time than dressing the trees with liquid applications. From 6 oz. to 8 oz. of Gishurst compound to a gallon of water, and enough clay to thicken it, is a safe application, or it may be even used stronger if not put over the fruit-buds, or paraffin-oil may be used at the rate of ½ pint to a gallon of water; the latter should also be strongly impregnated with Tobacco juice by pouring it boiling over ½ lb. of Tobacco, and flowers of sulphur, lime, and clay should be added to the mixture in sufficient quantity to thicken it into a paint. This is a good remedy for all kinds of fruit-tree insects, including those of the Grape-Vine. Where many trees require attention, a large quantity can be mixed at one time and used as required. Moss and other parasitic growths can also be better dealt with now than at any other period of the year. If the trees are large and much Moss-grown, scrape or scrub all the main branches, and then dust with finely slaked

lime, choosing a damp, still day for the operation, when fog or mist makes the air heavy and the branches are dripping. If the lime is fresh a very little will suffice to destroy Moss, which will soon wither up and drop off. In walls nail-holes and joints get full of insects, and a coating of thick whitewash should therefore be worked into every crevice. If the whitewash is too conspicuous a little cement added will make the effect less glaring, and the mixture none the less serviceable; then by way of finish top-dress the roots with half-decayed [stable-manure, which will prevent drought from affecting them. If the soil is poor in quality, or much exhausted by close cropping, remove the top spit of soil to another part of the garden, and substitute fresh fibrous turf, a material in which it is surprising how much the roots of fruit-trees revel; it contains all the ingredients necessary for building up fruit-trees, and for keeping them for many years in a fruitful state.

B. H.

Grapes in vinery *(Thomas)*.—For early Grapes to plant in same house as Black Hamburgh we should advise Madresfield Court, black, and Foster's Seedling and Buckland Sweetwater, both white. If, however, you prefer another black Grape then get Alton Towers, an excellent variety. For a late vinery, which, however, should not be started later than March, because late Grapes need to be well finished before they are required to keep late, you will find Gros Colman the largest-berried Grape, Black Alicante and Lady Downes, the best blacks. Of these you will do well to plant two Vines each, making six Vines out of your three. Then you may plant one Vine each of Trebbiano, and Lady Hutt as whites. Muscat of Alexandria is really the best late white, as it keeps well till February. As to planting, that you may do at once if your borders are ready. Do not make them too rich; one half good turfy loam, one half of the ordinary garden soil does well if you add to this a moderate quantity of bone-dust and wood-ashes. Some lime or old mortar-rubbish is also helpful. Do not make your borders at the first more than 4 feet wide. Trench the soil 2 feet deep, and if the bottom be gravel so much the better. Make the border fairly firm before planting. Keep the roots rather near the surface, and give, after covering up with soil, a thin mulching of short manure. Cut back your Vines hard a month after planting. Start them gently as they will need all the next season to get well established.

Fruit-room *(H. T.)*.—A fruit-room or chamber should have the merit of maintaining an equable temperature. For that purpose it is best not to have it looking south, as the sun on warm winter days causes great fluctuations of temperature, causing sweating and rapid exhaustion or shrivelling. The temperature should range from 35 degs., the very coldest, to 45 degs., the very warmest. A north position or under the shelter of trees conduces to securing this equable temperature. The admission of light is not at all detrimental, provided it does not with it admit frost, or in milder weather sun-heat. Some ventilation is desirable, although it need not be constant, as in frost it would be unwise to give ventilation if likely to lower the temperature. Neither should it be given when the weather is damp and muggy. When it is dry and cool, yet not frosty, then open for a few hours the door at one end and a wooden trap or window at the other. This changes and purifies the air of the room, without materially affecting the temperature. It would never do to erect a fruit-room over a stoke-hole, as that would generate a hot, dry atmosphere. Fruit-rooms are best when they have a soil floor, as then enough moisture arises from the soil to keep the air just humid, or not too dry. The thicker the roof and walls, especially if well thatched, the better, but a small hot-water pipe is helpful to exclude frost in hard weather, or failing that an oil-lamp may be useful. All that is needed is just to exclude frost. Straw should not be used, as it generates damp and mould. The shelves are best made of wood-trellis, with the sharp edges smoothed off.

A curious Orange.—I enclose you what appears to me to be an unusual freak in a fruit. I know that such occurrences are not uncommon in the animal kingdom, but never before seen such a case in a vegetable.—R. R. H.

*** *We have seen this before—a small Orange within an Orange.*

THE GOLDEN-RAYED LILY.

The accompanying illustration represents the handsome Japanese Lily (Lilium auratum) grown in an 8-inch pot. The plant, which measured 3 feet 6 inches in width and 3 feet through, was grown from a single bulb. It threw up five stems, which bore perfect flowers, forty-nine in all, most of which were 8 inches in diameter. All the blooms were open at the same time. The plant was placed in the open by day, and put in a cool-house at night, which, no doubt, accounted for its sturdy growth, the tallest stem being less than 3 feet above the pot.

A. T. French.

Highweek, Newton Abbot, Devon.

Lilium auratum in a pot. From a photograph by Miss French, Highweek, Newton Abbot, Devon.

A note from Ravenglass.—I have only just seen in Gardening Illustrated, for Oct. 16th, the notice of Eucalyptus globulus in Staffordshire, and write to say that on the Guard-room Tower of Muncaster Castle there was a tree of the same that must have been at least 25 feet high. It was killed three or four years ago, but the main stem was left, and I measured it to-day at 5 feet from the ground, and it was 18 inches in circumference. It never used to have any protection, and lived out for many years. Some young plants have been put in near to give them a chance of equalling the old one. The Escallonias here form bushes 20 feet high, and live in the common shrubberies as hardy as the commonest Laurels. Montbretias that I see complained of spread here so quickly that it is only by constant replanting and throwing away the small bulbs that they can be kept in any order. The aspect the Eucalyptus was growing in was south-west, about a mile from the sea as the crow flies.—L. R., *Ravenglass, Cumberland.*

Begonia Ensign is one of the pioneers of a probable new race of these increasingly popular flowers, and is the result of crossing one of tuberous-rooted section and B. socotrana. The variety in question is by no means particularly showy as we understand the Begonia to-day, but a good deal of interest attaches thereto by reason of the parentage, and doubtless we shall now soon see the better forms of the Tuberous Begonia generally, with their infinite variety of colours, infused in greater or less degree into the winter-flowering kinds. In this way such things will prove a great gain to our greenhouses.

TRENCHING AND DIGGING.

Trenching is a matter of much importance in the treatment of garden ground, particularly that part devoted to vegetables, and it ought to be done well and wisely. A man with a strong arm can cast out a trench well, but it requires both judgment and experience to decide how much, or if any, of the subsoil should be placed upon the top. Subsoils vary so much that no certain rule or correct guide can be laid down upon this point. But there is one operation that is applicable to every variety of subsoil (which neglected no trenching can be said to be efficiently carried out), that is, loosening and breaking up the bottom of the trench by spade or mattock, as the case may be. The more thoroughly that is done the greater will be the ultimate benefit resulting therefrom. Another very important point to be considered is the proper season in which to trench. No doubt autumn is the best time for such work, and the earlier it is done the better, before the surface soil parts with the heat obtained from the summer sun. The next consideration of importance is the application of manure during the operation of trenching. Many people never trench in manure, whilst, on the other hand, some think it best to do so. If manure be buried deeply in the trench it is well to use it in the green state, thus giving the ground the full benefit. If trenching be done in the autumn the manure will by the following summer be decomposed, and should the weather then be dry, deep-rooting plants will very soon go in search of it and be greatly benefited thereby. There are, however, people who prefer putting the manure near the surface, with a view to benefit the soil underneath by the washings of the manure by rains. This question, however, must be settled individually, according to opinion or circumstances. The proper depth to trench must depend upon the natural depth and character of the soil, and also the depth that has been gone to in previous trenchings. If the subsoil be bad, no portion of it should be brought to the surface, but a few inches of it may with advantage be stirred and left there for a time, and the essence of the manure washed down by rains becomes mixed with, and gradually improves, it by the time the land again requires trenching. In two or three years those few inches of bottom soil can be brought to the top, and a little more of the bottom loosened up and left as before. Where the subsoil is ordinary clay, a couple of inches, at this and every subsequent time the land is trenched, may with advantage be brought to the top; but where this is done the work should be carried out in the autumn or early winter, so as to allow of the clay getting mellow and in a fit state to be forked in previous to the time of cropping. In digging or trenching in autumn and winter the ground can scarcely be thrown up too roughly. As large a surface as possible should be exposed to the action of the atmosphere. No time should be wasted in attempting to chop and cut it to pieces; rain and frost will do this effectually.

H.

INDOOR PLANTS.

NOTES ON PERSIAN CYCLAMEN CULTURE.

THIS Cyclamen, which is one of the most beautiful, useful, and continuous-flowering of all greenhouse plants, can be easily raised from seed; indeed, this is much the best way of propagating it. Sowings should be made at different times of the year, according to the season the plants are required to flower. If well managed the plants will be large enough to blossom well when from fifteen to eighteen months old. To flower in spring sow during November or December; if wanted to come into blossom during the late autumn and winter months sow about the end of July in wide, shallow pans, filled with a mixture of sifted fibrous loam, with some leaf-mould and a little sharp silver-sand added. Press this material down moderately firm, scatter the seeds an inch apart over the surface, and cover them with about ¼ inch of the soil. When sown at this time stand in a temperature of about 60 degs., where they will soon vegetate if the soil is kept a little moist. To do this without giving too much water a thin sheet of paper may be laid over the surface and be removed as soon as the plants are up, after which they must be kept close to the glass and the sun not allowed to reach them during the heat of the day. The best place in which to grow them through their early stages is a low, heated pit, where an intermediate temperature (which is necessary all through the first autumn and winter, so as to get them on large enough to flower satisfactorily by the close of the ensuing year and on through the subsequent winter) can be kept up. Give a moderate amount of air daily from the time the young plants are up, keeping the atmosphere a little moist and syringing slightly in the afternoons. As soon as large enough to handle, move the little plants singly into small pots, using soil similar to that in which the seeds were sown. Stand them on a moist bottom, still close to the glass; leave off shading as the sun decreases in power, and keep up a night temperature during the winter of about 50 degs., in which they will go on growing so as to require moving at the beginning of April into 3-inch pots. Then use similar soil, but add a little cow-manure that has got old and mellow. They will now require a little more warmth, and until the season is further advanced enough fire should be used to keep the temperature up to 55 degs. in the night, and proportionately higher by day when there is an absence of sun to raise the temperature. A thin shade will again be needful through the spring and summer whenever the sun shines powerfully on them. Care must be taken at all times during the season of growth that they never want for water at the roots, or they will receive a severe check. Keep the atmosphere and the material on which the pots stand moist, and syringe overhead each afternoon, all of which are necessary to keep them free from red-spider. Give air every day, but avoid cold draughts; towards the end of June move the plants into 5-inch or 6-inch pots, which will be large enough to flower them in the first season, and use a fair amount of drainage in the pots. Continue to treat as hitherto advised in the early part of the summer until September, when give more air, and discontinue shading and syringing, so as to solidify the growth and induce the formation of flowers.

Let them have a position near the glass, but through the autumn and winter let the material on which they stand be kept as dry as possible. If each plant is now stood upon an inverted pot it will allow a better circulation of air around them. With the same object in view do not crowd the plants too closely together, a condition that should in all stages of the growth be avoided, or the leaves will get drawn and weak and the plants spoilt. If all has gone well they will now be sturdy examples, with short, stout leaf-stalks, the foliage half covering the pots. They will flower freely through the last months of the year and early part of winter, during which time they should be kept in a night temperature of 45 degs. to 50 degs. After blooming is over keep a little cooler, and when all danger of frost is over they may be turned out-of-doors and placed under a north wall, the pots plunged in ashes, or, better still, they may be kept in a cold frame, placed where they will be out of the full sun, and given enough water to prevent the soil getting quite dry. The plants will lose most of their leaves through the early part of summer, but will afterwards push up quantities of new leaves. As soon as these are visible give more water, and when a little growth has been made move into pots an inch larger, shaking away the old soil and replacing it with new of a like description to that hitherto recommended. Afterwards stand them in a pit, frame, or greenhouse, and treat as advised for the preceding season, except that they will not now require to be kept so close. The ensuing winter the plants will yield numbers of flowers proportionate to the increased size they have attained. After blooming again treat as in the previous spring and summer, in the matter of standing out, re-potting, etc. They may be kept on after they have again flowered, or be discarded and their place taken by younger stock, which it is well to keep coming on by sowing some seed each season. When the sowing is deferred until autumn, keep a little cooler both before and after the plants come up, and it will be well to prick them off when large enough 2 inches apart in pans, allowing them to remain until spring before potting singly. Afterwards treat as advised for the early-sown stock. Red-spider, to which they are liable, will usually be kept under by following the course of cultivation detailed. Thrips and aphides sometimes attack them, getting to the undersides of the leaves, and doing much mischief before being seen. These insects should be repeatedly sought for; when discovered dip the plants in Tobacco-water, or fumigate several times with Tobacco. B. H.

CINERARIAS AND HERBACEOUS CALCEOLARIAS FOR SPRING FLOWERING.

ALL those who contemplate having healthy plants of these invaluable flowers next spring should lose no time now in giving them a good start, and once they are in that position they must not receive any check until they occupy the pots in which they are intended to flower, the size of which will vary, according to circumstances, from 6 inches to 8 inches; 10 inches and even 12 inches for very large specimens. A few of the latter are very effective where there is space for them, with heads of flowers from 2 feet to 3 feet across, accompanied by clean, healthy foliage; but very good and effective plants may be had in 6-inch or 8-inch ones.

CINERARIAS

that may now be in 3-inch or 4-inch pots, providing the roots have well reached the sides of the pots, should at once be given 5-inch pots. Pot moderately firm, and place in a cool situation close to the glass. Either a frame, pit, or cool greenhouse will do, but a cool, moist atmosphere is indispensable, whatever the structure may be. Throughout the autumn and winter months a temperature ranging from 38 degs. to 45 degs. will be a suitable one at all periods of their growth. Keep the plants well apart from each other, for if the leaves are allowed to lap one over the other they are quickly spoiled. A good plan is to place each plant on an inverted empty pot, and sufficiently far apart that every leaf is at liberty to expand, and at the same time to have a perfect circulation of light and air around it. If thus attended to from the first, and kept entirely free from insects, they will retain all their foliage, which by the time the plants have filled the flowering pots with roots, the latter will be hidden by the leaves.

The best compost I have found as follows: Two parts rich turfy loam, inclined to be stiff, one part well-decayed cow or horse-manure and Oak or Beech leaf-mould, with a little sharp sand and wood charcoal well mixed with the rest. Water should be given when required, using the spout without a rose. I have often found when the plants have been much watered overhead with a rose that many of the large leaves decay; the necessary moisture plants require can be best provided by sprinkling the surface on which they stand.

Insects are troublesome, and if once they are allowed to take possession they are very difficult to dislodge without injury to the plants, making the remedy as bad as the disease. To prevent this I have found the following to answer perfectly: Give the structure in which they are placed a very slight fumigation with Tobacco or Tobacco-paper every eight or ten days, whether any insects appear or not, and success will be almost certain.

The most suitable structure in which to grow both the Cinerarias and Calceolarias is a span-roofed pit, about 5 feet or 8 feet wide, with a flow and return 3-inch pipe carried round a foot or two from the glass. Cover the bottom of the pit with fine cinder-ashes, and on these place inverted 8-inch or 10-inch pots. Stand the plants on these, and throughout their growth they should be kept perfectly clear of each other, and you will not only have fine heads of flowers, but perfect foliage, which will greatly enhance the beauty of the former. Water the cinder-ashes beneath the plants to keep up the necessary moisture. Whenever it is safe to do so, leave a chink of air on during the night; this prevents damp. Do not stop the flowering stems, as by so doing much of the natural beauty is spoiled by producing a squat, ugly head of flowers.

THE CALCEOLARIA

may receive almost identical treatment as to soil, watering, and keeping free from insect pests, and potting, with one addition—viz., the flower-stems must be carefully supported with neat stakes, painted green. As soon as the flowers appear the plants will be benefited by a little weak manure-water, but let it be clear and well diluted. H. ELLIS.

PENTAS CARNEA.

THIS useful old free-flowering stove evergreen shrub is not grown nearly so extensively as it might be. Its culture is of the easiest description, and it grows and flowers most freely when given an ordinary stove temperature. Dwarf plants are exceedingly useful for filling vases in rooms during the winter months, and they do not suffer in the same way as many other things when subjected to the unnatural conditions that surround them in drawing or sitting-rooms. The trusses of flowers when cut with a good length of stem associate well with other cut blooms, and they are very effective when used alone. They also possess the good feature of lasting in good condition for quite a week if the water is kept changed. Cuttings made of the young growths strike freely in a sandy compost, placed under a bell-glass or in a propagating frame. When well rooted they should be potted off into suitable sized pots and shifted on again as soon as they have made plenty of roots. The size of pot for the last shift will depend on the purpose the plants are required for. As a rule, 8-inch pots are large enough for growing plants in to furnish cut blooms, and 6-inch or 7-inch for plants intended for house decoration. A compost consisting of three parts loam, one part leaf-mould, and a liberal addition of silver-sand suits their requirements and promotes a short-jointed growth. Frequent stopping of the young growths is necessary until good bushy plants are formed, after which they may be allowed to flower. When commencing to bloom, weak guano-water is beneficial, as it not only leads to finer trusses of flowers being produced, but it also assists the plants to break back more speedily, with a resulting fresh crop of blooms.

For furnishing plants for winter blooming the cuttings should be struck about the end of May, and grown on afterwards without a check, keeping all flowers suppressed in the meantime. To have the plants dwarf and stocky they should be kept close up to the light, and a light shade during sunny weather is necessary. I am trying an experiment with this plant this season, and have planted out some old specimens in a Melon-house and trained them on the trellis. So far they have given excellent results by furnishing great quantities of bloom, and appear likely to do so throughout the winter months. The soil they are planted in is nothing else but the bed in which the Melons were grown, and they seem to be quite at home in it. If the experiment proves a success eventually it will be an easy method of growing plants for cutting from, as a good batch can be held in readiness for setting out as soon as the Melon plants are dispensed with in the autumn. I would advise those who do not already possess the plant to obtain it

they require a free-flowering subject for the winter months, and if grown in the way described I venture to think they will not regret having done so. A.

A USEFUL EVERLASTING FLOWER.

Rhodanthe Manglesi.

This is a very popular plant, its pretty rose-coloured blossoms being equally attractive in the bud state and when expanded. The white-flowered variety of it, too, is a charming plant. At one time these Rhodanthes were regarded as very difficult to cultivate, but they have been for some years brought into Covent-garden-market largely during the summer, and, in common with most things grown in quantity for that place, many of them are excellent examples of good cultivation. Quite a sheath of stems arise from the pot, all clothed with leaves that look as if mildew, once a great pest, was now unknown. The upper portions of these market plants are masses of flowers, some expanded and more in the bud state, which, with attention, will continue to open for a long time. The flowers of this everlasting are easily dried, and in that state preserve their beauty for a great length of time. I have found the following to be a successful way of cultivating them. The seeds are sown about the end of February in shallow boxes filled with light soil and placed in a gentle heat, when they quickly germinate, and soon after are removed to a frame, through which a single hot-water pipe runs—just sufficient to keep out the frost. Air is given freely, and when the first leaf is developed on the young plants they are pricked off at once into their flowering pots. Therefore, better soil is required than if they were again to be potted off. Five-inch pots are a good size for them, and these I fill with a compost consisting of two-thirds loam and one of decayed manure, adding a little leaf-mould and sand to lighten it, if necessary, but that will depend upon the consistency of the loam. The soil should be pressed down moderately firm, and about fifteen young plants are dibbled in at equal distances from each other; a dozen is sufficient for each pot, but by putting in the number first named a few deaths are thus allowed for. The plants are set on a well-drained ash-bed not far from the glass, and have all the light and air possible in order to encourage a short and sturdy growth, so that by the middle of May the blossoms commence to open and the plants are soon in full flower. Rhodanthes require careful watering, and especially avoid wetting the foliage as they approach maturity; when young it does no harm. A little weak manure-water may be given with advantage as the pots become full of roots. By varying the time of sowing a succession may be kept up, and if some seed be sown in the open ground early in May a good supply of cut-flowers will be obtained at a time when they are very acceptable. H. B.

Hippeastrum aulicum.—The pointed petals and general contour of the flower of this Hippeastrum, or Amaryllis as it is more generally called, stamp it as perfectly distinct from the round-flowered garden varieties, while the fact that it may be had in bloom during the last two months of the year furnishes another distinctive feature. It stands out very conspicuous just now at the cool end of the stove, for the flower-scape reaches a height of a couple of feet or so; hence the large showy blossoms tower above many of their associates. The flowers are of a bright scarlet-crimson, veined with a deeper shade.—T.

Greenhouse fire unsatisfactory (*S. G. P.*).—You have suggested the mistake, for the coil is wrong end uppermost. If reversed, you would have no difficulty in keeping the fire in all night, as then the fuel could fall as it was consumed. At present the fire burns too hollow, scarcely any being able to fall into the spaces you have marked E E. Reset it, and use very finely broken coke. Sixty feet of 3-inch piping is a large proportion for so small a house, and should give ample heat, even if not made very hot. If possible, set the coil a little lower, so as to give more space between top of coil and the flue.

Winter Cherry (*M. M.*).—The plant you mean is Physalis Alkekengi, and you can get it at any good nursery. Look through our advertisement pages.

FERNS.

NEPHROLEPIS EXALTATA.

When well grown this is one of the most decorative of Ferns, either as a large plant, such as the one depicted in the accompanying illustration, or when broken up into small pieces, consisting of a few fronds each, which are eminently suitable for growing on brackets or associating with other Ferns in hanging-baskets, Fern-cases, and such like. When vigorously grown very large specimens can be obtained in comparatively small pots, those of 8 inches in diameter easily accommodating plants with a natural spread of 4 feet and with fronds approaching 3 feet in length. This Fern does well in fibrous loam to which a little peat has been added. During frond-formation a comparatively high temperature will be found beneficial, but when growth is finished the plants, if well supplied with water, last well, owing to the durable nature of the fronds, when utilised for indoor decoration, for which their handsome qualities render them so well adapted. When the pots or baskets are filled with roots some stimulant is needed to supply the nutriment which the impoverished soil no longer affords. Soot-water, liquid guano, or well-diluted sulphate of ammonia will all answer this purpose, the latter having been the only fertiliser used for the subject of the engraving. F.

Nephrolepis exaltata.

POTTING SOIL.

Many amateur gardeners experience at times considerable difficulty in obtaining suitable potting soil for their plants; this is especially the case with those who live in the vicinity of large towns. Now ordinary garden soil, such as is obtainable from ground where vegetables are well grown, will answer as a makeshift when it is enriched with manure (well decayed) and leaf-mould, yet it is well to bear in mind that the roots of plants when grown in pots have access to only a very limited amount of material, so that to obtain anything like the best results the soil should be turfy and of good quality. The vegetable matter, consisting of the close mass of Grass roots contained in the top spit of soil from a common or a pasture, is just the material that suits most plants. Not only does the decayed vegetable fibre present in soil of this description afford the best food for the generality of plants, but it also keeps the material open and porous, and in a condition that admits of the roots running freely in it; consequently, even those who grow only a limited number of pot-plants will find that money expended in procuring good soil is well spent. The end of September and beginning of October, when the roots of the various Grasses are getting matured, is the best season for laying in a stock to suffice for the next twelve months. It should be stacked in a ridge-shaped heap in the open air. Potting of all kinds ought not, generally speaking, to be kept under cover, except those that are required in the spring, and which may, if kept in the open air, be then too wet for immediate use. When loam or peat is stored in sheds, as is sometimes done, it becomes dry and of little value. Of peat, as much as will last a year should be procured at the time named. This peat soil is indispensable where the cultivation of any of the finer-rooted hard-wooded plants is attempted. But it is well to be careful to obtain the right sort of peat. The close, black, boggy stuff that is sometimes used is about the worst material that the roots of a plant can be put into, as it is wholly unsuited to them. Potting peat should consist of a thin top-spit from dry ground, where the common Brake Fern grows along with tough, wiry Grasses. This will be found to consist, in a great measure, of the roots of the Ferns and Grasses, and is usually of a brown colour. The hard

peat found where the British Heath grows is generally poor and wanting in the elements of fertility necessary to support the plants, and it is also too close in texture. Leaf-mould is one of the best things that can be used for mixing with loam for the growth of such plants as require loam. Properly prepared, it consists of leaves that have lain in a heap for two years; if older than this it will be too far decomposed, and if of last year's leaves they will not be sufficiently rotten to be sifted. Sand, which is required in greater or less quantity for mixing with the soil for most pot-plants, is more easily obtained than good soil, as in most parts of the country it can be had from a river, from the sea-coast, or from sand-pits, which in some districts furnish it of good quality. The texture of the material has much to do with its suitability for mixing with potting-soil; coarse, sharp, gritty sand that contains little fine dust is the best, as it then well fulfils the object required, which is to keep the soil open and porous so as to admit of the water passing freely through it. B. H.

HOUSE AND WINDOW GARDENING.

FERNS IN THE DWELLING-HOUSE.

Some of these are amongst the very best plants we can have for vases to stand on brackets or drawing and sitting-room tables, if we duly consider their graceful effect and the length of time (with a little care) that they will remain in good condition. A judicious selection of Ferns is, however, necessary to ensure success, as they do not all succeed equally well under such conditions, nor are they all adapted by their habit of growth for this kind of work. When one has got the right kinds the plants must receive careful preparation, for if they are taken straight from a moist, warm glasshouse, looking verdant with tender young fronds, their period of service will be a very brief one. If, on the other hand, grown to the required size in a genial temperature, and then gradually inured to full exposure in a cool greenhouse, the fronds will get hardened and they will last many weeks, or even months, with care in root-watering and an occasional syringing with clean, warm, soft water overhead to wash off the dust that is sure to settle on them in any room that is in constant use. In transferring the plants to the vases shake away the soil, so as to get all the roots entire, then put a layer of crocks, broken up fine, at the bottom, over a hole drilled previously in the vase, then work the roots carefully into the vase with very finely-sifted soil, pressing down firm and finishing off with a layer of fresh, green Moss. Give a good watering after setting the vase in its saucer, and the work is complete. By this means really effective plants may be got to live for a long time, and even make good growth in dwelling-rooms. The small vases to which I principally refer, that are made in various coloured earthenware, can hardly be expected to do more than sustain the plant of the size it is when transferred from the pot in which it was growing, but if larger ones, in proportion to the size of the plants required, are used, there is no reason why Ferns of greenhouse kinds should not only live, but make fine specimens in dwelling-rooms. Asplenium bulbiferum is a good Fern for hanging-baskets or vases set on brackets, as its long, arching fronds, with the tiny little embryo plants set thickly along them, have a very striking effect. But perhaps the best of all for small vases are the numerous varieties of Pteris or Ribbon Ferns, such as P. longifolia, P. serrulata, and all the crested varieties allied to it. Then there is the variegated Pteris cretica, a most effective and hardy Fern. P. tremula in its young state is very good, and when too large for a room, if shifted on makes fine specimens. Some of the hardiest Adiantums, such as A. formosum and A. Capillus-veneris, answer well, and Blechnum braziliense and the smallest Lomaria gibba look very pretty, as their Tree-Fern-like habit, although in miniature, makes a nice contrast to the more gracefully drooping kinds. B.

Mossy Sedums.—How very pretty do these carpeting plants look in beds or borders or surfacing vases or window-boxes during the winter and spring, especially when bulbs are planted beneath. The best forms are Sedum Lydium, green; S. glaucum, silvery; and S. acre aureum, or the golden-tipped Stonecrop. If, for instance, Tulips, or Narcissi, or any bulbs, in fact, be planted in the ground in patches, and clumps of either of these Sedums be pricked out over them neatly in November, by the time the bulb points are coming through, little carpets are formed as a base for the flowers, and the effect is far more pleasing than is seen when bare soil forms the base. Whether used in window-boxes or vases for similar purpose, nothing can be more pleasing. Even patches of them put out here, irrespective of bulbs, form very pleasing objects, especially during the winter. A few pieces dibbled in round Hepaticas, Primroses, or any similar low-growing spring flowers, serve to prevent splashing, and, indeed, helps to keep the soil cool when the sunshine is strong. These Sedums are very easily increased. It is but needful in planting to take a small cluster of shoots, with portion of roots attached, and press them into the ground, some 2 inches apart, and, once established, growth soon follows. Propagation of this kind may go on both in autumn and spring. Even to make flower-garden edgings, these Sedums are most useful, for they grow rapidly and need only now and then to be kept in bounds by cutting along either side with a sharp spade. The golden-tipped variety is very charming, as whilst green ordinarily, as the winter advances the tips of the tiny shoots exhibit a striking creamy hue, and in the spring the clumps are thus beautifully coloured or variegated; colour dies away again later, but the clumps of this variety do not flower.—A. D.

ZONAL PELARGONIUMS FOR WINTER.

At the last exhibition of the National Chrysanthemum Society at the Royal Aquarium, there was an effective and brilliant display of Zonal Pelargoniums by Messrs. Cannell and Sons, of Swanley. It is astonishing that these plants are not more generally grown for the winter decoration of our greenhouses, as there seems to be no end to the variety of shades of colour among them. In Messrs. Cannell's stand about sixty varieties were shown, and with the exception of blues, greens, and yellows—colours not likely to be seen for some time yet—almost every other shade was represented. Niagara was certainly one of the very best whites, Lord Aberdeen the best scarlet, Blue Beard the best crimson, Countess of Buckingham the best pink, and T. W. Lawton the best salmon. Between the crimsons, scarlets, pinks, and salmons, there were numerous beautiful shades. Indeed, by a judicious selection and artistic arrangement, it seems possible to arrange Zonal Pelargoniums so effectively from a colour point of view, that the complaint of garishness against them would have little force.

Cuttings may be struck in August and grown on from 3-inch to 6-inch or 7-inch pots in the course of a year, so as to make fine strong specimens for winter blooming. By pinching out the tips of the shoots, and also the blossoms, they are kept back until six or eight weeks before the bloom is required. Cuttings are also struck in spring to flower the same year, and they are treated in much the same way, but they do not make such fine plants. During the summer months the plants may be grown outside, plunged in ashes or fibre, but care should be taken to get them into the greenhouse before the heavy rains of autumn set in. Then abundance of air and light should be given, and particular attention should be paid to watering. Only plants that are really dry should be watered, and the earlier in the day the operation is performed the better, so as not to have a moist atmosphere at night, otherwise the leaves are liable to be attacked with the well-known fungus, which produces damping off.

Good loam, with a little sand, leaf-mould, and well-rotted cow-manure, is a good compost, but artificial manures may be given before the blooming period, so as to induce large blossoms. Pinching out the tip of the shoot above the point where the flower-bud appears throws more force into the flower, and consequently tends to enlarge it. By carefully gumming the flowers with florist's gum these plants may be moved about or even sent long journeys without fear of the trusses tumbling to pieces. The gum, which should be as fine as possible, may be applied with a pointed stick or small camel's-hair brush, in preference to the oil-can method, which frequently makes a mess of the flowers. One advantage the double-flowered Zonals possess over the singles is that their flowers do not need gumming. They are excellent for cutting. Although the plants will grow at a lower temperature, it is more congenial that the thermometer should not sink lower than 50 degs. F. during the winter at night time, with a rise of 5 degs. or 10 degs. during the day.

Those in quest of novelties may save seeds and sow them as soon as ripe. If kept for a few months it has been found that a fair percentage lose their vitality, and even those retaining it do not germinate so readily. In about ten months the plants will bloom, and the raiser can then decide whether he has become the possessor of varieties superior to any already known. John Weathers.

TIGER LILIES AND BULBS IN CHURCHYARD.

(In reply to "R. S.")

That many churchyards and cemeteries could be improved by a judicious selection of bulbs, plants, trees and shrubs, nobody will, we think, gainsay. Cemeteries should be laid out with taste and made to look attractive and beautiful at all seasons of the year. The grassy surface should be kept cut and tidy, the trees and shrubs pruned at the proper period of the year, the walks kept level by frequent rolling and free from weeds, and on no account should there be untidiness in the place. If the grassy surface is not too thick and hard the following bulbs may be planted with success. Daffodils are well-adapted for naturalising in the Grass. Most of the vigorous growing varieties may be selected. The Crown Imperial Fritillary (Fritillaria imperialis) and all the hardy Ornithogalums succeed well. Adonis vernalis is a beautiful spring-blooming species. Lilies are first rate, so long as the tender ones are not employed. Leucojum æstivum and Tulips are well worth planting. Snowdrops are lovely and well-adapted for planting in churchyards.

The undermentioned are suitable for planting on graves: Crocuses, Hyacinths, Scillas, Snowdrops, Colchicums, Erythroniums, etc. Of herbaceous plants the following can be used with good effect, either in borders or planted in clumps: Monarda didyma, Willow Herb (Epilobium angustifolium), Pæonies, Asters (Michaelmas Daisies), Irises, Dictamnus Fraxinella alba, Gunnera scabra, Helianthuses, Spiræa Aruncus, Betonica grandiflora, Campanulas, Phloxes, Lychnis chalcedonica, Solidagos, Delphiniums, Rudbeckias, Statices, etc.

Deciduous and Evergreen Trees.—It is very strange why Yews and Cupressus should have been planted with such monotonous repetion, considering the wealth of other trees which are quite as suitable and certainly as ornamental as the two above-named. The following are well adapted for planting in churchyards: Laburnums, Weeping Beech (Fagus sylvatica pendula), Weeping Ash, Sophora japonica and its pendulous form, Amelanchiers, Cratægus, Acacia hispida, Cotoneasters of sorts, Hollies, Weeping Willows, Amygdalus, Liquidambars, Buxus, Juniperus, Biotas, etc.

Shrubs.—Daphnes, Aucubas, Berberis Darwini and B. stenophylla, Viburnums, Double Gorse, Olearia Haasti, Elæagnus, Jasminums, Osmanthus, Veronicas, Cornus, Ribes, Golden and Silver-leaved Elder, Symphoricarpus racemosus (Snowberry), Cydonias, Chimonanthus fragrans, Rhus Cotinus, Euonymus japonicus, and E. europæus, Spiræas, Genistas, etc.

PRIMULA DENTICULATA.

It is always a matter of some surprise, seeing the ease with which plants of this species may be raised from seed and how freely the latter is produced, that we do not more often find them used in spring gardening. If we, again, bear in mind that its peculiar shade of colour is not very common, I think one may assume that some pretty garden effects may be obtained by its free use or in company with other things, or, again, when grouped in the rock garden. The forms of Himalayan Primroses can vie with almost any hardy plant for general effectiveness

either in its large, handsome tufts of broad leaves or its dense clustered heads of lilac flowers. And when speaking of these forms of Himalayan Primroses I would be understood to mean not only the above-named species, but also its many variable forms, which include cashmeriana, and by going a little wider embrace also that equally valuable, though in many gardens less reliable, species, P. capitata. These are so nearly akin in general aspect, that they may all with advantage be grouped in a somewhat similar manner. The last-named species has almost globular heads of flowers of the deepest purple blue, a most distinct and often varying shade of colour. This is invaluable for grouping in the rock garden in deep loamy soil and a position removed from hot sun. In the cool-house this is a capital plant for winter work in pots, and should be largely grown for this purpose alone. Seeds are freely produced and plants may be raised abundantly where required. It should be noted that P. capitata is not so truly a perennial as the other kinds, and therefore there is greater need for more frequent renewal by seed. There are many positions in the garden suited to these plants, and none more so perhaps than the half shady parts of the woodland or the drier parts of the bog garden. In either of these a group of fifty or a hundred plants will produce a splendid display.

P. denticulata has heads of blossoms less globular in shape, and of a pale lilac, which also is most variable in colour. The variety pulcherrima has larger heads of flower of a deeper shade of colour. There is also a white-flowered variety of this plant, P. denticulata alba. It is in reality, and also unfortunately, not a pure white flower, though sufficiently white to merit the varietal distinction. It is quite possible that, having thus far departed from the typical plant in point of colour, a good and pure white may yet be forthcoming, while to those who have plenty of spare time I would suggest crossing this white variety with the snowy Primrose through a series of years, with the object of securing the snowy heads of pubescens alba on a more vigorous habit of growth. These varieties of denticulata are distinct in having no meal on the stems and leaves, while in P. cashmeriana the plant is covered with a dense mealy farina. This last-named form is perhaps the most vigorous of all, revelling in a soil which is both deep and fairly rich and rather moist, for here it produces its densely formed heads of pale blue or lilac flowers on stout stems, often 18 inches high, and frequently, where shade and moisture are always at hand, even more. By the term moisture here applied, and which is applicable to all save P. capitata, which is more content in drier spots and partial shade, it will be found all sufficient if the roots are in touch with the moisture, as the crowns very quickly perish if long submerged. But, given this moisture at the root, the plants will bear the fullest sunlight, or, where these conditions are not forthcoming, may be well grown on a border that possesses a fair amount of shade as well as a good depth of soil.

TREES AND SHRUBS.

A SEASIDE SHRUB.

DESFONTAINEA SPINOSA.

In many districts of England, especially near the sea, this Chilian shrub will both grow and flower in a satisfactory manner, but where such is not the case it is well worth the protection of a greenhouse, as its blossoms are very striking and distinct in character. It is a plant that is pretty well known, but its merits as a greenhouse flowering shrub are not sufficiently recognised, for it is usually seen, except in some favoured spot, struggling for existence outside, and under such conditions it wears a very unhappy look. It may be kept fairly well in pots, but succeeds best where planted out in the cool greenhouse and allowed to remain undisturbed. The plant is of a sturdy, freely-branched habit of growth, with foliage very much like that of a Holly, while the drooping, tubular-shaped blossoms are scarlet tipped with yellow. This Desfontainea was introduced into British gardens by William Lobb at about the same time as Lapageria rosea, Escallonia

Desfontainea spinosa.

macrantha, Embothrium coccineum, Philesia buxifolia, and Berberis Darwini—truly a brilliant group of flowering shrubs. Though Desfontainea spinosa is here spoken of as a beautiful flowering shrub for the greenhouse, plants so treated are, of course, not to be compared with examples of it in the milder districts where it flourishes in the open ground. In Devon, Cornwall, and many parts of Ireland it is at home, and so is the Fire Bush (Embothrium coccineum) from the same region, which, when laden with with its clusters of brilliant Honeysuckle-like blossoms, is such a gorgeous sight as to recall some native of the Tropics. The Desfontainea may be propagated by means of cuttings, which are not particularly difficult to root, though they generally stand some time before doing so. Treated as greenhouse Rhododendrons—that is, taken when the young growth is about half-ripened, inserted into well-drained pots of sandy soil, and kept close in a temperature slightly higher than that in which they have grown—they will give but little trouble. I have also struck the Embothrium in the same way, though it has the reputation of being a very difficult subject to root. T.

Evergreen berry-bearing shrubs for grave (*C. B. M. R.*).—Gaultheria procumbens is just the kind of dwarf, berry-bearing shrub suitable for planting on a grave. It should, however, be taken up and divided every third season, so as to ensure regular crops of its cheerful red berries. Soil of a peaty nature suits it best. Plants can be purchased at about six shillings a dozen. Pernettyas are of neat habit, and are well adapted for planting on graves. They are very beautiful objects when loaded with their richly coloured berries. Berberis Darwini is not suitable for grave work, as it is of much too vigorous growth. Skimmias are neat evergreens, and can be recommended for your purpose. Consult our advertisement columns for vendors of the plants named.

BERRY-BEARING TREES AND SHRUBS.

As we are now in the midst of the planting season, a short article on a few of the most useful hardy, berry-bearing trees and shrubs may be welcome. No garden can be considered complete that does not contain a selection of these easily-grown and beautiful trees. They are perhaps seen at their best when the majority of other subjects are at their worst. In winter they supply colour to the garden, when their richly-coloured berries are nestling amongst the evergreen foliage, or hanging in clusters along the leafless branches. The berries are of various size, and the colours comprise dull and bright reds, yellows, browns, white, black, etc. In addition to their berries some of the plants enumerated below have other attractive features. The Holly forms the subject of a distinct article, so need not be further referred to.

Pyrus Aucuparia (Mountain Ash) is a very graceful, deciduous tree, growing in favourable situations to a height of about 20 feet. It is a fairly rapid grower, and succeeds well in cold soils and exposed situations. It forms a well-balanced tree, with long branches clothed with smooth, deep green leaves. In May and June it bears a rich profusion of white, fragrant flowers, succeeded by clusters of rich scarlet berries in the autumn.

The White Beam-tree (P. Aria) is vigorous and very ornamental. It grows to a height of about 30 feet, with numerous branches which forms a roundish head. Its terminal flowers are succeeded by large scarlet berries as autumn approaches.

The Sea Buckthorn (Hippophaë rhamnoides) carries a large quantity of orange-coloured berries. It thrives well in dry, sandy soil, and grows freely on the margins of lakes and streams. Amongst the

Thorns (Cratægus) are several excellent ornamental shrubs and small trees. They are exceptionally useful, as they grow freely in poor soils. They are also admirably adapted for planting in towns and small gardens. C. Pyracantha (the Evergreen Fire Thorn), which has frequently been referred to in Gardening, is one of the most showy of its class. It can be grown successfully against walls with any aspect. Its orange-red berries are produced freely and hang on the plant for the greater part of the winter if a net is thrown over the bush to prevent birds from picking them. Of the deciduous varieties, C. Carrierei is the best. It is a sturdy grower, and produces large orange-red fruits, which remain on the tree for a considerable time after other Thorns have lost their berries. Another first-rate variety, which carries its fruit for a long time, is C. Crus-galli ovalifolia. It is of spreading habit, with large clusters of round red berries. This variety is deserving of wider cultivation. C. orientalis is very distinct. Its yellowish-red berries are attractive and freely produced. C. occidentalis is a deep red-fruited variety. The Tansy-leaved Thorn (C. tanacetifolia) is well known. It is a robust, upright-growing variety, with large greenish-yellow fruits, which contrast well with the other Thorns. A popular, useful, and extremely ornamental section of berry-bearing plants is included amongst the

Cotoneasters, some being evergreen, others deciduous. Amongst the last-named the following are really fine: C. bacillaris is a beautiful free-growing shrub, with erect branches and dark seeds, which are borne freely. C. b. floribunda is a most prolific berry-bearer. C. frigida, commonly known as the Mountain Cotoneaster, is of first-rate importance; it is of good habit, and when its leafless branches are weighed down with the clusters of bright red berries it is one of the most desirable of shrubs; in sheltered situations it is sub-evergreen. C. affinis is of somewhat stunted growth, but any

deficiency in that respect is fully compensated for by the wealth of berries that it bears yearly. C. horizontalis is a very distinct variety; it is a free grower and sends out its branches in horizontal fashion; they are stiff, compact, and well clothed with small deep green leaves, which assume a Chestnut-brown in autumn; it bears a large quantity of bright red berries; this variety makes a capital rock plant. Amongst the evergreen sorts C. microphylla is very beautiful; its crimson fruits show up against the small, glossy green leaves; it succeeds well planted against a wall in dry soil. C. buxifolia forms a huge spreading bush, with deep green Box-like leaves; it bears a rich profusion of red berries. C. rotundifolia is well worth including; its berries are red and borne with much freedom.

EUONYMUS.—Amongst native plants Euonymus europæus flourishes in all soils. Its inconspicuous flowers are succeeded by a rich profusion of scarlet capsules, in which are enclosed rich yellow seeds. The broad-leaved Spindle-tree (E. latifolius) has broad, shining, green leaves, and is unquestionably the finest member of the deciduous varieties. The seeds are large and the capsules richly coloured. They are also more persistent than the common species. E. europæus aucubæfolius has very distinct foliage, which is blotched with yellow in much the same way as the Aucuba. It is a capital grower, and very ornamental. E. e. atro-purpureus well deserves a place, if only on account of its neat purple foliage, which it retains longer than any other deciduous Euonymus. The flowers are borne in early summer, and the richly-coloured seeds are enclosed in bright red capsules.

PHILLYREA VILMORINIANA is a handsome evergreen of dwarf habit. Its white, Hawthorn-scented flowers are borne in spring, and in early autumn are succeeded by round black berries. The

AUCUBA is one of the most popular of berry-bearing plants, as it grows freely in all soils, and is well adapted for town planting. In order to ensure yearly crops of berries it is necessary that a few male plants should be planted along with the female plants, so that the flowers of the latter may become fertilised.

THE SINGLE-FLOWERED ROSES are attractive, when their variously coloured berries of different shapes and sizes are hanging on the leafless branches in autumn. The Scotch Rose (R. spinosissima) is of dwarf, free-flowering habit, and produces a large quantity of blackish coloured fruits. R. tomentosa subglobosa is a vigorous grower and carries a great profusion of bright red berries. R. nutkana is very ornamental. It is a profuse berry-bearer and grows to a height of about 8 feet or so. R. rugosa and its white-flowered variety are two valuable plants for the garden. They are strikingly beautiful when in flower, and their shoots are terminated by large clusters of bright red fruits in autumn. They stand out as the most conspicuous of dwarf berry-bearing plants. R. microphylla, R. Kamschatica, R. cinnamomea, R. lucida, and R. macrophylla are also capital berry-bearing sorts. The varieties of

PERNETTYA MUCRONATA are very hardy, beautiful, and succeed well when grown in peaty soil. A few of the best varieties are lilacina, rosea purpurea, atro-sanguinea, alba, nigra major, carnea, and atro-rosea. In sheltered positions the

STRAWBERRY-TREE (Arbutus Unedo) is hardy. Its bell-shaped flowers and red, Strawberry-like fruits are borne simultaneously. The deciduous Daphnes deserve a word. Their sweet-scented white and pink coloured flowers are produced during the winter months at a time when few other shrubs are in bloom in the open air. The yellow and red berries are borne freely. Amongst

BARBERRIES are several excellent useful and ornamental berry-bearing shrubs. A good-sized bush of the common Barberry (B. vulgaris), when laden with its long, scarlet fruits, is very beautiful. B. virescens and B. canadensis are deserving of wider cultivation. B. Aquifolium, also known as Mahonia Aquifolium, is a handsome shrub when carrying it blue-black berries. It thrives well under the shade of trees.

CELASTRUS ARTICULATUS is suitable for training over arbours, etc. Its bright red berries are borne with much freedom along the leafless shoots. The

SNOWBERRY (Symphoricarpus racemosus) is very distinct by reason of its pure white berries, which are borne in small clusters at the apex of the leafless and semi-leafless growths. It forms a large bush, and is of the simplest culture. Another white berried shrub, but one which is far too seldom seen, is

HYMENANTHERA CRASSIFOLIA. It is a native of New Zealand, with thick, rigid stems and small, deep green leaves.

SKIMMIAS are another class of useful plants of somewhat slow growth. They are excellent berry-bearers, and succeed well in ordinary garden soil. S. Fortunei, S. japonica, and S. Foremani are about the best. The last-named has been known to hold its berries for a couple of years in perfect condition. The Skimmias are first-rate town plants. Sambucus racemosus is a very free-growing shrub, with clusters of highly coloured berries, borne with great freedom. The same may also be said of Viburnum Opulus. Planted in suitable positions and peaty soils Gaultheria procumbens is one of the brightest of the dwarf-growing shrubs. It bears a large quantity of bright red berries.

The Hydrangeas (*G. B.*).—These are of easy culture. All the varieties thrive well in a moist, loamy soil; one or two varieties need slight protection during very severe winters. The plants should be pruned every spring, and the variety named H. paniculata grandiflora should be cut back to within a couple of eyes of the old wood. By hard pruning it has larger flowers than when moderate pruning is adopted. Propagation can be effected in several ways, but the most common practice is by seeds and cuttings of the young wood inserted in sandy soil and placed under a handlight in a gentle heat.

Snowberry-tree (*Snip*). — This is a deciduous shrub, that is, one that loses its foliage in winter. You may cut it down in spring, but you will find that it will produce plenty of under wood, as it is very free in throwing up suckers when properly established. As your Privet hedge was only planted in the autumn we should not recommend you to cut it back until the spring. The tops may then be put in as cuttings.

Shrubs for small garden near the sea (*A. D.*).—The under-mentioned deciduous and evergreen shrubs grow well near the sea coast: Deutzias, Elæagnus argenteus, Aucuba japonica, Myrtles, Sea Buckthorn, Laurustinus Snowberry (Symphoricarpus racemosus), Escallonias, Osmanthus, Choisya ternata, Euonymus, Veronica Traversi, Skimmias, Guelder Rose, Cotoneasters, Bupleurum fruticosum, Buddlea globosa, Hydrangeas, Pernettyas, Broom, Olearia Haasti, Tamarisk, Cornus, Hollies, and Cydonia japonica.

Black Poplar (*Somerset*).—Populus nigra is the common black Poplar and is grown extensively in all tree nurseries. Its catkins are produced in spring before the leaves. It is the Plane that is planted so freely in the London streets, the catkins of which are produced on the leafless twigs.

LATE REPLIES.

Chrysanthemums—size of pot for flowering decorative varieties (*Anxious*).—So much depends upon the time you commence propagation. The earlier you start the larger will the plants be, and it is wise, therefore, to give the largest plants more room than the smaller ones. Late-struck plants will flower very well in 8-inch pots, while those propagated earlier in the year should be flowered in 9-inch pots. In a few instances, as seen in varieties with extra vigorous root-action, 10-inch pots, if the plants be large ones, will not be too commodious. The materials you mention should keep until you want them.

Chrysanthemums — eight dwarf Japanese for exhibtion (*T. W. W.*).—Your glass-house, being of small dimensions, has induced us to compile a list of plants which you should have little difficulty in housing when the proper time arrives. Sorts which are difficult to bring to perfection are not included, so you may commence with the prospect of getting blooms of good quality when the shows again come round. Mons. Hoste, rosy-white, faintly suffused yellow; Mons. Chenon ne Léche, a beautiful shade of old rose, quite distinct; Emily Silsbury, white, a very easy sort to grow; Louise, pale flesh-pink, very dwarf; Australian Gold, pale yellow; Phœbus, clear rich yellow; Mutual Friend, pure white; and Viviand Morel, a beautiful silvery-mauve. If you feel disposed to add one other variety, by all means include Chas Davis, a bronzy-yellow sport from the last-named sort. As you state you are a beginner, special care has been taken to confine the selection to those we feel sure you would get good results from.

Chrysanthemums (*Francis James*).—Your bloom is too poor for us to recognise it as Etoile de Lyon or a white sport from that variety. The flower sent us is unlike that variety in form, and we think you must have made a mistake. There are many better white sorts for late work.

Chrysanthemum Edwin Molyneux (*Mum*).—Yes; in growing this variety, when the May break is made, we prefer to take up three stems, and growing these on vigorously until the early days of July. The point of each shoot is then taken out, and the resulting shoots (the strongest one on each of the original stems) grown on, and the next bud appearing retained. You should get splendid flowers of this variety by these means.

Cutting down worthless Peach-trees.—I took a house on a lease from June last, and in the garden there is a Peach-house containing nine very old Peach-trees, so badly infested with mealy-bug that experienced gardeners advise that the only thing to do is to cut down the trees and burn them. Some are already dead, but my landlord will not allow me to cut them unless I plant new ones. Can I do away with the trees and use the house for other purposes? My lease contains no mention of shrubs and trees.—T. W.

*** You may cut down the dead trees, but should you cut down the living ones your landlord might at once bring an action for waste; and although you might prove that no damage was done because the trees were actually worthless, you might have great difficulty in giving such proof. Should you use the house for other purposes you must not so alter or use it as to render it incapable of being used as a Peach-house at the expiration of your lease.—K. C. T.

GARDEN PESTS.

Cyclamens unsatisfactory (*Thorncliffe*).—Your Cyclamens are attacked by the grubs of the Black Vine-weevil (Otiorhynchus sulcatus), a common and most destructive pest to these plants, and one for which there is no remedy known except picking them out from the roots of the plants. The only practical means of prevention is to kill the parent weevils, which feed on the leaves of various plants. They are particularly fond of the foliage of Vines and Ferns. As they only feed at night they should be searched for after dark with the aid of a lantern. A white sheet should be spread under the plant so that the insect may be easily noticed if it falls off as soon as it sees the light, as they often do. They hide so cunningly during the day that it is almost impossible to find them. They may be caught by tying small bundles of Moss, hay, or straw on to the stems of the plants they are feeding on, as they will hide in such places during the day. The beetles are about ½-inch long, and of a very dark brown or black colour.—G. S. S.

Diseased Violets (*C. L. C.*).—Your Violets are attacked by a fungus (Urocystis violæ). I should at once look the plants well over, and pick off every leaf, runner, or part of the plant that shows any sign of the disease. Later on the skin of the swollen leaf will burst in places, and a number of black spores will be emitted, which may get on to sound plants and infect them. Be sure and burn the parts you cut off, and if any plant is very badly attacked that had better be burnt, as it cannot be of much further use and is a source of danger.—G. S. S.

Wireworms (*T.*).—We cannot find any reference to wireworms in GARDENING of the 4th of December. Of course wireworms would not increase if there were no parent beetles to lay eggs, and under such circumstances they would no doubt decrease; but I do not see the necessity for the beetles going "elsewhere to lay their eggs," though many of them no doubt would, but I do not see that it is a matter of course that they should.—G. S. S.

Some Pelargonium flowers not opening well (*Devon*).—Zonal and other Pelargoniums often open indifferently from two causes: not sufficient water at the root, and a chill or check from cold or changeable temperatures. Although they need very little water at this season, growing roots must not be over dry.

MANURES FOR GARDEN CROPS.

Questions are constantly being asked in regard to the diverse forms of manure in commerce and use, to their fitness respectively for various crops, and also as to best methods of application. To all such queries, unless very precise detail be given, it is practically impossible to furnish exact or even at all satisfactory replies, for the obvious reason that, except by practical knowledge, it is difficult to arrive at any correct conclusions as to the condition of the soil it may be proposed to manure, and which may, perhaps, need other treatment. Manurial applications may be, of course, referred to generally; but in individual cases it is most difficult to advise clearly. Manures are composed of diverse materials; but indeed anything that contains matter capable of solution in moisture, and necessary to plant life, becomes a manure. Thus all forms of animal excreta, alone or combined with vegetable matter, such as straw, Grass, Moss-litter, etc., are manures, because these give back to the soil the products that the crops causing them have taken from it. Animal manures are of the oldest use, and most generally applied; but they differ appreciably in quality. Thus it is found that the very best is obtained from horses, because these animals are so largely fed on corn, and this material contains phosphates and potash very largely. The product of cows and pigs—their food being almost exclusively Grass or green material or slops—is largely nitrogenous, and deficient in the other elements. Fowls, pigeons—indeed, bird-manure generally is rich in mineral substances, because their food is so largely of seeds. But, on the whole, horse-manure contains elements of fertility in the best form. This, however, is so habitually allowed to waste from exposure or fermentation that too often when applied to the soil it has lost 50 per cent. of its fertilising properties. Where practicable, it is best to apply horse-manure to the soil when gently heated—that is, kept turned in a heap as it accumulates for a few weeks, not allowing it to become hot fermented, and then in that condition the longest straw being removed, dried, and again used for litter or covering is then applied to the soil and dug in. Where it is not practicable to utilise manure at once, then it is better to spread it over the surface of the soil amongst crops to wash in, the fibre to be dug in later, or else to stack it in a square heap as dry as possible, and cover the top with a roof of soil. So cared for, there will be no waste but of moisture, and that can be replaced in the autumn or winter, when occasion offers to dig it into the ground. All animal manures should not be allowed to waste in any way by exposure to washing rains or by fermentation, as in the latter case fertile elements are converted into ammonia, which, thus liberated escapes freely as offensive effluvias too plainly tell. Animal manures are quick-acting or otherwise, according to their condition and the nature of the weather, as in no case can these or artificial manures be used when the soil is very dry. Those manures that become soluble slowly in any case do help materially to feed successional crops, a matter that, in estimating the relative values of animal and artificial manures, is too frequently lost sight of. Green manures are excellent dressings for soil, but not sufficiently utilised; these anyone who has ground can always obtain for themselves by sowing seed thickly of anything suitable. How often is there seen in gardens bare areas of ground from which have been taken late Peas, Onions, Potatoes, or other crops; these spaces lie fallow and useless all the winter. Unhappily, it is not recognised, but it is a fact that soils so left, whether dug or not, are really losing fertility than gaining by rest, as is the common supposition. Were these areas left free of ordinary crops in September, if they be but lightly pointed over a few inches, and at once sown with a mixture of Tares and Rye or Oats, the best of all green crops, or with Turnip or Mustard or Rape, or with almost anything that will grow quickly, such crops will keep the soil more aërated than if left fallow. They will absorb from the atmosphere elements of fertility, and when dug in, with or without a small dressing of animal manure or of artificial manure, will leave the soil for the reception of a crop in the spring far more fertile than otherwise would have been the case. Every vegetable element in a garden should be carefully collected and allowed to decay in a heap, but later dug in as manure, and in some cases it is the rule to always keep open a trench, from 3 feet to 4 feet deep and 3 feet wide, and into this to bury, as it is obtained, all garden refuse of every description, as in that way soil is wonderfully deepened and fertilised. Practically manuring consists of returning to the soil what has in vegetable or other form been abstracted from it, and therefore it is hard to say what is not manure. Burnt wood, or vegetable fibre giving wood-ashes, becomes most excellent potash manure; soot, product of combustion, is good manure also. Artificial manures, so-called, are best obtained in a raw or unused state. Practically these comprise phosphates, in the form of crushed or dissolved bones, ground coprolites, and basic slag, or Thomas' phosphate powder. Potash is found in Kainit and carnallite salts, also in muriate of potash, and nitrogen in nitrate of soda and sulphate of ammonia. All these elements are found in good guano, and should be so equally in good mixed compounds. All manures of this nature depend for their manurial value—their only test—on the percentage of plant food, as found in phosphates, potash, nitrogen, etc., they contain in soluble matter, such as ash or sand, may add to bulk and weight, but nothing whatever to manurial value. One reason why these manures are best purchased separately and raw is that while phosphate and potash, being slowly dissolved, should be, as a rule, applied to soil when prepared for the reception of seeds or plants at any time of the year, but, of course, only just before cropping takes place. When that is so, the manures are available just about the time the crop has become well rooted, and at once capable of utilising the manure. It is of the first importance that plants in a young state should get a good start, as they invariably do far better afterwards than if their early days be expended in a struggle for food. Nitrogenous compounds resemble salt, and once applied very rapidly dissolve. Thus it is more economical to apply these to crops after they have become well rooted. Thus, nitrate of soda, applied to growing crops when established in May, June, or July, in such moderate quantities as 3 ounces per rod, being first well pulverised and then hoed in at once, will do great good; so also will a lighter dressing a few weeks later. Such dressings may be also applied to autumn crops if needed. It is when thus applied that plants utilise the quickly dissolved nitrates at once, whereas, if applied with the other minerals they would be washed away by rains ere the plants could utilise them. An average dressing of compound manures should not exceed from 5 ounces to 6 ounces per rod; but if the ground be poor, and the crop does indifferently a further dressing may be hoed or forked in several weeks later. A good deal of judgment is needful to enable the properties of all manures to be fully utilised.

A. D.

VIOLET CULTURE.

Being successful in growing these fragrant flowers, a few remarks on their treatment may be interesting. During the growing season Violets are very subject to red-spider when grown in a dry, sunny position. As a preventive against this destructive pest they require a partially-shaded border, as the red-spider is rarely found in such places. A border under an east wall is preferable, and should be prepared in winter. Give a heavy dressing of cow-manure, equally scattered over the ground, and dug in, turning the soil up roughly for frosts to sweeten. About the second week in May the soil is forked over and broken finely, 2 inches to 3 inches of riddled leaf-mould being scattered over the ground and worked into the surface. If a light soil it is essential to make firm with the foot and then rake smoothly.

The young stock is then planted out on the prepared ground a foot apart each way singly. Great care should be taken in selecting the young plants, as the future success greatly depends on this. Good rooted runners with single crowns are the best. If the parent plants were properly attended to in April by laying in some good compost amongst them, and watering freely to encourage the runners to make roots, in May they will be well rooted, as above described. During the growing and flowering periods all runners are cut off, and the surface of the ground well stirred between them. By September they will be strong plants, producing flowers abundantly. The second week in September is the time to remove them to their winter quarters. The cold-frames are prepared by filling up with some good rich compost of a porous nature, and made firm, in order that the soil may not settle down too much, because it is necessary that the plants should be near the glass.

Lift the plants with good balls of soil to their roots, and plant them in the frames about 10 inches apart each way. Water freely, and keep them free of dead leaves and suckers. No lights or protection are placed over them until frosty nights set in, and then it is necessary to give plenty of air during the day. When so treated the plants are sturdy, strong, and healthy, and will continue to bear flowers till April, at which time the runners are not cut off, but treated as already described. It is not advisable to grow too many varieties, but only a few good sorts. The following are good, useful kinds: Comte Brazza, Duchess of Edinburgh, Victoria Regina, Marie Louise, and Princess of Wales.

G. S. Macdonald.

Poltalloch-gardens, Argyllshire.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2473—**Treatment of Roses** (*C. Reedham*).—We shall be having a lengthy article upon pruning Roses in due course. Please look out for that. You should not cut your plants before early March, and then only a very little. Your plants have done remarkably well to make such good growth in so short a time upon their own roots.

2474—**Tuberous Begonias** (*Begonia*).—We think you must have kept the present batch of seedling Begonias dark too long, and so drawn them up. The tuberous-rooted section soon form minute tubers, but the others do not. You do not say if the first batch were tuberous-rooted.

2475—**Propagating Cupressus** (*South Devon Amateur*).—It is much too late in the season to propagate the Cupressus. You do not say which of the many widely differing species and varieties you mean. See our issue for August 14, in which is an illustrated article upon the propagation of evergreens.

2476—**Syringa in pots** (*South Devon Amateur*).—We are a little doubtful whether you refer to the Syringa proper—*i.e.*, the Lilac—or to Philadelphus coronarius, often called Syringa and Mock Orange. Both may be grown in pots, and if placed in an ordinary conservatory will flower about April. The precise time depends upon the heat supplied.

2477—**Mildew on surface of soil** (*Devon*).—We hesitate in giving causes of the mildew surface of your soil. There may be so many reasons. Do you use any bone-meal with the compost? That is a frequent cause. Stir over the surface a few times. We do not think it is injurious, unless it may be a fungus. Could you not send us a small sample and give fuller details of the mixture?

2478—**Weedy walks** (*Barnet*).—Your walks need to be well dressed with some weed-killer. If you object to use that, you may destroy weeds and Moss by drenching the walks with boiling water. Also, you may turn the gravel and bury the surface 3 inches deep, bringing fresh to the surface. You may, if you care to get up enough of heat—some 60 degs.—sow Tomato-seed at the beginning of next month; but if your house is a vinery, you will start the Vines growing also, and March would be soon enough for that, as the Vine-shoots want ample light to strengthen them

2479—**Magnum Bonum Potato** (*L. B*)—The raiser of Magnum Bonum Potato, was a grower named Clarke, who resided at Christchurch, Hants. He found a couple of seed-apples on Early Rose Potato in his garden, and thought the flowers which produced them had been fertilised with pollen from other flowers of the old Victoria He raised a batch of seedlings, and the best one was named Magnum Bonum.

2480—**Treatment of "Mimosa"-plants** (*Acme*).—A winter temperature of 45 degs. to 55 degs. will be ample. Do not give too much water, but see they are not actually dry. Early in February pot them on into the following compost: Peat and turfy loam in equal proportions, with a little thoroughly decayed leaf-soil and coarse sand. Pot firmly, and drain neatly and well. The temperature may rise to 60 degs. and 65 degs. as the plants progress, and while growing they will need more water and a rather moist atmosphere.

2481—**Cutting back Stephanotis** (*A Constant Reader*).—You must not prune the Stephanotis. It is the long growths you have now that will flower from the axils of the leaves. If you cut away these growths you sacrifice blossom, and merely get more flowerless wood of the same character. Allamandas should be pruned in January or February, cutting the previous year's shoots back to within two or three joints of the old wood.

2482—**Impatiens Sultani** (*Sultani*).—This is a very easy plant to grow. During winter it needs a temperature of 55 degs. to 60 degs. Young growth roots very freely early in the spring. Do not grow in too large a pot. This is one of those plants which thrive best when the roots are partly restricted. Give a rich compost. Leaf-soil and good loam in equal proportions, with a little well-decayed manure and coarse sand, makes a good compost.

2483—**Agreement for ground** (*Liverpool*).—Unless you have a properly drawn and signed agreement, also duly stamped by an impressed stamp at your local stamp office, it will be worthless in case of dispute arising. It should suffice to say that one, as owner, on the one hand, and you, as the tenant, on the other, "Hereby agree that all trees or bushes you may plant on the said ground or garden, during your tenancy, shall be yours absolutely for removal or disposal at any time, on the termination of the tenancy, the owner making no claim whatever on the said trees or bushes." Both should sign in presence of a witness, who also signs, and then the agreement must be duly stamped.

2484—**Lime dressing** (*F. J.*).—A lime dressing can hardly fail to do your stiff soil much good. Except where chalk prevails it is rare that soil is overdone with lime, and this is really a valuable food constituent for plants generally. Still, it will be unwise to employ it too freely. Give at the rate of 1 bushel to 3 rods, as the lime is slacked, although it will have, no doubt because some time slacked, lost some of its pungency. If you cannot properly use it all now, it may be as well to sell the surplus to someone who has land also needing dressing. Dry slacked lime dressings are very useful in the spring when slugs are troublesome. It should then be dusted freely about late in the evening, as, if fresh, it kills these pests rapidly.

2485—**Grafting Plums** (*Snip*).—The proper time to graft Plums is in March, and the stock most generally used is the common Plum. The stocks should be cut down to within a few inches of the ground, and the scions should be about 4 inches in length, and taken from well-ripened wood of last year's growth. With a sharp knife make a clean cut about 1½ inches long, and then a cut of the same size should be made in the stock, and when the scion has been placed in its proper position it should be tied with matting, and a little grafting wax or a mixture of cow-dung and clay should be placed over the matting to exclude all air.

2486—**Pruning Peach-tree** (*T. B*).—You may prune your Peach-tree at once, cutting out all branches that seem to be bare of fruit-buds, and tying in those shoots that have them well-plumped up. In pruning always cut a branch or shoot hard back, not leaving snags, also making the cut very clean. The best of solutions for cleansing trees and houses of red-spider are found in 1 lb. of caustic soda and 1 lb. of commercial potash, obtained from a chemist, dissolving these in 10 gallons of water, and syringed over trees or Vines whilst quite hot, also into the crevices of the house; as in such places the insects hibernate or deposit eggs.

2487—**Wall Plum-trees** (*A. C. G.*)—The laying-in of the summer shoots on wall Plum-trees that are kept for producing fruit, should have been done at the end of the summer to promote ripening. However, you should do so now, but only a few of the strongest. Do not attempt to lay in any that break out from the front of the main branches, only from the sides. Cut all others hard back. Generally Plums fruit from spores, though also from well ripened young wood. Of the shoots nailed in, shorten back one-third at least. Cut back to about two buds or eyes all other shoots. With Plums the wood must not be so thickly laid in as with Peaches and Cherries. Do not allow clustering shoots to form and project out several inches from the tree.

2488—**Heating a greenhouse** (*Flue*).—Flues are out of date for heating greenhouses. They give a dry, parching heat, and waste a great deal. The same fire used in a small coil boiler is doubly effective, as well as avoiding the dry heat so injurious to most plant life. One of the Hygienic heaters would be just the thing for your small house, and would last a long time, needing very little attention. It is one of the most effectual and cheapest methods of heating small houses that we are acquainted with. Do away with the flue, and you can then plant a Rose with safety; otherwise the flue will surely harm the Rose, the roots being scorched at one time and cold at another.

2489—**Manure on Strawberry-bed, Roses, etc.** (*Harrow*).—Leave the manure on top of the ground between the Strawberry plants, but on the crowns. Strawberries should never be dug. They are surface-rooting plants and enjoy a firm soil. The Jackmani Clematis may be cut down now; and the Honeysuckle pruned either now or early in spring. The Roses you name are suitable, but Amazone and White Lady, are poor growers. Fortune's Yellow will need a very warm position. We would prefer G. Nabonnand, Kaiserin Augusta Victoria, and Lady Penzance in place of those three.

2490—**Mushrooms in lean-to Cucumber-house** (*W. J. Buttress*)—Provided you can arrange so as to keep your staging fairly dark, you have a good place for Mushrooms. Collect the manure and store in a dry shed until you have sufficient. Turn it about three times a fortnight, and let the fresh droppings be mixed in each time. If very hot when making up the bed, add a little pasture loam. With the heat at your command you can afford to do this, but it would not be wise without the additional fire-heat. A foot deep will be ample. Make the bed firm, cover it with a little good yellow loam, set the spawn and beat all down once more. You must bear in mind that your bench will be rather dry, and water accordingly. You must find some way of keeping the manure from excessive moisture during the time you are collecting the desired quantity.

2491—**Gas-lime dressing** (*Pea-picker*).—The later in the winter gas-lime has to be applied to the soil, the lighter must the dressing be; but light soils need fewer applications of this nature than do heavy ones, unless there be club-fungus or club-beetle in them. If you really think that a dressing of lime is needed to furnish a mineral of which the soil may be deficient, why not give a dressing of fresh lime, as that may be applied at any time? Put down in heaps of a bushel to each 2 rods, unslacked lime, and cover over with soil. When presently it has heated and is unslacked, then spread it, mixed with the soil, evenly over the ground, and dig it in. A good dressing of fresh soil is also excellent manure for crops. If your soil be poor, a good dressing of animal-manure will do most good, especially if you have the soil deeply trenched, or, at least, well dug.

2492—**Firing for flue** (*Appren'ice*).—Earthenware pipes to form a heating flue to greenhouse are full of dangers. Should one crack or a crevice occur in a joint, allowing burnt air and smoke to escape into the house, the effect on the plants is most destructive. It would be unwise to use as fuel anything, like steam coal, that gave a rather fierce heat. Good, well-broken coke or coke breeze is best, but in banking up the fire at night a small quantity of very fine coal may be added. It is necessary to have a clean furnace daily, that the whole should be drawn each morning and relighted. Were that not so, the furnace would get sadly clogged and choked. Whether a damper in the chimney may be useful or not depends on the general draught; but we rather infer that the draught is not excessive now, and a damper may so deaden the draught that you will get no combustion. The drip creating a little vapour will rather do good than harm.

2493—**Planting fruit-trees** (*W. A.*).—The large tree at the bottom of your garden can hardly fail to over-shadow and greatly injure that part. The roots will, in spite of the pruning given, soon eat up the soil, and starve bushes or other trees. For that reason, we fear that Currants trained to your ash-pit wall would do poorly, being so much shaded. Were there no tree, a Morello Cherry might do well on that wall; certainly Currants would. The Plum-tree would do better in the shade than the Cherry. Why plant the latter at all? A Rivers' Early Prolific and a Victoria Plum would be best; or you may let one be a Farleigh Prolific Damson. Your Gooseberry and Currant-bushes may be shifted to the back part of the garden, though they are best in the sun. It will not do to exclude sunshine from the Pear or Apple-trees. You should lop the large tree you have very hard indeed; but it would be so much better to have it removed altogether. As it is, your garden seems to be too much shaded by houses.

2494—**Mildewed Grapes** (*F. W. W.*).—If your vinery is heated by pipes or brick flue, get milk or soft-soap solution, stir into it flowers of sulphur, then get the pipes or flue hot with a fire, and when so heated well wash the pipes or brickwork with the mixture, kept well stirred; then, so soon as done, shut up the house close for twenty-four hours. Also prune your Vine hard back to good buds near the main stems; then well wash the stems with a soft-soap solution, and whilst damp dust the wood thickly with sulphur. Well lime-white all the brickwork, thoroughly clean glass, and, if possible, paint woodwork. Have all the trimmings burnt. Next spring and summer, should mildew appear, heat pipes, and wash with sulphur-wash, as advised. This is cleaner and more efficacious than dusting the Grapes and leaves with sulphur.

2495—**Sawdust-manure** (*C. W. M.*).—We should hesitate to advise the free use of sawdust-manure, as it seems to promote by its decomposition the production of fungus. We should very much prefer street-sweepings to help to lighten your stiff soil. This material includes much animal-manure, fibre, and dust or grit, all very helpful, and, to some extent, manurial. Certainly use peat-Moss-manure when you can obtain it, and if you can spread some of this over your spare ground now, and also street-sweepings, ready for digging in early in the new year, it would do your soil great good. If you would prefer, use some of the sawdust-manure on a separate plot of ground by itself, and then note result. Strong soil, however, does not want over-manuring.

2496—**Wallflower** (*St. Mary's*).—There are several colours in Wallflowers, and no doubt you may easily obtain at a moderate price sturdy plants, to bloom in the spring, of the blood-red and tall and dwarf yellows. Still, as these bloom early, it would have been so much better to have had the plants well established ere this. Seed is cheap, and if you purchase in separate colours and sow the first week in May outdoors, keeping the soil just moist until the seed has well germinated, you should, two months later, have plenty of young plants to put out where they would be wanted to flower. You can have blood-red, buff, or brown, tall and dwarf yellow, and Primrose, and there is a new very early strain, seed of which, sown in March, will give plants to bloom profusely during the late summer and autumn. The flowers are of brownish-buff colour.

2497—**Euphorbia splendens poisonous** (*Medico*).—We have no personal knowledge of the character of this plant in regard to its poisonous properties, but in the "Treasury of Botany," p. 477, it is mentioned. "The milky juice which forms one of the constant characteristics of these plants contains active medicinal properties. Hence in all countries where they grow some of them have been or are employed medicinally. The most important of them for this purpose are some of the succulent ones, which furnish the drug known as Euphorbium. The drug is procured from Barbary, where the natives are said to make incisions into the branches, in consequence of which the milky juice exudes. This is so acrid, that it excoriates the hand when applied to it. Euphorbium is an intensely acrid substance which severely affects the eyes, nose, and lungs, of those who come in contact with the drug in its powdered state, if the greatest precautions be not taken. From its violent action it is now rarely if ever used in medicine, but it was always employed as an emetic, purgative, etc, and externally as a rubefacient." E. splendens was introduced from the Isle of France in 1826.

2498—**Diseased Mushrooms** (*W. H.*).—Your diseased Mushrooms we found on opening the box to emit a most offensive smell, and they were soon consigned to the ash-heap. It is very evident that funguses themselves are the prey of yet some other fungus of a destructive nature, producing in them, and probably in the same way, just the effects found on diseased Potatoes produced by the Potato fungus. The parasite not only eats up the fleshy matter of the Mushroom, but also destroys cellular tissue, and hence follows rotting or decay. It seems to us probable that the disease is due to improper manure. That your spawn was healthy and good we have no doubt. If, however, the manure from which the bed was made contained any horse excrement that was produced by medicine, or resulted from any internal cause other than healthy action, such a description of disease as you show samples of is certain to be produced. Expert growers invariably avoid using manure of this soft nature. The very best is that obtained from healthy, corn-fed horses. Animals under medicine should be stabled separate from the healthy cattle, and their manure kept separate also. Worse material than this manure given to Mushroom-beds can hardly be found. That you have some sound Mushrooms indicates that the manure is not wholly bad. You may try the use of some slacked lime, dusted over the affected parts, but we fear there is little chance of finding a remedy. Whenever the bed is removed thoroughly cleanse the place where it was, and give brick or woodwork near a thorough washing with hot lime-wash.

2499—**Begonia Gloire de Lorraine**.—How shal I treat Begonia Gloire de Lorraine to grow it to perfection winter and summer? The treatment given in your valuable paper would greatly oblige.—ARTUS.

*** *This winter-flowering Begonia needs no special treatment. Give it a compost of leaf-soil and rich turfy loam in equal proportions, and an ordinary greenhouse temperature. None are more easy to grow than Gloire de Lorraine and Gloire de Sceaux.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*C. J. C.*—1, Asplenium bulbiferum; 2, Phlebodium aureum; 3 and 4, Crested forms of the Hart's-tongue Fern (Scolopendrium vulgare).——*M. G.*—Your plant appears to be Habrothamnus elegans. The extreme point of the piece sent is showing for flower. Do not prune again now, and if you keep it fairly warm and well watered you should get some pendulous racemes of crimson blossoms during the very early spring. They are not much grown now, but make capital pillar shrubs for the conservatory.——*A. Manning.*—We cannot determine the name of the single leaf submitted. It may possibly be an Abutilon or some member of Malvaceæ.——*Mrs. Nicoll.*—Jasminum gracillimum grandiflorum. Syringing the Maréchal Niel Rose that is near to it is the sole cause of the brown spots. These pure white flowers are easily bruised, and the least thing discolours them. Syringe with more care, and apply from the side where the Jessamine is, so as not to bruise it.——*Patricia.*—It is not easy to name Chrysanthemums without their foliage accompanying the blooms. Varieties are so much alike. To the best of our belief, No. 2 is Mme. de Sevin; No. 3, Beaute Tolousaine; No. 4, Like an old variety of Phœbus; No. 5, La Triomphante; No. 6, Golden Christine; No. 8, Source d'Or; others not known.——*F. T. L.*—The name of your Orchid is Cœlogyne Gardneriana.

Naming fruit.—*Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name six varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, London, W.C.*

Names of fruit.—*H. K. A.*—The red Apple is Emperor Alexander; the other, Minchall Crab.——*Salopian.*—Apple is Golden Spire; the Pear, Brown Beurré.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do no answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and addresses of sender.

B. B.—The case for binding this paper is eighteen-pence, the index one penny, and threepence extra for postage. All these may be obtained from the publisher.——*S. W.*—In our next.——*G. B.*—If you will kindly look through our advertisement pages you will discover those who sell Chrysanthemum-cuttings.——*A. H.*—Lygodium scandens.

Catalogues received.—*Garden Seeds.*—Messrs. J. Carter and Co., 97, High Holborn, London——*Seeds, Carnations, etc.*—Messrs. J. Veitch and Sons, King's-road, Chelsea.——*Vegetable and Floral.*——Chr. Lorenz, Erfurt, Germany.——*Trees, Roses, etc.*—Hogg and Wood, Coldstream and Duns, N.B——*Choice Chrysanthemums.*—H. Shoesmith, Claremont Nursery, Woking.——*Tree-seeds, etc*—Vilmorin-Andrieux and Co., 4, Quai-de-la-Mégisserie, Paris.——*Select Chrysanthemums.*—R. Owen, The Floral Nurseries, Castle-hill, Maidenhead.——*Fruit-trees.*—Messrs. Dickesons and Co., Waterloo-place, Edinburgh.

LAW.

Local surveyors and greenhouses.—I am erecting a greenhouse about 60 feet from the dwelling-house; it is wooden throughout, but rests on a layer of loose bricks. I propose to heat it with an independent boiler and pipes (no brickwork), the boiler to be placed in a galvanized shed attached to the greenhouse. Would you kindly inform me, through your paper, whether the local surveyor can interfere, and if so, what are his powers? I reside about six miles from London. An article in your paper, dealing with this much vexed question, would, I think, be generally acceptable and interesting to many of your readers.—A. B.

*** The powers of the local surveyor and of the authority appointing him may be so varied in different districts that it is impossible to give the desired information. As you reside six miles from London, the Metropolis Management Acts, etc., probably have no application; but there may be other local Acts in force, and even if there are not, yet the powers of the authority may be largely extended by adopting certain statutes or parts of statutes. And even if the authority have only such powers as are conferred upon them by the Public Health Act, 1875, the bye-laws adopted by one authority are not exactly the same as those of another authority. Then again, for certain purposes, such a building as your greenhouse may be a building within the meaning of one bye-law but not within the meaning of another bye-law. Without knowing what bye-laws have been adopted or what statutes are in force it is impossible to say what powers the local surveyor does possess, but this much is certain—he will have some power of control over the building you are proposing to erect.

Receiving sewage from cesspool into garden *(Eston).*—Before allowing the sewage to be discharged from the cesspool into a hole in your garden you ought to have obtained your landlord's assent, and in default he may probably give you notice to determine the tenancy. It does not appear whether the cesspool is situate in a public road or where it is, and as I have no idea what restrictions or covenants may exist between your landlord and the A. K. Building Society, I can only advise you to consult a solicitor.—K. C. T.

Entry during currency of half year—notice to quit.—I rent a house and about ½ acre of garden with greenhouse, which I occupy for the purposes of a market garden. I entered in May, 1893, and paid a quarter's rent in August, and since that date I have paid the rent half-yearly on August 2nd and February 2nd. Last February I received a year's notice to quit. Is the notice good, or should I have had notice to quit in May? If the notice is good, is it now too late to claim compensation?—Tomato.

*** Presuming that the holding is let to you upon a yearly tenancy (that is, at so much per year), and that you have no written agreement, I think the notice bad, as the tenancy will be deemed to have commenced on August 2nd. Notice should have been given on or before August 2nd last to quit on August 2nd, 1898. There may possibly be some evidence forthcoming from which a jury might find that the tenancy commenced on February 2nd, but it seems perfectly clear that the year of tenancy did not commence in May. If the notice had been a good one it would have been too late to now give notice of claim under the Market Gardeners' Compensation Act, as two calendar months' notice would have been necessary, and the last day on which the notice of claim could have been given would have been December 2nd.—K. C. T.

Windows overlooking neighbour's garden.—At the back of my freehold house and garden there is a piece of leasehold land which is occupied for business purposes. Can the leaseholder erect a house or stables close to my boundary and place therein windows overlooking my garden and put up signboards, etc.? Would such erections make any difference to me if I subsequently desired to build on my property?—Anxious to Know.

*** The leaseholder may erect anywhere upon his land such buildings as he chooses, and may put in those buildings such windows as he thinks proper. Your remedy is to erect a hoarding or build a wall in front of the windows, so as to block the light to those windows and to hide the signboards, etc. from view. You may do this at any time within twenty years, but it will be very foolish to delay so long. After twenty years your neighbour would have gained the right to the unobstructed access of light to the windows, and if you then wished to erect any buildings near your boundary, you perhaps could not do so without blocking your neighbour's light, and he could then compel you to pull down the buildings or obtain heavy damages from you.

The rating of allotments.—A committee rented 10 acres of land and let it for allotment gardens in holdings varying in size from 1 acre to 1-10th acre. For four years the committee have been rated to the local urban district rate on the one-fourth scale, in the same way as agricultural land, etc.; but the rating authority say they have acted by mistake in former years, and now require us to pay on the same scale as houses and buildings. What is the law on the matter? Is there any special Act relating the rating of allotments?—Lemington.

*** The urban council are wrong. By the Allotments Rating Exemption Act, 1891, section 211, subsection 1 of the Public Health Act, 1875, is to be read and construed as if the word "allotments" was inserted in the section after the word "woodlands." By the same Act "allotment" means any parcel of land not more than 2 acres in extent and let as an allotment, and cultivated as a garden or a farm, or partly as a garden or partly as a farm. The effect of this Act is to render allotments rateable to the district rate in exactly the same way as woodlands or arable meadow or pasture ground, tithes, market gardens, etc., are rateable. It is immaterial that the committee pay the rates; but if the urban council take the view that because the committee are rated and the area for which they are rated is too large to claim the benefit of the above Act, the easiest way of dealing with the question would be for the committee to refuse to pay the rates and to give notice to the persons making the rate to rate the actual occupiers. The committee could still return the allotment holders the actual rates paid by them individually—that is, return this when the rent is paid over, and so put the council to additional trouble. The committee should refer the council to the Act already quoted, and if the matter is not satisfactorily settled querist may write us again.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.

The seventh annual dinner of this association took place in the Venetian Chamber, Holborn Restaurant, on Thursday evening last, when nearly two hundred members, both ladies and gentlemen, were present. The president, Mr. T. W. Sanders, occupied the chair, and was supported by Messrs. Geo. Gordon, J. T. M. Dougall, H. J. Jones, Norman Davis, D. B. Crane (deputy chairman), A. J. Rowberry, H. A. Needs (treasurer), Leonard Brown (hon. secretary), and other well-known horticulturists. After the usual loyal toasts the chairman proposed the toast the "National Amateur Gardeners' Association and its Affiliated Societies." In doing so, he dwelt upon the good work being done by the association in creating a love for gardening. Mention was made of the excellent work accomplished by the branches and affiliated societies in many parts. A special feature of the evening's entertainment was the presentation of the trophies and challenge cups won during the year, together with medals offered for highest aggregate points during the year's exhibitions and for special subjects. The chief winners under this heading were Messrs. J. W. Jones (who was foremost), H. A. Needs, H. M. Vokes, Mrs. Morris, J. T. Dougall, and Miss Amy Harman. The honorary secretary proposed the toast "The Trade and Donors of Trophies and other Prizes." Mr. Chas. E. Green proposed the toast of "The Ladies." To this toast Mr. F. G. Swales, the hon. assistant-secretary, replied. Mr D. B Crane paid a high tribute to the "Press" for the great service they had rendered the association since its inception. The question of "What constitutes an amateur?" was specially alluded to. Mr. George Gordon replied to this toast in appreciative terms, saying how pleased the "Press" were to do all that was possible for the association. He concluded by proposing a toast to the chairman. Mr. Frank Cant promised a Rose trophy for next season, and Mr. Norman Davis also assured those present of his intention to do something next year. The trade had very liberally responded with their offers of prizes, trophies, etc., and included Messrs. Sutton and Sons, J. Carter and Son, H. J. Jones, Barr and Sons, J. Cheal and Son, and others.

POULTRY.

Poultry questions *(O. F.).*—The egg production per annum varies with the breed and the strain or family of that breed. As a rule, sitting breeds lay much less than the non-sitters, because so much time is taken up in broodiness on the nest. On the other hand, the non-sitters, for the most part, enjoy a long rest in the winter. Speaking roughly, the heavier varieties—that is, the sitters, should lay about 120 eggs per annum; the non-sitters may go as high as 180 or even 200; whilst a cross between the two would take a midway position or thereabouts. Eggs are generally laid in batches, the hen taking a rest between to recoup herself, and, as a rule, hens in their second season and subsequent years do not lay between November and February inclusive. There is no certain sign of distinguishing an old hen from a young one beyond the aged appearance which is generally present in all fowls beyond the pullets of the year. A pullet is very neat about the head, and clean in her legs and feet; an old bird is coarser in both respects. There is really no safe plan of hastening the laying of pullets beyond hatching them in March or April, and feeding generously in September and October. Comfortable housing throughout the winter is most essential, and this applies as much to shelter from rain in the daytime as to protection from the cold at night. I do not think it likely that your five months' old pullets will lay until February at the earliest—more probably March—no matter how you feed them. If they were mine I should keep them in fair condition, and not force them in any way. They are really too young for winter layers, and I consider it possible that undue forcing such birds results in unhealthy offsprings, and I believe this state of things may account for the unsatisfactory stock birds met with in so many yards at the present time. It may be well to point out once more that there are good and bad laying strains of most breeds of fowls, and those people who are desirous of getting really good layers should put egg-production in the forefront of the requirements to be found in their stock birds. Exhibition fowls, or those bred from exhibition stock, are almost sure not to possess good laying properties, simply because they are bred for something else.—Doulting.

BEES.

Judging comb and extracted honey *(Honey S. K.).*—The points to be considered in honey judging are flavour, condition, density, colour, bouquet, and form shown. The sections should be quite filled, the comb being well attached to the top, sides, and bottom, while it is so joined to the wood that it can be cut out without damage to any of the honey-cells. All should be evenly and regularly sealed, presenting a level surface and betraying no signs of an ill-fitting separator, delicate in colour, and dry. All honeycomb should be uniform in style of work, quality, and colour in each exhibit. The flavour should be full and palatable, condition clear, free from sediment, and of even consistency; in density, free from appearance of candying, and in colour a deep amber. Although thinness of capping is a point of perfection in comb-honey, from the judge's point of view, on account of its superior appearance, there are objections to it, as thinly-sealed honey is difficult to pack for transit, does not keep well, as after being stored for a time the honey will ooze through the cappings, and present a by no means inviting appearance. Although pure honey is very liable to become candied when placed in a low temperature it should not be exhibited in that state. The honey within the

comb should present when held to the light a bright and transparent appearance. The wood of the sections should be clean and free from propolis; oftentimes the beautiful white comb-honey is greatly marred through the propolis being allowed to remain upon the section. The extracted honey should be exhibited in clear jars containing 1 lb. each, and glass stoppers used, or corks covered with metal capsules. But, best of all, are white metal screw-caps, used over pieces of cork dipped in melted wax to avoid leakage. It is advisable that each honey-jar should be provided with a label stating the source from whence the honey was gathered. The glass of these jars should be perfectly clear, otherwise the appearance of the honey is spoiled, although there is a great variety in the colour of honey, according to the particular flower from which it is obtained —that gathered from White Clover flowers being of a light straw colour; that from fruit-blossoms, of a beautiful orange; from field Beans, brown; from Heather and Ling, of a dark-reddish colour, which solidifies very quickly and is difficult to extract from the comb. In glass supers all combs should be fully worked out and built straight, all cells evenly sealed, the cappings being of a nice delicate colour. Wax varies in colour, and may be either pale yellow, deep orange, brown with a greenish tint, or dark brown, while the aroma should resemble that of honey. In judging honeycombs those containing or having contained brood should be disqualified.—S. S. G.

Moving hives of Bees *(W.)*.—It is usual in changing the position of hives to move them not more than 2 feet or 3 feet at a time, and that only on the days on which the Bees are flying, but this is necessary only during the working season. Your hives having been brought from a distance and placed in the garden so late as the end of September, you need not fear removing them to another part of the garden now; no risk will be run in doing so, the Bees having now settled down for the winter. We have frequently observed after moving a hive to a fresh position that the Bees on leaving do not start off at once for the fields in the usual way, but turn their heads towards the hive and fly in gradually increasing circles before taking their departure, evidently taking note of their fresh surroundings in order to be able to find their hive on their return. There is, therefore, less risk in moving hives at any time than is generally supposed.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

Medlar-jelly *(P.)*—Pick over the Medlars to see that they are quite free from grubs and blue-mould. Crush them with the hands, and weigh them, allowing a pound of water to each pound of fruit. Put the Medlars and water into a preserving-pan and boil quickly for half-an-hour. Then strain off the water, pressing the water out of the Medlars without any of the thick pulp. Weigh this water, and allow 1 lb. of the best cane sugar to each pound of water, and the juice of two Lemons. Bring quickly to the boil, stirring well all the time, until a little dropped upon a plate jellies. This will take about three-quarters of an hour. Pour into hot glass jars or jelly-moulds. Cover while hot, and keep in a cool, dry place.—B.

BIRDS.

"Birds, the free tenants of land, air and ocean—
Their forms all symmetry, their motions grace."
MONTGOMERY.

IN many respects birds are by far the most interesting subjects of the Animal Kingdom, differing, as they do so much, from the beasts, reptiles, and fishes in their wonderful power of flight, their charming faculty of song, the varied and often exquisite hues of their plumage, the ingenious, diversified, and, in some cases, elegant structure of their nests, and the tender and assiduous care which they manifest for their young. They also appear to me to have a special claim to be regarded with feelings of the kindliest consideration, for, unlike the beasts, which, at the first approach of man, either attack him or flee before him in terror, the birds of a newly-discovered or seldom-visited uninhabited region fearlessly flock round the voyagers who land amongst them and even appear glad to welcome them and desirous of "making friends" with them.

This naturally fearless and confiding disposition of theirs, before they have learnt by sad experience to become distrustful of mankind, is very prominently illustrated in Mr. Briton Riviere's fine picture of "An Old-world Wanderer," which was exhibited amongst the paintings at the New Gallery last year, and previously at the Royal Academy Exhibition in 1887.

The same tale is told in the records of more modern voyagers. Captain Cook, in describing one of the Palmerston Islands (an uninhabited group in the South Pacific Ocean, which he visited during his last voyage in 1776), writes:—"We perceived a great number of man-of-war birds, tropic birds, and two sorts of boobies, which were then laying their eggs, and so tame as to permit us to take them off their nests."

In the "Journal" of Lieutenant King, the first governor of the convict settlement on Norfolk Island (previously uninhabited), he states that when he first landed there in the year 1788, he "saw Pigeons, Parrots, Parroquets, Doves, and a variety of other birds in great numbers, and so very tame that they might be knocked down with a stick."

More recently, during the scientific voyage round the world of H.M.S. Challenger (from 1872 to 1876), so well described by H. N. Moseley in his "Notes by a Naturalist on the Challenger" (published by Macmillan and Co.), on going ashore at one of the uninhabited islands of the Tristran d'Acunha group, in the South Atlantic Ocean, Mr. Moseley found "Finches, Thrushes, Penguins, and other birds walking quietly about, and allowing themselves to be stoned or knocked over with a walking-stick without ever showing fear or getting out of the way." Proceeding still further south, to Kerguelen's Land, it was just the same. The birds showed no fear of the visitors,

"Nor, save for pity, was it hard to take
The helpless life, so wild that it was tame,"

as Tennyson wrote of a similar scene in "Enoch Arden." "Hosts of birds, notably the great Albatross, were dotted over the face of the land, immovable on their slightly-raised nests, from which a stick alone could drive them," while, in the valleys, great numbers of Teal, which were feeding on the seeds of the Kerguelen Cabbage, "came running to meet" Mr. Moseley, "like a flock of farm-yard Ducks." In their case, however, the feeling of pity of which the poet speaks was overborne by other considerations, and the trustful Teal soon found out how misplaced was their confidence, although Mr. Moseley declares that he felt half-ashamed as he shot them, under pressure of the urgent need of a supply of fresh provisions.

From all that we can learn in this way on the subject it is abundantly evident that birds are naturally disposed to be friendly towards man, and that they would gladly fraternise with him, if he would only permit them to do so. Even in this long-inhabited country of ours, where they are more or less persecuted everywhere by stone-throwing urchins, and even by some grown-up people, they are quick to perceive when one is inclined to be kind to them, and readily confide in anyone who habitually treats them well. The late Charles Waterton, Esq., a great lover and protector of birds, to whom he afforded a safe asylum by surrounding his demesne at Walton Hall with a very high wall, by his kindly treatment had them so tame there that even the hen Blackbirds (usually so timorous) allowed him to take them off and replace them on their nests without showing the slightest alarm, while at night an Owl (another usually shy bird) would often pay him a friendly visit. Of this he writes in his "Essays in Natural History": "This pretty aërial wanderer of the night often comes into my room, and, after flitting to and fro on wing so soft and silent that he is scarcely heard, takes his departure from the same window at which he entered. I own I have a great liking for the bird, and I have offered it hospitality and protection."

The British Isles are favoured in the great number and variety of native wild birds, of which they possess as many as 367 species—a large proportion of the 490 species which belong to Europe. Of our British species 123 do not occur in Ireland. Those which are common to both countries include some of the sweetest songsters in the world, the most wonderful of which is the Skylark, whose song lasts, on an average, about twenty minutes, during which he pours forth a continuous stream of melody, in which the sharpest ear cannot detect the slightest pause during which the bird could be supposed to take breath. How he manages to do this is not very easy to understand. The charm and animation which these songsters impart to the loneliest districts can only be fully estimated by those who have been in some country where song-birds are seldom or never heard. A friend of mine who spent some time in North America has told me how much he felt the absence of all our familiar song-birds there, where a walk in the open country was never cheered by a wild bird's music, while the unbroken silence and solitude of a Canadian Pine forest, even in midsummer, struck the visitor with an impression as of something uncanny and fear-inspiring. We should be grateful for and to our birds, and protect them so far as we can. Many of them are but fragile little creatures; their natural enemies are numerous enough, and the unremitting watchfulness of the smaller birds plainly indicates how incessant are the dangers to which they are aware that they are constantly exposed.

Besides the great variety and sweetness of the notes of our song-birds, there is equal variety and charm in the many-hued plumage of all our native wild birds. WILLIAM MILLER.

[This article will be continued in a subsequent number.]

Death of grey Parrot *(E. M. O.)*—The death of the bird sent for examination was due to intense congestion of the liver, which may have been caused through a severe chill, or from improper feeding; but as your feeding and treatment of it appear to have been quite correct, it probably contracted the complaint before it came into your possession. The purchasing of Parrots is a very risky matter, as, from the unhealthy way in which they are brought over, and the bad treatment they receive, newly-imported birds are subject to great mortality, the germs of certain diseases they have contracted on the way resulting in the death of great numbers of them shortly after their arrival. In his "Favourite Foreign Birds," Dr. Greene says, "There is nothing to be wondered at in the small percentage of grey Parrots that live after their arrival in this country, for, in addition to typhoid fever and diphtheria, which are already at work in their systems, owing to the treatment they have received, they contract bronchitis and inflammation of the lungs, and not one in a hundred newly-imported birds survive twelve months. It behoves the reader, therefore, in purchasing a grey Parrot, to be very careful to see that he is obtaining one that is thoroughly healthy and acclimatised." Unfortunately, it must be admitted that many people ruin the health of their pet Parrots by injudicious feeding. In all probability, the man you purchased the bird of was not aware of its being otherwise than in a healthy condition, especially as its appetite was good at the time; still, it was not wise to hang its cage out-of-doors in November, such a proceeding being likely to give the bird a thorough chill.

Treatment of Canary *(J. V.)*.—Give your hen Canary something to amuse it, and that will, by diverting its occupation, divert its attention from the bad habit of continually pecking at the wires of its cage. Cuttle-fish-bone is a most wholesome thing for cage-birds, and a piece placed between the wire of the cage would afford your bird healthy occupation in nibbling at it. Give also plenty of grit-sand and some old mortar at the bottom of the cage. Small stones in the gizzard are necessary in the work of digestion, and from lack of good grit-sand many birds in confinement pine and die. The need of grit may be the cause of your Canary nibbling at the wires of its cage. Do you keep your bird well supplied with green food? This should be given frequently, fresh, and in small quantities. Chickweed, Groundsel, Watercress, and Lettuce are all good for Canaries. If the above treatment does not prove effectual, it would be well to place the bird in another cage for a time; the change may cause it to break off the bad habit.

GARDENING ILLUSTRATED.

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ROSES.

ROSES IN AUTUMN.

The Rose is so often thought of simply as a summer flower whose season lasts for a few brief weeks, that its autumnal character is overlooked, and in the eagerness to have exhibition flowers, big, full, dense, and too often lumpy, which necessitate severe pruning and rich feeding, the merits of the queen of flowers as a garden plant solely for decoration is lost. In a Sussex garden the Roses were delightful in the autumn, just when the starry flowers of the Michaelmas Daisies were making clouds of colour, the plants healthy, vigorous, and carrying a profusion of buds in various degrees of expansion. Marie Van Houtte, with its flowers of various and charming shades, from the richest rose to the most delicate tints, was in beauty, also many of the newer Tea varieties, and it is when the plants are grown as bushes in a good soil and left to fight the trials of weather that we get hardy, robust, and healthy plants that give flowers in mild seasons until the eve of Christmas. Amongst the older varieties, Souvenir de la Malmaison is fit to rank amongst the finest of autumnals. It is a Bourbon, and lacks perfume — a sad failing in a Rose, in which fragrance is as dear to us as colour or form—but there is an indescribable beauty in the opening and expanded buds. The old variety Baroness Rothschild is again beautiful in the autumn, at a season when we often have the full richness of colour, unscorched by a hot, summer sun, of such old favourites as Charles Lefebvre, Dupuy Jamain, Auguste Rigotard, Alfred Colomb, Le Havre, General Jacqueminot (a universal Rose), Ferdinand de Lesseps, A. K. Williams, the delicately-coloured La France, Eugenie Verdier, Beauty of Waltham, Marie Finger, and Louise Van Houtte. The deep-coloured Hybrid Perpetuals, especially those of crimson and velvety-purple shades, have their tender petals burnt and disfigured by a hot July sun that spoils the outer petals of the Tea Roses, and deprives them of that delicate, refreshing fragrance and exquisite form that constitute their chief and enduring charm. Boule de Neige and the old Mme. Plantier, a Rose that can scarcely have too much praise, and the two good kinds, Annie Wood and Mme. Victor Verdier were strikingly beautiful in many gardens last September; also the old Gloire de Dijon, that surmounts the gables of many old-fashioned mansions, covering them with a canopy of flowers matchless in their delicate colour and sweet fragrance. Mme. Lambard, a variable and lovely Rose, gave a free display of flower, also such comparatively recent additions as Reine Olga de Wurtemburg, Ulrich Brunner, a variety that never fails, whether the season is good, bad, or indifferent; Sunset, a deeply-coloured sport from Perle des Jardins; Dr. Grill; Sappho, a very delicately-coloured Rose, buds fawn-coloured, flushed with rose, the expanded blooms shaded with buff and yellow; and Grace Darling, Francisca Kruger, Caroline Kuster, and Souvenir d'un Ami. Grace Darling is a splendid autumnal; it was producing many good flowers as late as the middle of October in the Royal Gardens, Kew, where there is a bed of bush plants near the pond facing the Palm-house. The flowers are large, full, bright peach in colour, shaded creamy-white, and borne in clusters of three or more. The foliage is of the richest green, and the plant of robust constitution.

There is another feature of interest in the Roses besides the beauty of the flowers, and that is the richly-shaded tints the leaves of many varieties, as Rosa lucida, assume when late autumn approaches. With the increasing desire to bring to light the old, forgotten climbers, single varieties, and species, we find in good gardens such types as Rosa lucida. This is a picture of beauty in autumn, especially when planted on the rock garden, so that its stems can fall over the stones and display to the full the rich brown and crimson-coloured leaves, made more intense by the sprinkling of rich crimson heps. It produces a unique piece of colouring that should be repeated in other good gardens, which might also be enriched by the golden colour of the decaying leaves of the Japanese Roses.

Treatment of Rose-trees.—I have received a consignment of Rose-trees. Can they be planted in the garden, or should they be kept in a warm cellar, with a little soil thrown over the roots during the winter? If so, what month should they be put in the ground?—Lucy.

*** Plant as soon as you possibly can, if still open and free from frost. Roses may be safely planted from October until March. If very severe weather sets in, place a little rough litter, Bracken, or twigs among and around the plants.

Pegging down Rose-shoots.—When is the best time to peg down Rose-shoots? Should the tips of the shoots be cut off before bending them? And will it matter if they have borne flowers at their point, as they are now doing?—Victorine.

*** We shall shortly have an exhaustive article upon pruning and pegging down Roses. Early in March is a good date.

Treatment of pot-Roses.—I have just received from a firm four Roses—viz., Mme. Falcot, Caroline Testout, Niphetos, and Duke of Teck—which I have potted in 7-inch pots to keep in greenhouse; they have shoots about 12 inches to 16 inches long. Should I cut them hard back, as I should like to form a nice round-headed bush, or leave them as they are to bloom?—J. Le D.

*** Cut the Roses back a little more than half way. The roots not being established, you cannot reserve so much wood this first season, nor should the plants be hurried in any way this season.

Pruning dwarf Roses *(Be).*—We shall publish a long article upon pruning Roses shortly and in ample time for the operation. A few illustrations may also appear. Roses vary so very much, both in growth and methods of pruning, that only a few general hints can be given, and which we will endeavour to give as simply as possible. If your sketch is intended to represent one of the medium-growing Teas or Hybrid Perpetuals, the side growths should be cut back to within three eyes of the main shoots.

Rose Duke of Connaught.—Since last writing you I find that this is pushing out flower-buds. What treatment shall I give, as I should like the flowers as soon as possible? In a pot outside till September, brought in conservatory at temperature, maximum winter, of 60 degs., kept dry, leaves fell, flower-buds now showing.—Botany.

*** Sixty degrees is a very suitable temperature for your Hybrid Perpetual Rose. You will need to give rather more water now, and be sure to avoid a sudden fall in temperature, otherwise the buds will turn black and decay upon the plants.

Rose cuttings unsatisfactory *(J. H. D).*—Your Rose wood was not sufficiently matured. It would also have been better to put the cuttings into a sandy loam upon a warm outside border than the case. Cut off the base of the cuttings cleaner in future. Those sent seemed to have been broken off. It is too late for further operations this season.

Roses for rather shady place *(W. F).*—We would prefer climbing Niphetos or William Allen Richardson to Crimson Rambler, as these flower over an extended period. We have known Roses grown in such positions, but more light would be an advantage.

GOOD POT TULIPS.

I grow many hundreds of Tulips in pots and boxes, requiring a succession of bloom from Christmas until May. Many I put into 4½-inch and 6-inch pots, and many more into shallow boxes, to be brought on in frames after they are removed from the plunging beds. The little early Duc Van Thols, although good in their way, I have now discarded, as the stalks are so very short and the flowers so soon expand and become flat that I find them of little value for decoration. The lovely Canary Bird and Chrysolora, both rich yellows, are unsurpassed for pot work, and if placed in a somewhat cool temperature as soon as at their best they remain good for a considerable time. Cottage Maid, a beautiful rosy-pink shaded flower, is a capital pot-Tulip, holding itself erect to the very last. This stiffness is necessary in pot-grown bulbs, as many of the finest coloured varieties have weak stems, and unless staked, bending over mars their general appearance. Duchesse de Parme, bright scarlet, margined and flushed with gold, is one of the most attractive Tulips and a capital doer in pots. Mixed with the foregoing yellow varieties, the flowers have a very rich and elegant appearance. Golden Prince, pure yellow, is most effective, having large and noble foliage, which sets the fine heads of bloom off to advantage. This should always be included where pot-Tulips are grown. The well-known and beautiful crimson and yellow Keizerskroon, although tall, is sufficiently stout to hold itself erect. This variety shows well in a mixed basket of plants in the drawing-room and brightens up the conservatory or greenhouse. Perhaps the largest and handsomest yellow Tulip in cultivation is Ophir d'Or. It is rather expensive, but a dozen or so pots make quite a brilliant display, and are invaluable for furnishing. The yellow, white, and scarlet Pottebakkers are all very telling and well suited for growing in pots. Proserpine, a very distinct rose-

carmine-flowered Tulip, is of good habit and one of the best for pot work I know of. This variety also lasts a long time in full beauty. The colour is so telling that it always commands admiration. Silver Standard and Thomas Moore, the former striped and feathered pure white, and the latter terra-cotta colour, are both distinct and beautiful Tulips, and should be included in all pot collections. Another most dazzling variety of excellent habit for the purpose named is Vermilion Brilliant. One of the very latest for pot work is Yellow Prince. I always grow it, in fact could hardly do without it. The latest batch of it I placed behind a north wall to prolong the supply. The double varieties are not much appreciated here as pot plants, but I always box up a lot of that good old double white, La Candeur. The quaint and rugged Parrot Tulips are also grown in boxes for cutting in April, these being very effective when arranged with their own foliage. J.

GARDEN WORK*

Conservatory.

Lay in a stock of potting soil. Good loam and peat are essential if plants are to be well grown. So convinced am I of this that we are having our loam for best Chrysanthemums, Pelargoniums, Cyclamens, etc., by rail from a distance, for our local soil is of too chalky and harsh a nature for best work. When carted in have it stacked in ridge-shaped heaps, not too narrow, as it dries so soon when the summer weather comes. There should be an open shed near the conservatory for keeping soil in the dry for immediate use, and where pots, slates, etc., can also be stored. Take advantage of wet days to get drainage materials prepared of different sizes. Perfect drainage is very important if one wishes the plants to grow into satisfactory specimens. Market growers do not in many instances trouble much about drainage, but the plants generally leave their hands in a young state. It is afterwards when the need for good drainage comes in. For specimen plants put a large crock over the hole; for large specimens the pots of the best makers usually, in addition to the hole in the centre of the bottom, have three others round the circumference, and a layer of large crocks should be so placed in the bottom, that the holes are carefully covered. On these place a layer of smaller crocks, or bricks broken up fine and passed through the sieve will do. Some plants require more drainage than others, but these are details which the careful, observant cultivator discovers as he goes on. I always think after the flowers are all cut Chrysanthemums are a nuisance, and, as we want to fill the pots with something or other that will bring in profit, we generally turn out the Chrysanthemums in a cold pit. Some are thrown away at once, but the best are preserved till the young stock has been secured. And, then, in order to keep abreast of the times, one has to buy a lot of new varieties every season, and this either involves a sacrifice of some of the old varieties or else the list of names gets so long and the varieties so numerous as to be a trouble. The best thing to do is as soon as any variety is superseded to get rid of it. Many of the best exhibition flowers will, under less forcing treatment, make good conservatory plants, carrying half-a-dozen or so good blossoms. If the conservatory is to be kept very gay the night temperature must not fall below 50 degs. The forced flowers are now coming in, and they soon go off in a low temperature. Rhododendron Cunninghami and other early sorts will flower now without much forcing.

Stove.

Pot Tuberoses, small bulbs, in 4-inch pots, and those of larger size in 5-inch pots, in equal parts of loam and leaf-mould, with some sand to keep it open. Plunge a part of the bulbs in a hot-bed to hasten the flowering, as the late bulbs are nearly over now, and Tuberose flowers are so useful for bouquet work. Gardenias, if the growth was well ripened, will be opening flowers if the temperature is right. Liquid-manure will be useful for these and also for other things coming into bloom, especially Eucharis Lilies, Poinsettias. Jasminum gracillimum is nearly always in bloom where planted out and trained near the glass. It also flowers freely in pots or even in small pots when the growth has been ripened a little, which usually happens when made in a light position near the glass. Many stoves are too much shaded in summer for climbers to flower freely. Shade to a moderate extent is necessary in hot, bright weather, but blinds should be rolled up early in the afternoon and not rolled too soon in the morning; and if permanent shades are employed they should be of as light a character as possible if flowers in winter are required Of course, plants in pots of all the usual flowering things will be better taken to a cooler house to ripen growth in summer; 65 degs. at night will be high enough for all plants now.

Early Vinery.

Where there are several vineries they are usually started in rotation at intervals of a month or six weeks. The first house probably will be a small one, and furnished with pot-Vines. There is some disadvantage in connection with pot-Vines. A fresh lot will be required annually, and that really means that the young Vines should be started in another house. In large places this will not signify much, as when the Vines are trained under the glass they do not take up much space. I have grown them on shelves at the back, trained down under the roof, and in such positions the rods are short-jointed and ripen up well. Where pot-Vines are grown a great deal is done with artificial manures, especially in mixtures, rather than one manure alone. The second vinery, which will be chiefly Hamburghs—and there is no better fancy Grape—may be started now, and another house, including Muscats, may be started in February, and all late Grapes should be started not later than the first of March, as it is better to get them on the way early enough to ripen in good time in the autumn.

Early Figs.

The earliest crop should be grown in pots, as the roots are more under control. The Brown Turkey is a free bearer, and the White Marseilles forces well, and comes in a little before the brown ones. The second crop is always a better one than the first, and when the plants are forced early the second crop comes immediately after the first. Some years ago I knew a successful Fig grower who always pruned for the second crop—*i.e.*, pruned hard back to get a lot of strong young wood, which, when well ripened, threw a very heavy crop. Those who have a lot of pot-Figs and plenty of room may try experiments. Everything in gardening is not learnt yet. Start Figs at 50degs. when a house is given up to them, but Figs in pots are often grown in other houses, and then they have to submit to the treatment given them, the temperature of which is often higher than 50 degs. at night.

Window Gardening.

There are plenty of flowers for those who have the means to buy, and the very poor need not have bare windows. In the cottage windows in the country the plants are kept on from year to year. Some of the Fuchsias and "Geraniums" have a history attached to them. Ivy-leaved Pelargoniums are often in good condition in the cottage windows, and bulbs of all kinds are easily grown. An old favourite plant which is easily grown is the Coronilla glauca. This flowers early. There is a pretty variegated variety, but I have lost sight of it lately.

Outdoor Garden.

There has been no frost of sufficient severity to injure anything up to the time of writing—the end of the week before Christmas; but we cannot expect this to continue, and if a low temperature comes suddenly a good many things will suffer. If protection of some kind cannot be given, a few bundles of dry Bracken will shelter a good many things. A wisp of Bracken thrust into the head of a standard Tea Rose will be a good help, and to keep it in position a string of matting may be used. We never trouble about protecting the heads of dwarf Tea Roses. If the stems are earthed up to keep the bottom safe it does not matter so much about the tops. We have had finer blooms when obliged to cut the plants hard back after frost than when pruned less severely. Roses may be planted now, though if one wants them to do their best, either plant in November or wait till February. It is very important to mulch and stake all things as soon as planted, and all Roses, especially in windy districts, should have the long shoots shortened to relieve the wind pressure. Autumn-sown annuals are making a good deal of growth, especially where not transplanted, and this soft growth may suffer if we get severe frost. When frost sets in, a little stuff, such as sifted charred refuse, will probably save them then, and is not much trouble to apply. This treatment will also be of value to anything not absolutely hardy, such as the Hybrid Clematises, etc.

Fruit Garden.

Strawberries started now in a night temperature of 45 degs. to 50 degs. in a vinery or Peach-house just started will be ripe by Easter. To have them earlier more heat will be required in the later stages. I am assuming the plants have been well grown and the crowns well matured. Single-crowned plants are best. If more than one crown is developed, the weakest should be removed early in the season. Royal Sovereign seems to have come rapidly to the front as a forcing Strawberry. For later work, Sir J. Paxton and President have not yet been superseded. If there is a Grape-room with an equable temperature of 50 degs. or so, all Grapes will keep as well off the Vines now, and this will give a chance of getting the Vines pruned and dressed, and the house and borders put into condition for starting. Give the house all the ventilation possible now. The waste of Grapes hanging on the Vines is considerably more under a glass roof where the temperature fluctuates than in a room with the light subdued. Then the cost for fuel is considerable when the Grapes hang in the house, as damp must be kept down. There is a good deal of work to do in the hardy fruit garden yet. If the bud-eating birds are present, dress the Gooseberry and Currant-bushes with soot and lime. Do not dig deeply among fruit-trees. I suppose all who have lost fruit through the Winter or Codlin-moth will have applied grease bands to the trunks of the trees. Lime washing is an old practice, and may be usefully continued.

Vegetable Garden.

Continue the preparation of the ground for the different crops. The ground for Onions and Asparagus should be freely manured and deepened and fully exposed. If the land is good and well done by there is no necessity for preparing narrow beds for Asparagus. Do all the ground well, and then sow or plant in rows 3 feet apart, 15 inches apart in the rows. There is no doubt Asparagus would ultimately pay for more room, but we cannot wait for these fully developed plants that form dense bushes 4 feet or more through. Experimentally I have had them, and where one has plenty of land and time they give more room But when one plants 15 inches apart in the rows, if necessary, every alternate plant can be removed later. Those who have no young plants and wish to take time by the forelock may sow the seeds in small pots in a warm-frame in January, and have strong plants to turn out in April. Make up hot-beds for various purposes. There is never too much forced produce if it is good. Seakale, Mushrooms, and Asparagus are sure to be appreciated now. Look close after Snow's Winter or any other Broccoli turning in. Veitch's Autumn Self-protecting are still plentiful. Cauliflower-plants in frames must have all the ventilation possible. They only require protection from severe frosts, cold rains, and sleet. Peas of an early hardy kind may be planted.

E. HOBDAY.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 27th.—Stirred the soil among Violets, Cauliflowers, etc., in frames. Placed more Lily of the Valley and Spiræas in heat. Made up a Mushroom-bed in house, and watered beds in bearing which required it. We are gathering plenty of Seakale and Rhubarb from Mushroom-house now. Looked over Apples and Pears in fruit-room. Glou Morceau is one of the best Pears in season now; does well with us on walls, but cracks on espaliers.

December 28th.—Raised a ridge of earth to Peas just through the ground, and earthed up young Cabbages. Looked over Peaches in early-house with camel's-hair pencil. Tied up pot-Vines in small early house, and disbudded surplus shoots. Moved a lot of early Narcissus into heat; flowers will be wanted. Rolled lawns and walks. This is done weekly. It gives polish and thickens the turf. Made a new plantation of Raspberries of such kinds as Superlative and Norwich Wonder.

December 29th.—Put in cuttings of many sorts of Chrysanthemums. All our exhibition plants are struck in thumbs singly; others in larger pots, several in a pot. They are struck in frames in a house where the night temperature is about 45 degs. Planted more French Beans in 6-inch pots. Pricked off seedling Tomatoes. These will be grown on quickly on shelf in warm-house. Sowed more Cucumbers, the kinds being Daniel's Defiance, Lockie's Perfection, and Rochfords. Top-dressed Cucumbers in bearing with old turf mixed with a little artificial-manure.

December 30th.—Pricked off Lobelias from seed-pans. These were sown in autumn. Put in cuttings of new "Geraniums," of which stock is limited They root freely now in a temperature of 55 degs. to 60 degs. They are rooted on shelves placed just over the hot-water pipes. Put in a lot of Vine-eyes. They will be kept cool for a time, and afterwards started in heat. Tied Pears on walls. The thick branches are secured with small twigs of the Golden Willow, which last very well one season—sometimes two.

December 31st.—Put in cuttings of various deciduous things, including Briers for budding. The cuttings were made a month ago, and laid in till there was time to plant them. Gathered hips from Briers in the hedges, and packed in damp sand to soften the outer covering. Filled another frame with Asparagus. The Grass soon starts now in genial warmth. As each lot comes out again the frame is filled with Potatoes or Carrots or Lettuce, or whatever is most in demand.

January 1st.—Took indoors another lot of Royal Sovereign and Viscountess Strawberries. Rearranged conservatory. Took up the last of the Chrysanthemums, including a lot of W. H. Lincoln (yellow) and Princess Victoria (white). Several dozen plants of each have made a brave show. These have had scarcely any fire-heat. Several times the thermometer in the house has fallen to freezing point, but we did not intend it to go any lower. Sowed Machet Mignonette in 5-inch pots.

EUPHORBIA JACQUINIÆFLORA.

NEXT to the Poinsettia, this is one of the brightest subjects we have for this season of the year. It is more difficult to manage than the Poinsettia, requiring careful treatment throughout. The very slender roots are liable to be killed, either through drought or excess of moisture. It is of the first importance to have strong cuttings to start with, and this can only be done by taking care of the old plants after the flowers have been cut; the plants are then rather shabby-looking, and often get relegated to some obscure corner, where they are apt to get neglected. A very few plants kept in good condition will give a lot of cuttings. Unlike the Poinsettias, the earlier in the year these can be taken the better. There is little difficulty in rooting the cuttings. Taken off close to the old stem, they will have a good base, but from longer growths it is necessary to cut them off quite close below a leaf, only putting the cuttings in just deep enough to keep them firm. Sand, peat, and leaf-mould in equal parts, and good drainage, should be used for the cutting pots; I like to put them in singly into small pots. When ready for potting on some loam and a little manure may be added to the compost. Early-struck plants may be stopped once or twice, but only the tips should be taken out. Later-struck plants may be grown three in a pot. It is a mistake to suppose this Euphorbia requires ripening off; the more freely the plants are kept growing the longer will be the racemes of bracts. When required only for cutting it may be planted out with advantage, especially if it can be planted where there is a little bottom-heat, using rough, porous compost and plenty of drainage. It should be well exposed to the light, and with good treatment will stand full exposure to the sun. During the summer artificial heat may not be required, but as soon as the nights begin to get chilly a little heat will be necessary. If allowed to remain in a cold house the mischief will not be apparent until put into heat, when the leaves will quickly fall off.—A.

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DOG'S-TOOTH VIOLETS.

This is a comparatively small group of plants, not more than seven being admitted as distinct species. Four of the species are Californian, two are confined to the Atlantic States, and the Erythronium Dens-canis has a wide distribution ranging from Southern Europe to Russia, Siberia, and Japan; it has been known and cultivated almost from time immemorial, and has changed but little or none within the last three centuries. The name, it is said, occurs in "Pliny" and "Dioscorides," and certainly the Dog's-tooth Violet was a great favourite with the older botanists. The whole of the species are charming and rank amongst the first to flower in spring amongst hardy bulbs. They are suitable for the rock garden, border, or wild garden, and are even much appreciated when grown in pots filled with light soil for greenhouse or conservatory decoration (see illustration). In the case of the American kinds, a light peaty soil is, we find, one of the essentials of success; and although, perhaps, hardy enough, they are all the better for a little protection. One or two of the species make charming edgings to beds or borders. Dog's-tooth Violets should never be planted less than 3 inches deep, and more in light soils than in heavy ones. Deep planting keeps them cooler than they otherwise would be and out of harm's way. E. grandiflorum and its varieties might, with fair expectation of success, be planted on sloping, sunny banks, where the Grass is thin. Some light sandy soil should be put round the bulbs at planting time, and plenty of room given them. E. Dens-canis has finely mottled and blotched foliage as well as pretty flowers; it is an effective border plant, and also does well in warm nooks in the rockery, and even in the wild garden in sheltered spots we have seen it flower well. It increases rapidly by means of offsets, which are produced at the base of the old bulbs—much the easiest and quickest way of propagating it. The plants are also easily grown in pots, as our illustration shows, using light soil.

Dog's-tooth Violets (Erythronium) in pot. From a photograph by Mr. S. Ingram, Ascot.

Tufted Pansy Bullion—There is perhaps no Tufted Pansy that can compare with this either in its earliness or its remarkable freedom of flowering. It is not only the earliest of all the yellow-flowered kinds, but it is also one of the most persistent bloomers that I know. A year or two back, when making a trial of all the best known varieties, this was the most free flowering. Frequently quite late in the autumn the plants are crowded with flower-buds. The variety has a very dwarf, compact, and tufted habit of growth. As an early kind it cannot be too strongly recommended.—B.

A USEFUL BERRIED PLANT (RIVINA HUMILIS).

This is now but seldom seen in good order, but it is one of the most useful of all the indoor berried plants; its long racemes of brightly-coloured fruit are not only exceedingly showy, but can be had in full beauty at almost any time of the year, provided a warm glasshouse is available for their culture. The plants are easily raised from seed, which may be sown in pots or pans filled with light soil at almost any time of the year. The seed germinates so freely, and the plants are so robust when they come up, that they give but little trouble. As soon as the seedlings are up and large enough to handle they should be potted off singly in small pots in light soil; a mixture of turfy-loam, peat, leaf-soil, and silver-sand will suit them well. Let the pots be well drained, and after potting set the plants on a shelf or stage near the glass, where they can have a genial moist heat. In this they will soon start and begin to grow rapidly, and if dwarf bushes are desired, it is only needful to stop the leader by nipping out the point, when it will soon break into growth and become furnished with young shoots down to the base. If standards are desired, the side growths should be pinched out of the centre shoot, and it should be encouraged to grow on freely until the required height is obtained, when the side shoots must be allowed to grow on, and thus form a good head, with a stem about 15 inches or 18 inches in height, as then their long bunches of glossy berries hang clear, and are shown off to the greatest advantage. It will be necessary when the plants are in active growth to elevate them as near the glass as possible to assist the flowers in setting. This they generally do pretty freely; and the berries are not slow in colouring, but they, unfortunately, fall rather readily, to prevent which the plants should be withdrawn from the stove-heat, and be placed in a somewhat cooler temperature before being used for table or cold conservatory adornment. After they have done service in this capacity and become shabby they should be rested by being kept somewhat dry at the roots for a little while, and then cut back, after which, if syringed and watered, they soon break into growth again, and, if repotted, become more full of berries than they had been before. If Rivinas are propagated from cuttings, it will be found that the young, half-ripe shoots strike best; and all that is necessary with these is to insert them in sandy soil and keep them close in heat for a fortnight or so, by which time they root, and are then ready for potting. In potting it is well to bear in mind that the firmer the soil is made around the roots the better the plants will fruit.

B. H.

Pleroma macranthum for roofs—This, which is quite as well known under the generic name of Lasiandra as that of Pleroma, does not get its merits as a plant for the greenhouse roof sufficiently recognised, for it is seldom seen so treated, though it is one of the most beautiful subjects that we have for such a purpose. The rich purple blossoms supply a colour which is but little represented among indoor plants, being more in the way of Clematis Jackmani. Some of the Pleromas—P. elegans, for instance—are difficult plants to cultivate successfully, but no such thing can be urged against P. macranthum, which will grow freely in an ordinary greenhouse temperature, while it will also thrive if kept somewhat warmer. It is not at all difficult to strike from cuttings of the young growing shoots put in during the spring months, but preference should be given to shoots of moderate vigour rather than the very strong ones. A very suitable compost is a mixture of loam and peat, with a liberal dash of rough silver-sand. This Pleroma is a stock plant in most nurseries, but if kept for some time in comparatively small pots for convenience of transit it is sometimes difficult to get it to grow away freely afterwards.—H.

Potting Amaryllises.—The garden varieties have been at rest for three months or more, but, with the advent of the new year, they require to be started into growth. Before doing so it is better to repot the entire collection and place in a gentle bottom-heat. The repotting of Amaryllises must be carefully performed, and the potting material should be good and moderately moist. When the bulbs are turned out of the pots in which they have been growing examine the base of each, and remove all decayed and decaying matter. Then place some potting-soil in the pot in the form of a cone, the apex of the cone as high as the rim of the pot. The bulb is placed on this cone with the roots hanging down its sides; fill up with soil over the roots and press in firmly; by this means the bulb will be about half its depth out of the compost. As the potting proceeds let the bulbs be plunged in the tan bed or other heating medium; a bottom-heat of about 85 degs. is sufficient. The temperature of the house should be about 50 degs. at first, and be very careful of moisture. I do not water for three or four weeks after repotting, nor, indeed, until the bulbs show some signs of growth. It is better not to have an over-moist atmosphere; watering the bulbs too early causes them to rot off at the base, and a moist atmosphere causes decay to set in at the apex of the bulb. As the growth of the flower-scape and leaf proceeds, the temperature of the house must also be increased, until, by the time the flowers begin to open, a minimum of 60 degs. has been attained. A

lower temperature than this would be desirable when the flowers are fully open. Of course I am well aware that all gardens do not possess a house set apart entirely for Amaryllises; in that case they can be started in a vinery or Peach-house, and there be allowed to flower, or after growth commences they may be placed in a plant-stove or hot-house.—J.

THE KITCHEN GARDEN.

BORECOLE OR SCOTCH KALE.

The Kales are not planted so much as they deserve by amateurs, as few vegetables give so good a return for labour bestowed. In severe seasons, when all other crops are killed to the ground, the Scotch Kales, though the tops may be cut, will push out new shoots and give a supply well into the spring. Doubtless the variety illustrated, the Scotch—or, as it is now generally known, Curled—Kale, is one of the best for garden culture; but of this there are several varieties. I prefer the Dwarf Curled as having less stem. It is hardier and less influenced by frost. I have in severe winters seen the tall varieties so much frozen through the stem between the heads and the root that the tops have been quite destroyed, and only a little life left in the stem close to the soil. Of course, this is only in very severe weather, and the dwarfer varieties are less injured, as snow protects them more readily and north or east winds do less harm. On the other hand, much depends upon how they are grown. Kales for winter supplies should never have freshly-manured land, and though I am not in favour of starving vegetables, the growth should be sturdy, and this is best in land manured for a previous crop. Another point often overlooked, both by gardeners as well as amateurs, is too early sowing. I have seen Kales sown with other early vegetables, such as Cauliflowers and Brussels Sprouts, early in March. This should not be, as often the plants are left in the seed-beds well into June, sometimes later, with the result they get much drawn, are weak and starved, and cannot with the best of culture make up for their previous bad treatment, the winter quarters being patchy and the plants weak. A few words as to culture and varieties will not be out of place, as at this season we are enjoying the results of last spring. Sowing from Christmas to the end of April, the Kales should give a full supply of fresh green, of delicate flavour. As regards

Varieties, some of the latest Kales are not strictly Scotch, but closely allied, and doubtless all or most of the Borecoles have come from the same parent, the difference in variety being caused by seeding and fertilisation. The latest are the Asparagus and Cottager's, very hardy kinds, which are splendid varieties to follow the Scotch Curled types, and which winter well and are a long time before they run to seed. There is another distinct form of newer introduction, but still closely allied to the Curled. These are the two Arctic varieties, a Curled Green and a Purple—two colours; but of the most hardy Kales I have grown, and of good flavour, I prefer the green of the two, as it more resembles the one illustrated. But both have the same good eating qualities and are very prolific. Like those noted above, they give a fine head or top. When cut the stems produce a great quantity of sprouts. A Kale closely allied is Reed's Hearting. This is a variety that makes a compact heart, very hardy and good, and does well in poor soils. It is later in running to seed than the true Scotch or Curled, and is valuable on that account. The Variegated or garnishing Kales are little grown by amateurs, but they are worth room in most gardens, as their bright colours make them useful. An excellent type of Kale is the Welsh, which does not differ greatly from the Scotch, only in name. It has longer leaves, and is of first-rate quality, but, in my opinion, less hardy, as the Kales with much stem or long leaf-ribs are more readily affected by severe weather.

Those who wish for good Kales for four or five months will do well to make two sowings, but here let me add the seed-beds should not be poor land, but good, and on the flat, so that there is no lack of moisture in their earlier stages. Young seedlings soon suffer in a crowded bed, and by all means avoid overcrowding. Far better give double space and get a strong plant, and even then should plants be at all thick I would advise the amateur to thin out in preference to strangling the plant in infancy. We make our first sowing early in April on a cool border. This is for first supplies, or cutting in December or earlier if needed. I say December as there are plenty of vegetables to give supplies till that date. Plant out in firm soil, 2 feet apart each way, and keep the hoe going during the summer is the only necessary work, giving moisture in dry weather. The latest lot are sown the middle of May on a north border, and these are planted out in July or the end of August; but we sow thinly to get a strong plant. Should the weather be dry at planting time it is well to make drills. This assists plants to retain moisture given, and later on moulding up is done to get a dwarf stem growth. W.

The Scotch Kale.

EARLY TOMATOES.

Where very early Tomatoes are expected, or say by April, many gardeners make it a rule to strike a number of cuttings from autumn-bearing plants in October, believing, and rightly so, I think, that plants so raised come into fruit sooner than seedlings. One great drawback, however, with plants saved through the winter in small pots is that, however near they may be kept to the glass, they almost invariably become drawn and weakly, so much so, in fact, that if saved entire and potted on, say, in January, growth for the first month or so is too weak to produce bloom-trusses sufficiently strong to fruit; consequently the plants are bare of fruit for a long distance from the pots, and much of the trellis is wasted. By far the best plan is to keep the plants in a temperature of from 55 degs. to 60 degs. during November and December, and to take 6 inches of the shoots and insert as cuttings the first week in January. If plunged in a gentle bottom-heat, each cutting occupying the centre of a small pot, and a night temperature of from 60 degs. to 65 degs. maintained, rooting will take place in three weeks, when the plants must be raised near the roof glass, where growth will be both rapid and strong. If potted on from time to time the final shift may be given in March, 9-inch pots or 10-inch pots being used. Usually by this time a few small fruits will have set, and these will swell away and ripen in April if the plants are not subjected to cold air during the potting process. A good holding loam, preferably maiden, with a free addition of sifted mortar refuse and a small quantity of bone-meal, suits them well. Small pots for very early batches are imperative, as a too free root-run induces a strong and unfruitful growth at this comparatively sunless season, and the plants are generally thrown away as soon as the first flush of fruit is gathered, as they do not pay for fresh growths to be taken up from the base, as do spring-raised plants. Where it is preferred to allow the autumn-struck plants to fruit, they should, in order to make the best of them, be shifted in January from their small pots into 6-inch ones, but instead of potting in the ordinary way the leaves should be removed from the lower part of the stems, the latter being bent round inside the pots when three parts filled with soil and secured with small wooden pegs. By this means a dwarf plant to begin with is secured, and from each of the joints of the embedded stem young rootlets will quickly start, these greatly strengthening the plants as growth advances. A common mistake made with early Tomatoes is giving them too much heat during the dark, sunless days of January, and even in February a night temperature of 60 degs. is ample. A moist, stuffy atmosphere often given by the inexperienced is also fatal to a solid growth and good set of fruit. Attacks of insects need not be feared from a dry, buoyant atmosphere. J.

Digging.—This should go on whenever the weather is fit, as there is no more uncomfortable feeling during a continued frost than the thought that ground work is behindhand and no prospect of getting on with it. Many crops, too, do best on ground that has been dug some time previously, and the plots for these should be prepared first. Notable among such crops are Onions and Peas, and for these the ground ought certainly to be dug before the new year. Odd bits of the early borders should also be dug, as these come in nicely for sowing early crops, and seeds may be sown on narrow borders, where no treading need take place, at times when digging would be unwise, if not impossible. Early Cauliflowers, too, should be prepared for, as they do not care for soil in too loose a condition.

Seakale.—There should be no further delay in lifting the whole stock of this which is required for forcing, as the crowns are now well rested and ready to respond to gentle forcing when wanted. The work of lifting can be done in mild weather with far less injury than when the ground is hard frozen, and it is in every way preferable to have it all under cover before January is upon us, for, mild as the weather up to the time of writing has been, we cannot expect to get far into the new year without getting a spell of frost that will put an end to ground work for the time being. Take care of all thongs which are large enough to make planting sets, as they are easily kept if treated as I recommended in my notes at the end of last month, and though they may not all be wanted it is best to get sufficient to allow for discarding any which show signs of rust at planting time. This caution is especially necessary where the Lily White variety is liable to go a little wrong; not that I have had any personal experience of this defect, but I have seen it elsewhere and regret that it is so, as I consider it in appearance a long way ahead of the old purple, and with both varieties planted side by side here I find the Lily White makes the better crowns.—J.

Early Peas.—Some Peas which were sown here on Nov. 19th were above ground on Dec. 17th. If you care to mention this in your next do so.—Flacterix, *Southboro', Tunbridge Wells.*

ORCHIDS.

ZYGOPETALUMS.

These, though not so showy as some other Orchids, are, nevertheless, well worthy of a place in all collections, as they bloom at a time of the year when choice flowers are scarce. The scent, too, of most of the species is very agreeable. As Zygopetalums make large leaves it is necessary they should be allowed plenty of root room, otherwise they will fail to grow satisfactorily. Potting should be done directly the flowers are cut. In most works on Orchids peat is recommended for growing these plants in, but I prefer a compost composed of two parts fibrous loam to one of dried cow-manure, broken into pieces. The plants having been turned out of their old pots, all the sour portions of soil should be removed with a pointed stick, taking care in doing so not to injure the roots more than can be avoided, or it will take the plants some time to recover. If well rooted they should be shifted into pots at least two sizes larger than those from which they were turned out. In potting see that the compost is well worked in between the roots, and do not press it too firmly or there will be some difficulty in the young fleshy ones pushing their way into it. When potted the plants should occupy a light position, and as it is usually early in the season when such work takes place, it will not be necessary to shade. Very little water will be needed till the young roots commence to take hold of the fresh soil, but the foliage must be occasionally damped over with the syringe to keep it fresh. The soil, however, should on no account be allowed to become dry, or root action will be slow. When the plants have started into active growth more water will be needed, and as the pots become filled with roots it will be necessary to examine them daily in case they should get dry, as the long plaited foliage will need much support.

During the summer, shade should be afforded, as the young foliage is very tender. The plants should also be frequently damped over with the syringe to keep down insect pests, as both red-spider and thrip are very troublesome, and when these are allowed to make the least headway there is but a poor chance of a healthy growth, without which it is impossible to get strong, well-developed flower-spikes. Many people try to grow these plants in too low and airy a temperature, the consequence being that they fail to make satisfactory progress, often dying off altogether. As most of the species come from the warm climate of Brazil, it is evident they cannot put up with cool treatment, and, from the nature of their foliage and pseudo-bulbs, it must be apparent to all that they cannot do with drying off, as it were. The temperature during the summer should range from 60 degs. to 65 degs. at night, with a rise of from 15 degs. to 20 degs. by day, according to the state of the external temperature. During winter the thermometer should never be allowed to fall below 55 degs., even in severe weather, for at that time, though growth is not very active, the young roots are putting forth, and are therefore easily injured. A humid atmosphere ought always to be maintained when the plants are in active growth, and manure-water may be used, provided it is weak. As autumn approaches and the plants show signs of maturing their leaves, less water at the roots will be needed, but on no account should the soil be allowed to get dry. It is during this stage that root action is least active, for as soon as the flower-spikes show themselves growth commences; on this account the plants should never be subjected to a low temperature. There are some species much more difficult to grow than others, but by a close study of their habits it will soon be found out what suits them best; therefore those who have hitherto failed to grow them satisfactorily will do well to give them another trial. Amongst some of the best will be found—

A group of Zygopetalums.

Zygopetalum brachypetalum.—This showy species, which usually flowers at the end of the year, was introduced from Brazil about fifty years ago.

Z. Burkei is a distinct species, with long, narrow leaves, having curiously-marked flowers, each about 2½ inches in diameter. It usually

flowers in December. It was sent home by Mr. Burke, who found it growing in the swamps in Guiana.

Z. CLAYI is a beautiful hybrid raised by Colonel Clay about twenty years ago. It is of robust habit, having foliage about 18 inches long.

Z. CRINITUM AND Z. INTERMEDIUM are forms of the Z. Mackayi. They all flower about the same time of the year, and when well grown make handsome specimens, the long spikes carrying from five to eight flowers on each, frequently two spikes on each growth. Z. Mackayi was introduced in this country in the early part of the present century.

Z. MAXILLARE is also a very free-flowering species, with a rich purple lip.

Z. BURTI, a native of Costa Rica, is one of those peculiar species that Orchid growers sometimes find it difficult to find a suitable place for.

There are many other species of this lovely genus which all require about the same treatment.

OUTDOOR PLANTS.

WALL PLANTS.

AMONG the improvements effected in modern flower gardening not the least important have been the additions made to the climbing plants —not *bonâ-fide* hardy climbing plants, for they are by no means common, but things that can be utilised for clothing walls or anything bare and unsightly which it is deemed more advisable to hide than to remove. It is noted above that this may be considered a distinct improvement in modern flower gardening. It may be added that it is perhaps more in the selection of suitable things than in the actual planting. We find in old places walls covered with a certain variety, but unfortunately many things are not suited for the positions they occupy. Instances in point are not wanting in the shape of two old Judas-trees filling cosy south-west and south-east corners of a wall. Their places would be better and far more profitably filled by some nice Roses. Other good places are occupied by Benthamia japonica, practically a worthless plant. Among other instances of mistakes may be cited Jasminum nudiflorum, good for clothing a low balcony or parapet, but out of place on a high wall, the single and double forms of Deutzia crenata and Spiræa Lindleyana, that are much better in the open, especially when a walk is in close proximity to the wall, and a certain amount of tying in is absolutely necessary to keep the plants within bounds. It may, I think, be safely said that the clothing of walls demands quite as much care on the original planting and after attention as any other part of the flower garden. There are places, for instance, where nothing could be better than the Wistaria and others where it would be worse than useless to plant it. Suitable sites should be selected for strong growers and those that make very little annual headway. Again, if a considerable stretch of wall has been covered, evergreens, as Escallonias and things very nearly overgrown or that retain their foliage in mild winters, as Ceanothus and some of the Honeysuckles, may be judiciously mixed with deciduous plants to avoid the bareness of winter inseparable from the sole use of those things that lose their foliage. The planting should depend largely on what is in front of the walls —a border of several feet or a walk that is more or less used. In the latter case only those things are admissible that are amenable to fairly close treatment and that look equally well in in this way, such as the evergreens noted above, with Cotoneasters, Cratægus Pyracantha, Cydonias in variety, and last, but by no means least, Chimonanthus fragrans. The present winter has shown the marvellous staying powers of this beautiful winter-flowering shrub. It started to flower at the latter end of November, and at the present time is quite a mass of bloom. When we consider alike its season, long-sustained flowering, and perfume, it is safe to recommend that no wall planting is complete that does not include it in the list of subjects. In all cases, even when the close proximity of the walk necessitates frequent tying in, Roses must not be forgotten, and they may be planted in as great variety as circumstances will permit, choosing those that in constitution and habit are severally best adapted for different sites or the scope of wall available. Where the nature of the surroundings permits the list can be very considerably strengthened by the addition of some of the Deutzias and Spiræas, Weigelas, Forsythias, and shrubs of a similar character. If trained up the wall to a height of, say, 8 feet or 9 feet, and then left to make semi-circular bushes, they form an admirable background to the herbaceous plants that may be introduced on the border. When suggesting above the advisability of working in with deciduous flowering shrubs a certain number of evergreens, I did not mean the latter should be entertained to the verge of heaviness. This is sometimes apparent in the case of Magnolia grandiflora, a plant that may be used occasionally and in special places with the best results, but which should hardly be allowed to monopolise the greater part of a wall; the flowers, handsome as they are, have a very short life, and do not compensate for the heavy, formal foliage.

E. B.

THE DOUBLE ROCKETS (HESPERIS MATRONALIS).

THERE are few more charming flowers than the Sweet Rockets. Last July I saw a mass of the white form, several yards in extent, and containing probably a thousand plants of this

Double White Sweet Rocket. From a photograph by Mrs. Stafford, Waldeck, Enfield.

beautiful perennial that presented, in full bloom, a sight not to be forgotten. Some of the flowers were tinted flesh, but the majority were pure white. The owner remarked to me that fine, hardy, and effective as this perennial was, yet it would hardly be found in gardens generally—indeed, perhaps little known to many gardeners. Few, again, know how fragrant it is. To keep it in good condition the plants should be often lifted and divided. In some soils the shoots will endure very well for several years; but, as a rule, it is wisest to lift them, divide, and replant every autumn, as old roots are dispensed with, and the stems, which may have become exposed, being planted lower down in the soil, find protection.

T.

Adorning a lodge.—I am in great difficulties about decorating a lodge. It is built in the side of a rock, and the open side faces due north, and is entirely overshadowed by Beech-trees. At present I have Ivy growing up it. It has a small plot of Grass growing in front of it, about 3 feet wide. At present the lodge looks mouldy and damp. I thought of growing Tropæolum speciosum up through the Ivy; would the position do for it? I always heard that it required shade. Is there any other creeper that would succeed in such a position? I have a Monthly Rose that blossoms in the summer, but it is always untidy. If the Tropæolum would do, what time should I plant it?—IRELAND.

*** Tropæolum speciosum would be well worth a trial on "Ireland's" lodge. It is possible that the shade of the Beeches will prove too dense, but we have known this Tropæolum to flower well when shaded by an Oak. In the South of England it succeeds best when its roots are in a shady situation, though the upper flowering shoots appear to delight in the sunshine. In Devonshire it has been grown amongst Ivy with success, and there is certainly no better setting for the brilliant flowers than the deep shining green of the Ivy leaves. Spring planting is preferable for this Tropæolum, and it is a good plan to lay the roots when received on Cocoa-nut-fibre and cover them over with a little of the same material in order to induce them to start before planting. The soil should be light and porous. Sandy peat is perhaps the most suitable medium, but leaf-mould and fibrous loam in equal quantities will also meet the circumstances. A plentiful water supply should be given if the weather is inclined to be dry, as the Tropæolum, without being a bog-plant, revels in moisture at the roots. If "Ireland" has friends in Scotland they would doubtless be able to send him bushels of roots in the spring, as Tropæolum speciosum is a veritable weed in many places in North Britain. No other flowering climber is likely to be satisfactory in the position described.—F.

LIBONIA FLORIBUNDA.

FEW winter-flowering plants are more useful than this Libonia, yet how seldom one meets with it. Of easy culture, good bushes clothed from summit to base with their pretty bugle-shaped flowers of red and yellow being alike useful for house or warm conservatory decoration, also for cutting. One thing which, however, must be guarded against is putting the plants into rooms lighted by gas, as this soon causes the leaves to turn yellow and fall off. Given a gas-free atmosphere, however, they will last for some considerable time in good condition. For the adornment of small glasses also they are useful in a cut state, and look well used in dinner-table decoration. It is advisable to raise a fresh stock of plants annually, although it is as well to save a few old plants, cut them back, thin out the growths, and grow them on to form large bushes in 8-inch pots, these coming in very handy for placing singly in ornamental vases in the house or for the decoration of the stove or intermediate house. Cuttings are best taken off in February, these having been encouraged by cutting hard back several old plants in January and placing them in a moist, warm house to break freely. They quickly root, when they must be potted off into small pots, using finely sifted loam of a light nature, a little leaf-mould, and silver sand. An ordinary stove suits them best for a time, or, say, till April, when after being shifted into 4½-inch pots an intermediate house will do. With ordinary care and an occasional syringing overhead growth will be rapid, and when roots become numerous a little diluted liquid-manure once or twice a week will be beneficial. If a pit having a flow and return pipe in it can be spared, the plants may be planted out in it in nice loamy soil towards the end of May and lifted again in September. The only insect which troubles Libonias much is red-spider, but with good cultivation and avoiding a root-bound condition this pest can be kept at bay. If kept in pots all the summer the syringe must be freely used twice a day, as an arid atmosphere is not only unfavourable to a free and healthy growth, but also encourages this insidious insect. If those who have not yet tried Libonia floribunda for winter decoration will only do so, I am quite certain they will be pleased with it. It is useless attempting to keep plants in the same pots a second year, as they are such free-rooting subjects, and when so treated invariably lose all their leaves.

J.

Hyacinths and Tulips (*K. B.*).—Dry the bulbs off steadily after flowering, and when dormant remove from soil and store on a dry shelf. It is not often that bulbs are so good a second season after flowering, most of them having been grown two or three years without bloom so as to store up an extra fine truss.

FRUIT.

GRAPES FOR AMATEURS.

In a few cases amateurs who study Grape culture have produced better results than gardeners, and I have sometimes seen splendid culture in a small house with only little heat and none too much attention. Indeed, I think there is no part of gardening which the amateur can manage so thoroughly as Grape culture if a good beginning is made. The Black Hamburgh (see illustration) is probably the best Grape an amateur can grow, as it is a summer kind, very free and luxurious. It is one of the best for what may be termed a plant-house, or house devoted to other things, the vine occupying the roof. The Black Hamburgh is the best general black Grape in cultivation, forces grandly, or may be grown without heat, but for keeping, say, after October, is not so good unless there is an unusually fine border and heat at command. Amateurs who, therefore, plant it for late supplies may be disappointed. For that purpose there are later and distinct keeping varieties, but not equal in quality—indeed, inferior. As regards the varieties suitable for amateurs, my advice is only grow a few, and those with little knowledge of Grape culture would do well to get the variety illustrated at the start. Although I am ready to admit amateurs have grown the Queen of Grapes to perfection and the Muscat of Alexandria, yet they need care and judgment necessary to secure the best results. I can scarcely class the last-named splendid Grape as an amateur variety. I only name it because of its excellence, and there is no trouble in growing it well if the grower can give more warmth than the Hamburgh needs. The Black Hamburgh can be grown thoroughly well even in a cold-house if carefully cultivated and not over-cropped. This is a fatal objection, as many crop their Vines too early—that is, before the plants have made many roots or a strong cane, with the result that the Vine by the time it should be at its best is worn out. In other words an immature Vine is called upon to give a full crop, and in a season or two collapses. Another frequent cause of failure is hard forcing the young canes before root action is vigorous, and in many others not resting the canes. I am aware this resting question is a very serious one for amateurs, as often the house or vinery is filled in the winter with plants, for which they keep the house warm; but in time it ruins the Vines, as there is no rest, sap is active, and the Vines, though they grow freely, do not fruit. I admit one must grow plants, but my advice is get suitable ones, those which require but little warmth. Give all the air possible in good weather, avoiding a high night temperature from October to March. By growing the Hamburgh one can readily do this, as the crop will be cleared and the Vine at rest during the period named. Another evil is want of atmospheric moisture in the growing season before colouring begins. A white Grape, little inferior to the Black Hamburgh, and as easily managed, is

Foster's Seedling, an oval white Sweetwater kind, early, forces well, and does well in a cool-house; indeed, it is the best all-round white Grape for amateurs, and of excellent quality, as few fail to grow it well. It also will keep a good time; I have had it good in December grown in a cold-house. Of course, many of my previous remarks as regards cropping and culture are applicable to Foster's Seedling, as, like the Hamburgh, it is most prolific—indeed, in most cases too much so. Growers therefore overcrop and the Vines suffer. It grows to maturity in about the same time as the Hamburgh and sets freely. I would advise amateurs who have space, and grow the two varieties in question, to allow a new rod to run up every two or three years from the base of the older one, and to remove the older ones as the others attain size. By this plan better bunches are secured and the Vines are more vigorous. Beware of overcropping, as new wood shows so many bunches, and in growing new rods one must not crowd the Vines. This, therefore, must be taken into account in planting, and if plants are grown there must be plenty of space.

The Black Hamburgh Grape. From a photograph by Mr. F. Parren, Northgate-street, Canterbury.

Borders may be inside or out. The best midseason fruiting Vines do well with borders outside, and these are less trouble, and can often be better made. Make them quite 3 feet deep, with 6 inches of clear drainage and an outlet for water. This latter is important, and the compost must be the best procurable, such as good loam from a field partly decayed; but avoid manures, which cause a pithy growth. Use a liberal portion of old mortar rubble—say, a fourth part—plenty of wood-ashes, if obtainable, or, failing this, road-sweepings, or grit and ¼-inch bones or bone-meal, 1 cwt. to two cartloads of soil. With heavy soil charcoal or wood-ashes is a grand fertiliser, and manures are best given from the surface in liquid forms, or as growth increases as a top-dressing previous to watering. Plant at least 4 feet apart if other plants are grown in the same house, and the Vines have not got much rafter run. Planting is best done in March or April, and do not omit moisture and fruit sparingly at first. The next season after planting the Vines should be cut back to within 3 feet or 4 feet of the first break; the next the same length allowed, and three or four bunches only on last year's growth. By this means good wood and ample roots will be secured. W.

NOTES ON FIGS.

Figs in pots.

The trees having now lost their leaves should be examined to see if there are any insect pests hiding in the crevices or attached to the bark. Both white scale and mealy-bug are often very troublesome, the former in particular, as several dressings are needed to rid the trees of them. If taken in hand as soon as the leaves fall off, the old wood may be well-scrubbed with a brush and soft-soap water, after which it may have a dressing of some well-tried insecticide. Care must be taken in cleaning the current season's growth, or the young Figlets attached thereto will be seriously injured, and instead of developing when the trees are put into the forcing-house they will drop off. If the young wood is washed with a soft painter's brush, no harm will be done to the embryo Figs, particularly in this early stage. If the trees have been infested with mealy-bug, the walls, glass, and woodwork of the house in which they have been grown should be thoroughly cleansed, as it is useless to clean the trees and then return them to a house where there are any signs of these pests. When the plants have been thoroughly cleansed, potting should receive attention. There is nothing gained by using over-large pots, for if the plants receive proper attention during their growing season in the way of feeding, pots from 15 inches to 18 inches in diameter will be ample for good-sized bushes. When too much root room is allowed the plants often make gross long-jointed wood, which is too sappy to be fruitful. Before potting, the balls of earth attached to the roots should be thoroughly soaked. That there may be no doubt about every particle of soil being moistened, turn the plants out of their pots and stand them for a couple of hours in a tub of water. When saturated they should be taken out to drain till sufficiently dry to be conveniently handled. It is a great mistake to attempt potting if the balls are in the least dry, as it will be difficult to moisten them afterwards. Do not attempt to remove any of the old soil except on the surface, which may be taken off before the plants are put into the water. The roots should, however, be loosened with a pointed stick, and all crocks ought to be removed. Quite clean pots ought always to be used, and these should be large enough to admit of a 2-inch or 3-inch shift all round the old ball. For instance, plants that are well rooted in 12-inch pots may be put into 18-inch ones, while those in 8-inch pot can be transferred to those of the first-named size. The compost used should consist of good loam and lime rubble, to which may be added some crushed bones. The soil when used ought to be moderately dry that it may be made firm, otherwise the water will pass through it too freely. Figs,

as we all know, make large leaves; therefore ample room should be allowed between the shoots for the light and air to be freely admitted, but if former directions have been carried out very little pruning will be needed. It may, however, be necessary in some instances to thin out the shoots a little; these prunings can be saved for cuttings, as it is always advisable to keep up a stock of young plants. Plants that do not require repotting should have the surface soil removed, replacing this with a rich top-dressing, and making it as firm as possible. The trees may then be re-arranged, keeping the smallest ones together and allowing as much space to each as possible, that there may be no undue crowding when they have put forth their leaves.

TREES PLANTED OUT will also need attention, for in some instances the wood becomes too gross, in which case it will be necessary to look at their roots. The growth of Figs varies very much in different soils, that of a heavy, retentive nature causing a long-jointed, sappy growth, while a light, shallow one has the opposite effect. Where the soil is cold and heavy, the borders in which the trees are growing should be as shallow as is practicable, and the roots so restricted that they cannot penetrate the cold, ungenial subsoil. Drainage in such places is a most important consideration, for whenever the trees commence to make long joints it is a proof that their roots have gone beyond due bounds. When it becomes necessary to lift such trees, care must be taken not to mutilate the roots more than can be avoided. The soil beneath should be made as firm as possible to prevent them from going down, while plenty of lime rubble should be mixed with that in which the trees are planted to allow the water to pass away freely. When these things have been attended to, the trees may be trained to the walls or trellises and the house made ready for starting. But little water will be needed during their dormant state; the border, however, in no case should be allowed to get dry, or the first crop will in all probability fail to swell. The house should be kept open night and day in mild weather till forcing commences; frost, however, must be excluded, as the young Figlets being tender would be seriously injured were they to get frozen.

TREES ON WALLS.—The first sharp frost will have brought the leaves of these to the ground. Where it is necessary to lift or root-prune, the work ought to be proceeded with without delay. The shoots should afterwards be liberated from the walls and thoroughly cleansed before frost sets in, as it is far better to do all such work at this time of the year than in spring, when the young Figlets and buds are swelling. In many places it is necessary to protect the growth during winter. Protection should, however, be delayed as long as possible that the shoots may get hardened previous to being covered. In some places in the south Figs grow exceedingly well. Even in the most severe winters but little injury is experienced, though the bushes remain unprotected. Such, however, is not the case in the midlands and more northern counties, where the frost, though perhaps not more severe, takes greater effect on the plants, owing to the wood not being so well ripened. In those districts successful cultivation of the Fig in the open requires much care and forethought, for it does not do to run any risk or failure would be the result. Good crops are, however, obtained in some places, especially where the soil is suitable.

PLANTING.—Those contemplating planting hardy fruits should push the work forward as quickly as possible that all may be completed before frost sets in. In the case of the Fig, however, I would not advise planting in the open till spring, for as plants may usually be procured in pots, there would be less risk run of them suffering should the winter be severe, and as the Fig is late in making a start there would be nothing gained by planting in the autumn. Plants may, however, be procured in readiness to be planted whenever it may be found convenient to do so. There are many good varieties of recent introduction, amongst them being St. John's, Negro Largo, Grosse Verte, Pingo de Mel, and Violette Sepor. There are, however, many good older varieties worthy of cultivation. This being so, it is advisable where there is room to add the new kinds and test their merits before doing away with any of the others. H.

WINTERING POT STRAWBERRIES.

MUCH depends upon the wintering of the plants in relation to successful forcing, and for my part I would prefer a hard winter to a mild one, when the plants do not cease growing, with the result that they force badly, some kinds being much worse than others. I place much importance upon ripening and what may be termed resting during the winter. I am aware that frost, when very severe, plays sad havoc with the plants in the breaking of pots, if not plunged or the roots protected. I am not advising that no care should be taken, but I find plants left to shift have in many cases done much better than those coddled, if the term can be applied. A few years ago I stacked a large number in the open, and rarely had a poor crop, the only drawback being that in severe weather it was impossible to get at the plants. My advice is to winter the plants in the open, failing cold-frames, with the pots plunged in ashes. One need not fear rain or moisture if there is good drainage at the base. Plunge the pots well over the rim in fine coal-ashes on a hard ash bottom, as in such the plants are sooner thawed when frozen, and as long as the ashes cover the pots the roots are not injured. Plants plunged suffer less than in stacks, as the east winds we often get in severe weather shrivel up the foliage. I think free exposure a strong point with Strawberries, and would much rather leave them unprotected than place them in a warm or dry house. S.

NEGLECTED ESPALIERS.

IT is not unusual to read a good deal respecting neglected orchard trees, and, unfortunately, it is impossible to go far in any direction without seeing that there is ample need for reform in this phase of fruit growing. A point less often noted, yet one that affects us as gardeners even more closely, is the sad want of a little more care being bestowed on espalier trees of Apples and Pears. In two instances of my taking charge of a fresh garden I have found the espalier trees in a most neglected condition, and in visiting other gardens where other branches are well done and bush and other fruits well cultivated, the same neglect in varying degree is apparent, and it is the exception rather than the rule to find really well-cultivated espalier trees. Year after year the fruit-spurs are allowed to thicken and lengthen, the young shoots getting further away from the main branches, every bit of young wood being cut closely in every season. The result is seen in small, mis-shapen fruit, and the appearance of the trees is like a thick and badly-trimmed hedge. So bad, in fact, do they appear, that at first sight it would seem impossible to do anything to renovate them, and the idea at once occurs to root them up and fill their places with healthy young trees. This, however, is not always advisable, especially in the case of Pears, and at all events it is worth while trying what can be done to improve them. Both roots and branches will probably require attention, and which shall be first depends upon the condition of the trees. If the shoots are very strong and vigorous, the roots must be attended to the first season, careful and judicious root-pruning being of the greatest advantage and serving to check the exuberant growth that is being made at the expense of fruit. Many of the strongest will most likely be found running downwards almost vertically, and if there are plenty of surface roots these may be cut off without any fear. All small and healthy roots must be taken care of and relaid as near the surface as possible, a liberal addition of burnt garden refuse being made to the soil as tending to the production of small fibrous roots. This should always be done when the soil is in a nice friable condition, and never attempted while wet and pasty. With trees, on the other hand, that have shoots not above the normal size, the first thing necessary is to regulate these so that sun and air can reach every part of the tree. The present is a capital time to set about the necessary thinning, just as the foliage is losing colour preparatory to falling. Many of the oldest spurs will have to be cut entirely out, using a thin, strong saw, those that are not quite so bad being cut back to where a few healthy fruit-spurs of young, clean wood can be left. It is not wise to thin too severely the first season, and in choosing the growths to leave give preference to those nearest the main branches, so that in due time the young fruit spurs that form where the old ones were cut entirely out will be close-jointed and not drawn owing to the thick foliage above them. Last year I thinned several old Pear-trees of such varieties as Jargonelle, Bon Chrétien, and Louise Bonne in the manner described, and so bare did they afterwards look that I did not expect any fruit this season. The trees have nevertheless given some very useful fruit, those of the last-named being exceptionally well coloured. What is of greater importance, the trees are studded with short stocky wood and have many promising-looking fruit-spurs. Anyone having such trees to deal with I can strongly recommend to set about them as early as possible. The wounds made will then heal before very severe weather sets in, and the removal of so much superfluous wood thus early will have the effect of assisting the finishing and perfect maturation of that left. C. H. S.

CORDON PEARS.

WHILST fully prepared to admit the value of the cordon system in Pear culture as producing very high-class fruit and enabling one to grow a great number of varieties on a limited area, the complaint must be made that several sorts are by no means a success. Their cropping is decidedly below the average, and so far as healthy growth is concerned it seems impossible to get them to grow freely. When planting trees on a wall a few years ago I trenched in a liberal dose of a thin top spit from a meadow, and every season since the trees have had an annual top-dressing, and a good mulching if the summer has proved hot and dry. Some have responded well to the treatment, but the failures are more numerous than one cares to see. I fancy the offending varieties would on a soil like this do better on the Pear stock; they certainly want something to give them additional vigour. Shoots come away fairly well, but the season has only run half its course before the tops shrivel, blacken, and die back quite one-third the length. That the stock in these particular varieties is responsible for this is, I think, apparent from the fact that others on the same wall and with precisely similar treatment went to the top in two seasons and have always been healthy and vigorous. Williams' Bon Chrétien, Louise Bonne, Glou Morceau, Beurré Diel, Pitmaston Duchess, and Josephine de Malines, are a few examples of sorts doing thoroughly well. Special offenders, on the other hand, are Beurré d'Anjou, Beurré Bachelier, Doyenné du Comice, Olivier de Serres, and Chaumontel. It is worth noting that fruit obtained from Beurré Diel cordons is vastly superior to that from old trees; the latter can only be used for stewing, but the cordon fruit is juicy, fairly melting, and good. In all cases ripening has been earlier, and that despite the fact that the fruit was allowed to hang as long as possible. For instance, I finished both Winter Nelis and Glou Morceau by the end of the first week in December, and good late Pears will be hard to find after that date. An old tree of Althorpe Crassane on a north-west aspect has proved an acquisition this year, keeping out longer than usual and ripening up well. Chaumontel and Zephirin Grégoire are just coming in. Among later sorts occasionally recommended that are not so well known are Marie Benoist, Mme. Millet, Nouvelle Fulvie, and Beurré Sterckmans. Perhaps some correspondent who has tried them will say if they are a success as cordons. E.

An uncommon winter-flowering Daphne (D. oleoides). — Amongst winter-flowering shrubs the Olive-like Daphne is very conspicuous. Although introduced from Crete upwards of 80 years ago, it is even now rarely met with. It is an evergreen, and forms a bush a foot or so in height. The small pink flowers are borne at the points of the growths. It succeeds well in a mixture of loam and leaf-mould.

Erica hyemalis alba.—This variety is by far the most popular of all the soft-wooded Heaths, and the fact is not surprising, as one sees quite small plants in about 5-inch pots simply laden with pure white blossoms. Even plants in this size of pot carry as many as eight or a dozen branches, and the contrast of the pretty compact dark green bushes and the myriads of white flowers is very pleasing.

INDOOR PLANTS.

PERSIAN CYCLAMENS.

Under proper treatment good flowering plants may be established within a year. As winter-flowering plants Cyclamens need no recommendation, but unfortunately they are not grown so extensively as they deserve. The reason probably is that where only a limited number of plants are required they are grown amongst other things, and do not meet with exactly the treatment they require; but once let anybody grow only a few and give them fair treatment, a rich succession of bloom, which will continue nearly throughout the winter, will be the result. The seed should be sown in the autumn months, and before sowing the seed it is a good plan to soak it for a day and a half or two days; the water may then be poured off and a little quite dry sand shaken among the seeds. The seed-pots may be prepared by filling them nearly full with any ordinary loamy compost, and then surfacing them over with a little finer soil, as loam, leaf-mould, and sand, sifted through a fine sieve. After spreading the seed evenly over the surface it may be lightly pressed in, but should not be covered with soil. A little fresh Sphagnum Moss may be used, and this should be cut up quite small, and just enough used to cover the surface. The seed-pots may be placed in the close propagating-pit, but should be removed as soon as the young plants appear, or if the pots are placed in a more exposed position, they should be covered with glass for a time. The seedlings should be pricked off as soon as large enough to handle, and must be potted off singly when they have made about three or four leaves. The compost for growing Cyclamens in should consist largely of good mellow loam, some well-rotted leaf-mould, and a little sand or soot may be added. Use the soot very sparingly for the young plants, and more liberally for the later pottings. The plants should be potted only moderately firm, and the crowns of the corms kept above the surface. During the winter the plants may be kept in an intermediate temperature, and they succeed best on a moist bottom, but should be in a light, open position, and as close to the glass as possible. They should be ready for potting into 4½-inch pots early in June, and some of the most vigorous earlier than this. Those potted in June may be at once placed in cold pits or frames, or if on a hot-bed that is nearly spent they will then get a good start. After the first week or so plenty of air should be given, and later on when the nights are warm the lights may be taken off altogether, and will only be required to protect the plants from storms or to provide a little shade during the hottest part of the day. A little extra shading may be necessary if the weather is very bright. Shading should be avoided as much as possible, however, and always taken off early.

Cyclamens do not make much foliage early in the season, but after the weather begins to get a little cooler the leaves come up very quickly. The plants should have plenty of room, so that the air can pass through them. This is a very important point, especially after the flower-buds begin to form; if crowded the buds will remain dormant and eventually damp off. Watering must always be carefully attended to, and after the pots are well filled with roots, some liquid-manure may be used, or a little fertilising matter be given occasionally. Cyclamens are subject to aphides, thrips, etc., and suffer very much if these pests are allowed to get established. On the first appearance of insects the plants should be thoroughly cleansed by smoking or dipping. It is not advisable to dip the plants after the flower-buds are formed. The difficulties of growing Cyclamens are more imaginary than real, and I believe failure is often caused by too much coddling and keeping the plants in too high a temperature, which not only weakens them, but is favourable to the most destructive kinds of insect pests. One more point must be considered—that is, the necessity of securing a good strain of seed. In saving seed, only those varieties of the best habit of growth and with the most distinctly coloured flowers should be selected; and if fertilised, the red kinds should not be crossed with the white varieties, or dull, indistinct colours will be the result. A.

White Persian Cyclamen.

A GAY GREENHOUSE IN WINTER.

To the Editor of "Gardening Illustrated."

I have been much interested in hearing the different ways by which one can have a gay greenhouse during the winter. Perhaps it may interest other gardeners with small greenhouses to hear how I manage to get my little greenhouse, which is 15 feet by 10 feet, to supply me with flowers for the house from November to April. I do not grow any summer things in the greenhouse, as I have plenty of outdoor flowers from April to November, and only grow enough to last through the winter and early spring. This is what I did last year. I bought 570 good bulbs from one of the many firms who advertise in Gardening Illustrated. Fifty Roman Hyacinths, 200 Freesias (I shall not have to buy these another year), 100 Narcissus in two sorts, 9 dozen Tulips in eight sorts, 50 Jonquils, 50 Ixias, and 12 Hyacinths in two sorts. These I divided into six batches, and planted them on 15th September, 15th October, 15th November, 15th December, 15th January, and 1st February. I planted all the Roman Hyacinths together on 15th September, as I wanted them for Christmas. I plant the Freesias, Roman Hyacinths, and Ixias in wooden boxes to cut from, as I find they last better in water than in their pots, and take up less room in the greenhouse when so planted. Of course, my selection of bulbs is not very varied; but I find I can have so many more bulbs for the money if I get a lot of one sort, and as I am limited to £2, I get a quantity of my favourite kinds. The bulbs do not begin to come in till Christmas at the earliest, but the Chrysanthemums last all November and a little way into December. I have only room for 50 pots, and grow the plants dwarf and shrubby, so as to get the greatest amount of bloom. The following varieties, which I grow, will all last a week in water, and, though not all new sorts, are good, bright colours, hardy, and lasting: Charles Davis, Kate Hearne, Baron Hirsch, Val d'Andorre, bronzy shades; Alberic Lunden, Etoile de Lyon, Viviand Morel, mauves; Sunflower, Phœbus, Jardin des Plantes, yellows; and Mrs. Cannell and Stanstead for whites; and Anemones, pure gold; Mrs. Carter, pale yellow, looks like Sweet Sultan; Princess Louise, mauve; Mary Anderson, tinted white. After the Chrysanthemums, the Cyclamens come in. I have about a dozen pots, white, red, and white and mauve. They last wonderfully in pots in rooms if brought in when the first two or three blooms are expanded. They last about a fortnight. Some of mine are old and some young plants, but they all come from seed gathered from the original three plants I started with. I also have in December a few pots of Double German Wallflowers and East Lothian Stocks, which are very fragrant. I have also two climbers, a Maréchal Niel Rose, and a "Geranium" Raspail's Improved, which has brilliant double red heads of flower and long stalks. This begins to bloom in December and lasts two or three months. This is all, except about 20 pots of different green foliage plants, small Palms, Ferns, Maidenhair Ferns, and "Geraniums." The temperature of the greenhouse is never more than 50 degs., as all the plants are so much stronger if grown cool. Of course there are numbers of other bulbs and plants one can have in a small greenhouse, but I have found that this selection gives one the greatest quantity of flowers at the least possible cost and in the smallest space. I have learned so much from Gardening that I shall be glad if my experience is of any use to others. I have only had a garden for four years, but I think there is nothing in the world which gives one so much pleasure as growing flowers, especially from bulbs and seeds. Tay Bee.

GARDEN PESTS.

Primulas attacked (*K. T.*).—Your Primulas are attacked by the grubs of the Black Vine weevil (Otiorhynchus sulcatus). I am sorry to say that, as far as I know, the only way of destroying these grubs is by searching at the roots for them and picking them out. They also attack Ferns, Cyclamens, Begonias, and other soft-wooded plants. The parent weevils are also very destructive, but they attack the foliage of plants, Vines, Ferns, Dracænas, and other things grown for their foliage often suffer much from them. As they only feed at night they are very difficult to catch. The plants they are attacking should be laid on their sides over a white cloth, or the cloth may be laid under the plants; then after dark a bright light should be thrown on them. This often causes the insects to fall, when they may easily be seen on the white cloth. If they do not fall the plant should be given a jarring shake, and be well searched over. They may often be caught by tying small bundles of dry Moss or hay on to the stems; the beetles hide in these during the day. The weevils are of a very dark brown or nearly black colour, and are about ⅝ inch in length.—G. S. S.

Centipedes destroying roots of Stocks.—When you speak of centipedes destroying the roots of your Stocks, etc., I suppose you mean snake millipedes, which are slow moving creatures, while the centipedes run very rapidly. They, moreover, are very useful in gardens, as they live entirely on small insects, worms, etc. The snake millipedes are very difficult pests to eradicate. Their skins are so thick and hard that, living as they do at the roots of plants, it is almost impossible to use

any insecticide of sufficient strength to kill them without injuring the plants—indeed, most insecticides have no effect on them, but a strong solution of salt or nitrate of soda will kill them if it can be made to reach them. Small bundles of dampish Moss or pieces of Mangold-roots or cotton-cake buried just below the surface make good traps. Pieces of slate, tile, or boards laid out near the plants they are attacking make useful traps, as the millipedes are fond of creeping under such things. The traps should be examined every morning. If possible, fallow the ground for some months, and give a good dressing of gas-lime. Keep it free from weeds and well broken up, so that the birds can get at them. For flowers use well-rotted farmyard-manure.—G. S. S.

Cyclamens grub-eaten (*H.*).—The roots of your Cyclamens are attacked by the grubs the black Vine weevil (Otiorhynchus sulcatus). See the reply to "K. T." in this week's issue.—G. S. S.

CHRYSANTHEMUMS.

Very late Japanese Chrysanthemums (*S. R. H. G.*).—You ask for a list of very late Japanese Chrysanthemums for decorations, also when cuttings should be inserted. A good time to take cuttings of the very late sorts is February, by which period of the year the old plants should be giving a capital lot of new shoots from their base. Cuttings of these should be made about 3 inches long, cutting off the shoots straight across below a joint. Insert these either singly in thumb pots, or three to four in 3-inch pots, only using the best compost, which should be of a light and sandy character. Press in the cuttings firmly or they may "hang"—*i.e.*, they may not have the soil pressed in all round them unless care be taken to effect this in the first place. You should find the following sorts of the Japanese meet your requirements: L. Canning, pure white; Niveum, very fine pure white; Pride of Ryecroft, a new variety and a lovely soft yellow sport from Niveum; Princess Victoria, white, nice dwarf habit; W. H. Lincoln, deep rich yellow, selecting only terminal buds; Le Rhone, bright yellow, a very late sort; Golden Gate, tawny yellow, very fine; Duchess of York, light yellow; Mrs. H. Weeks, grown in a free manner and invaluable for late December work, colour pearly-white; Challenge, golden-yellow; E. G. Hill, deep yellow and bronze; W. Wright, pale pink-tinted primrose, very fine; Graphic, white-tinted and suffused deep rose, grown on to terminal buds; this is in fine condition at Christmas; Tuxedo, a beautiful terra-cotta flushed crimson, rather tall, yet an excellent sort for cutting; Golden Dart, golden-yellow, very fine; Golden Gem, crimson-bronze, very late; Janette Sheahan, golden-yellow tinted bronze, dwarf; and Princess Blanche, pearly-white, dwarf. This and the last-named should be partially disbudded and grown well. The above is a first-rate selection.

Chrysanthemums—eighteen Japanese of easy culture for exhibition (*Tyro*).—Retain in your list Viviand Morel, Chas. Davis, Col. W. B. Smith, E. Molyneux, Miss Dorothea Shea (these last two you may find rather difficult, so we will include an extra variety or two, in case you may decide to discard them), Mme. Carnot, W. Tricker, Mlle. Thérèse Rey, G. C. Schwabe, and Phœbus. Supplement your list with Emily Silsbury, white; Lady Hanham, rosy-buff; Louise, blush-white; Mme. Ad. Chatin, white Japanese-incurved; Mons. Chas. Molin, orange-bronze; Mons. Chenon de Leche, reddish-salmon; Miss Elsie Teichmann, creamy-white; Prince of Madford, rich amaranth; Souvenir de Petite Amie, white; and Western King, pure white. Regarding their culture, we can only advise you to watch the hints given from time to time in GARDENING, and also to note replies given to other querists with reference to stopping and bud selection.

Chrysanthemums — fifteen first-class incurved sorts for exhibition (*Tyro*).—As you are a beginner only in cultivating Chrysanthemums for exhibition, we can fully understand your wish to grow easy sorts. To include these kinds we must necessarily omit some of the best sorts, and have every reason to believe you will, with application to the plants' requirements, succeed very well. Of those in the list submitted to us we can only recommend Baron Hirsch. Secure cuttings or plants of Jeanne d'Arc, white; and Brookleigh Gem, the lilac sport from that variety; Chas. H. Curtis, rich yellow; D. B. Crane, bronze-buff; Lucy Kendall, coral-red; Mme. Darrier, nankeen-yellow, shaded red; Miss M. A. Haggas, primrose; Robert Petfield, silvery-mauve; Violet Tomlin, purple-violet; George Haigh, rosy-carmine; Globe d'Or, golden-buff; Lord Rosebery, pale lilac; Mrs. Heale, blush-white; and Mrs. R. C. Kingston, pale pink, retain late buds. The majority of the foregoing are beautiful types of the incurved section, and, carefully grown, should give a nice lot of blooms to select from.

Chrysanthemums — how new colours are produced (*Chrysanthems*).—You ask by what process or by what means are Chrysanthemums in different colours produced. This is a matter far too important, and also too difficult, to satisfactorily describe here. Suffice it to say, that these, in most instances, are brought about by cross fertilisation and careful hybridisation. Chrysanthemums also are known to sport into several different colours, so that a seedling may be raised, and this may ultimately sport from one colour into another, until at last we may have several different shades of colouring represented in blooms of identical form and build. Take that lovely incurved bloom Princess of Wales, which is a blush-rose-coloured flower. From this sort we have a most interesting progeny, the colours represented after many years being quite diversified. There are blooms of pure white, primrose, bright rose, shaded yellow, bright violet-purple, and bright coral-red; this is just one instance of sports emanating from a single plant. But of the many novelties raised each year we may safely assert by far the larger number is the result of careful crossing, using the different colours in association with a definite purpose in view, and that is to produce a new, deeper, or unique shade which previously did not exist.

Chrysanthemums grown in the open and afterwards lifted, etc. (*Nemo*).—You cannot expect to grow these plants satisfactorily in pots if they are allowed to get dry occasionally during the summer. Chrysanthemums, to do well, must be constantly attended to, and must never be allowed to get dry. Of course, those in the open border, and which you propose to lift in September, will not need so much attention, neither do they want the liberal watering which so many enthusiasts give them. Strong, sturdy, and bushy plants should be the aim of the grower, and to produce these results a course of too liberal watering induces too free a manner of growth, with the consequent result—long and spindly growths, with poor and ill-formed flowers. Of the varieties mentioned in your list, you might with advantage retain cuttings of Gloire du Rocher, Florence Davis, Lady Saunders, Mlle. Thérèse Rey, Elaine, James Salter, Viviand Morel—try this again by all means. You can easily improve upon these even, but keep them, supplementing the selection with Source d'Or and yellow Source d'Or. These two sorts lift splendidly. Albert Chanson, bright orange-red; Mrs. W. Filkins, unique flower, yellow; Mrs. Chas. E. Shea, Mlle. Lacroix, and Annie Clibran—this trio of yellow, white, and soft pink are each identical in form; Golden Elsie, rich golden-yellow; Miss Gorton, cream, tinted rose; Royal Windsor, primrose-yellow, flushed rose; Reine d'Angleterre, rosy-mauve; Souvenir de Petite Amie, white; W. H. Lincoln, rich yellow; Pallanza, rich yellow; Phœbus, clear yellow; and John Shrimpton, rich crimson. Try G. W. Childs in the place of W. W. Coles. It is not so long in the petal, but it is a deeper flower and a far richer colour for decorative work.

Chrysanthemums—bush-plants for decorations (*Subscriber*).—We are pleased to respond to your request for a selection of one dozen Japanese sorts and one dozen incurved sorts, to be grown in bush form for decoration. The Japanese are distinctly the better of the two for this use, as the flowers are so much prettier and more interesting. On the other hand, the incurved sorts—except in a few instances—are not so likely to give you such good results. We should advise you to get the cuttings in early, and thus give the plants a long season of growth—so important if large bush-plants be the object in view. You would not need to pinch your plants very often, as you only want to get twelve to twenty blooms on each. If once your plants are seen to be making headway in the early spring, they may have the tips of the shoots taken out, and the growths, which by this operation are induced to break away from the base of the leaves, and are known as lateral growths, should be grown on to the number of three or four, according to the vigour of the plant or variety being considered. About six weeks after this they may be pinched again, carrying up resulting shoots, as previously described. No plant should be pinched after the second week in June, and from this pinching plants should develop of a kind that could not well fail to please you. We should prefer to pot finally into those 9 inches in diameter for most sorts, a few of the more vigorous-growing sorts being placed in those an inch bigger. The following selection will be found an invaluable one for your purpose: — Japanese: Western King, purest white; Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; Louise, pearly-white, tinted blush; W. H. Lincoln, golden-yellow, retain late crown buds; Australian Gold, pale yellow; W. Seward, deep crimson; Emily Silsbury, pure white; John Shrimpton, deep rich crimson, rather small, but grand colour; Phœbus, clear yellow; Mons. Charles Molin, crimson-bronze; Mrs. S. C. Probin, flesh-pink, incurving Japanese. Incurved: Mrs. Geo. Rundle, white; Mr. George Glenny, primrose, very pretty; Golden George Glenny (syn. Mrs. Dixon), rich yellow; Mme. Darrier, nankeen-yellow, shaded red; Mr. Bunn, bright deep yellow; Baron Hirsch, orange-cinnamon; Chas. H. Curtis, rich yellow; Jeanne d'Arc, blush-white, tipped purple; Brookleigh Gem, lilac-coloured sport from the last-named; Mons. R. Bahuant, rose-purple, large; D. B. Crane, bronze-buff; and Beverley, creamy-white.

Chrysanthemums—thirty decorative sorts representing all types (*Nemo*).—We congratulate you upon your wisdom in having such a representative lot of flowers in your selection, old though it may be, and we feel assured there is much more to interest and gratify one in such a collection than in one confined to any one particular type of the flower. Rather than advise you what not to grow, we prefer to give you a selection of 30 different sorts and thoroughly representative, including at the same time those worthy of inclusion in the list you sent to us. Japanese 15 sorts should be found in Source d'Or, orange-red; Mlle. Lacroix, white; Mr. Chas. E. Shea, light yellow sport from the last named; Annie Clibran, soft rose pink sport from Mlle. Lacroix; Clinton Chalfont, rich golden-yellow; J. Shrimpton, bright rich crimson; W. H. Lincoln, rich golden-yellow; William Seward, deep crimson; Mrs. E. G. Hill, lovely blush; Souvenir de Petite Amie, white; Chas. Davis, bronzy-yellow; Viviand Morel, silvery-mauve; Mons. Chas. Molin, crimson-bronze; Mrs. W. Filkins, yellow, small spidery flower; and Mons. Bernard, bright purple-rose. Incurved (6): Mr. Bunn, yellow; Mrs. Geo. Rundle, white; Mr. George Glenny, primrose; Golden George Glenny, rich yellow; Jeanne d'Arc, white, tipped purple; and Queen of England, blush. Japanese Anemones (2): W. W. Astor, salmon-blush and rose; and Sir Walter Raleigh, pale blush. Large Anemones (2): Mrs. Caterer, purest white, very free, dwarf; and Descartes, crimson-red. Pompons (3): Mlle. Elise Dordon, rose-pink, circular flowers, unique; William Kennedy, crimson, shaded amaranth; and William Westlake, rich golden-yellow. Singles (2): Mary Anderson, white, suffused rose; and Mrs. D. B. Crane, a lovely shade of cerise-pink. The foregoing selection is divided up into proportions likely to suit most growers, and follows in somewhat similar lines to the one sent to us. "Chrysanthemums and their Culture," by E. Molyneux, published 1s., may be had from any trade specialist.

Chrysanthemum Mychett White.—Amongst early-flowering Chrysanthemums suitable for planting in the open border, Mychett White—a new Japanese variety—is certainly one of the best. It is of bushy habit, and very free flowering. Its flowers are of the purest white and produced on long stems. It grows to a height of about 20 inches.—H.

HOUSE AND WINDOW GARDENING.

ANNUAL TREE MALLOW (LAVATERA TRIMESTRIS).

This annual Mallow is strikingly ornamental in the flower garden, where its handsome blossoms of white, pink, and crimson create beautiful effects during the summer and autumn months. In rich and well-worked soil the plants grow to a height of 3 feet, and are very free-flowering. In some parts of England this Lavatera is an especial favourite of the cottagers, and many a line of sturdy plants may be seen growing in rude health in their small gardens. In such gardens the seed is often sown in the autumn as soon as ripe, but spring propagation is generally resorted to elsewhere, the plants being brought on under glass at the first. As cut flowers these Lavateras, as may be seen from the accompanying illustration, are difficult to improve upon, being admirably adapted for arranging in tall glasses when the sprays are cut with a sufficient length of stem. It is best to cut after sundown

Flowers of the Annual Tree Mallow (Lavatera trimestris) in a vase.

and to place at once in water. A simple arrangement where these flowers are used alone has a charming effect, and one that increases in beauty as the tightly-folded buds open, which they do speedily when used for indoor decoration. The blooms are far more lasting than the consistency of their petals would lead one to suppose, which is another point in their favour for room work, for which their endurance exceeds that of many subjects apparently possessing far greater power of resistance. F.

TREES AND SHRUBS.

BLUE HYDRANGEAS.

When in Switzerland I had no difficulty in inducing Hydrangeas to take on the coveted blue tint. The soil I used was obtained from one particular district in Alsace, and was commonly called by florists and others who employed it "blue earth." So far from the soil itself being blue, it was very red, the unusually bright tint being due, it was said, to the presence of iron in quantity. Plants potted in this soil never failed to produce flowers of a fine blue colour. So powerful was its influence that plants grown in ordinary loam the previous year, and which had given flowers of the normal tint, produced blue flowers when merely shifted on, without in any way disturbing the old ball. By way of experiment I shifted some plants that were beginning to expand their blooms, and it was curious to note that immediately the roots began to work into the new compost the colour of the flowers was affected. I have had plants treated in this way which had parti-coloured heads of bloom, the centre being pink and the outside blue. A writer in the *Revue Horticole* claims to have reduced the production of blue Hydrangeas to a certainty. The roots of the plants to be operated upon are to be washed quite clean, and then to be repotted in sandy heath soil, adding 10 per cent. of iron-slag pounded fine, 3 per cent. sulphate of iron, and 5 per cent. of dried night-soil. Instead of this may be used 10 per cent. of pounded slate, 3 per cent. sulphate of iron, and 1 per cent. of ammonia. The plants are to be watered bi-weekly with water in which sulphate of iron has been dissolved in the proportion of about 40 grains to the quart. The writer also states that the blue colour taken on in the neighbourhood of slate quarries is due to the presence in the slate of from 25 to 35 per cent. of alumina, and of from 6 per cent. to 12 per cent. of sulphide and of oxide of iron. It is also owing to the combined presence of the sulphate and oxide of iron with alum that some argillaceous soils produce the blue colour in Hydrangeas. Assuming the above to be correct, it is easy to understand why soils, apparently totally unlike in character, should have the same influence on the flowers. Occasionally in peaty soils one sees this transformation in colour effected, whilst in complete contrast an identical change will be witnessed when the plants are in boulder clay. It only requires that the presence of some of the constituents above mentioned to be present, and the flowers will assume tints varying in intensity from a dull, slaty hue to bright blue. In Wales, near the slate quarries and on the clay, blue Hydrangeas growing in the open ground are common enough; but, and this is what has perplexed many, the variation in colour is frequently very great in quite a limited area. Thus in one garden the plants will, with no special care, produce blue flowers, whilst in another hard by they never depart from the normal colour. In connection with this subject I should like to know if any reader of Gardening has ever grown a variety called cyanoclada, and which has been described as the "Blue Hydrangea?" It was catalogued for some years by Mr. Knight, formerly of Battle, who, for aught I know, may still be offering it. It is not likely that an old-established florist would offer a plant year after year under a false description, and the question is, what is the blue Hydrangea? Did Mr. Knight take cuttings from plants growing in the open air, and which naturally gave blue flowers under the mistaken idea that they would be constant in colour, or did he really succeed in fixing a blue-coloured sport? Having never grown the plant in question, I am in no position to know whether this H. cyanoclada really produces blue flowers with constancy and in all soils. I am under the impression that this variety, if it is really such, has been offered in the advertising columns of Gardening, in which case some who read this may know something about it. Byfleet.

Lilium Harrisi failing.—Many failures have to be recorded with this Lily. Sometimes the bulbs refuse to start into growth at all, or if three or four are placed in one pot some will, perhaps, start weeks before the rest, those remaining dormant the longest usually being the weakest, and often failing to develop perfect blooms. I must confess to having had indifferent success with Harrisi for a year or two, but think I have now discovered its particular wants. One and the chief is that the bulbs be potted as early as possible after being received, as bulbs left in shops or on shelves in gardens for several months invariably shrivel and lose much of their weight, after which they do very little good. The same remark applies to all sections of Lilies. Harrisi also seems to need rather deep potting, say from 2 inches to 3 inches of soil over the bulbs, as if plump when put in, if left so that a portion of the crown is visible, shrivelling, more or less, takes place. Further, the soil in the pots must be kept pretty dry from potting time until new growth is, say, an inch long, and even then only small quantities of water must be given till roots are fairly numerous. Neglect of this rule generally ends in basal rot. I find, also, that stiff, non-porous soil does not suit it, or, at any rate, to be sure of the formation of young roots at the start, a good quantity of heavy sandy soil must surround the bulbs; in fact, it is a good plan to embed each in silver-sand and leaf-mould. Old gardeners who grew fine beds of these beautiful old Lilies lancifolium rubrum and album, used to mix abundance of leaf-mould in the beds each season, some using road-grit or the sweepings of walks and drives. Plenty of light is likewise needed, or a weak, elongated growth is sure to follow. Green-fly must not be allowed a footing, or in a very short time the foliage turns sickly and seldom recovers. Some say that the bulbs will flower twice in one year, but I find that the bulbs, after having flowered in pots, do not seem to be of much use.—C.

Lachenalia pendula.—This is one of the showiest, and, what is more, it is a kind that may be had cheaply, and therefore grown in quantity. Moreover, by planting these cheaper kinds in successional batches their season of flowering may be considerably prolonged. There is such a charming combination of colour in the bright red and green tips of the pendulous blossoms that almost everyone admires them, and if grown in quite a cool place they last a considerable time. They are equally pleasing when cut, and where the small offsets are taken care of from year to year a good stock may very quickly be raised. In a fairly dry house and not kept over-moist at the root Lachenalias are quite safe in a temperature as low as 40 degs.

The Garden Part.—*Now ready, for January, 1898 (containing all December, 1897, Nos.), with four beautiful coloured plates of flowers, also many articles on the best and newest plants, with numerous illustrations. Of all Newsagents and Booksellers, 1s.; or from this office, post free, 1s. 3d.*

DOUBLE CHINESE PRIMULAS.

THERE are many so-called double Primulas which are raised from seed, but these drop their flowers in the same manner as do the ordinary single varieties. The true double varieties do not seed, and the flowers do not drop off. Taking the old P. sinensis alba-plena there are few plants which keep up such a succession of bloom throughout the winter. Though the individual flowers are not so large as those of other varieties, it is certainly the most prolific. The varieties fimbriata, candidissima, and Fairy very closely resemble each other, all having rather fuller flowers, the petals fimbriated instead of being divided into two lobes as in the old variety. The varieties raised by the late Mr. Gilbert some years ago are also well worthy of attention, but they are more difficult to manage. Being of vigorous growth they do not usually form a number of crowns like the old variety, hence they cannot be so readily propagated, yet where they do succeed the fine large flowers are much appreciated, and they are well worthy of the extra care necessary. I find there is little difficulty if the stock is healthy to start with. They should stand on a cool, moist bottom, well exposed to the light, giving sufficient fire-heat to keep a fairly dry atmosphere, and careful attention to watering, especially avoiding too much moisture. At the same time the slender thread-like roots soon suffer if allowed to get too dry. A good compost for potting is fibrous-loam, leaf-mould, and some well-rotted manure, with a liberal addition of sharp sand. In potting the plants the crowns should be kept well down on the surface. It is a mistake to suppose that if the leaf-stalks are partly buried damping will follow; the contrary is the case, for the new roots come from the stems, and as they advance in growth these will not be able to reach the soil, and the plants soon get weakened. When the pots are well filled with roots liquid-manure may be used freely, but if grown on too vigorously they do not flower so freely as plants of moderate growth.

H.

Wintering Cannas.—There is a widespread idea that Cannas should be kept dry during the winter months, and in the case of the old-fashioned kinds with their stout rhizomes this may be done without injury; but many of the large-flowered varieties, especially those with yellow blossoms, more or less spotted with red, have weak rhizomes, that soon suffer if kept too dry. The newer kinds that have been propagated from to as great an extent as possible have in many cases but a small underground rhizome, and they are quickly injured by extremes either of drought or moisture. The new varieties purchased from the Continent generally arrive here very early in the new year, in the shape of dormant or almost dormant rhizomes, without any soil whatever adhering to them. I prefer to pot these directly on receipt, keeping the growing point of the rhizome just below the surface of the soil, which is from that time kept slightly moist, sufficient, in fact, to induce the formation of roots, and in this way the young leaves soon push up and the plant continues to gain strength; whereas if kept dry for a longer period there would be a great risk of injury to some of the weaker ones. The warmest part of a greenhouse or even a slightly higher temperature will suit these Cannas well at this season. Where it is required to increase any particular variety each growing point will form a separate plant, but in the case of the newest kinds, when obtained from dealers, they are seldom supplied with more than one good growing point each.—H.

Lonicera fragrantissima.—Among the earliest of all hardy shrubs whose flowers greet the new year are this species and its close ally, L. Standishi. Neither of them can be called showy, yet they are both well worth growing because their flowers, although small, are abundant, and have, besides, a most pleasant fragrance. L. fragrantissima, which is already in bloom, is one of Robert Fortune's introductions from China when collecting for the Royal Horticultural Society. One of the first to flower it in this country was the late Mr. William Ingram, of Belvoir, when he was at Hatfield over forty years ago, and he described the flowers as combining the fragrance of Orange-blossom with that of the Honeysuckle. It is a deciduous shrub (not evergreen, as the books so frequently have it) of low, spreading growth, with short, elliptical or obovate leaves, which, except when young, are nearly or quite devoid of hairs. (L. Standishi, on the other hand, has hairy, ciliated leaves.) The flowers are produced in several pairs from the joints of last year's wood, and they are creamy-white or pale yellow. This Honeysuckle is useful for early forcing, a few plants in flower filling the greenhouse with their fragrance.—B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2500—**Trollius, etc.** *(T. M.).*—All the plants you mention are quite hardy, and may be planted any time during mild weather, and when the soil is not too wet.

2501—**Cutting back, "Geraniums"** *(S. Harden).*—We would advise you to take the tips from your Zonal Pelargoniums and root them in February next. A 4-inch cutting would be sufficient, and would give you useful plants for summer bedding and flowering.

2502—**Camellia buds falling** *(Jas. Fife).*—Camellias are far from good plants for window culture; in fact, you could scarcely have worse, and they will not stand the dry air of a living room. The buds now forming would be growth buds. You had far better dispose of the plant if you have no greenhouse.

2503—**Treatment of Streptocarpus** *(Paradoxa).*—Do not dry the Streptocarpus too much. Ordinary greenhouse treatment, with a temperature of 60 degs. to 65 degs. and not too parching a bottom, will suit them well. Send us a bloom and leaf of your plant when in flower again. It is difficult to name with any certainty from your written description.

2504—**Ventilating a greenhouse in winter** *(Devon).*—The weather, season of year, and class of plants growing, each have a great deal to do with ventilation. The usual greenhouse subjects would only need a very little top ventilation at this time of year. When Roses and other half-hardy plants are ripening, they need side as well as top air; but, generally speaking, it is wise to avoid the draughts thus caused.

2505—**Soil for Malmaison Carnation growing** *(Mrs. Mayrick).*—Well-decayed cow-manure is better than horse-manure for Carnations. A good compost can be made with one half turfy-loam, and the remainder made up of cow-manure and leaf-mould with a little soot and coarse sand. Do not break the compost up too finely, and pot fairly firm. If growing in the open borders you might use the same compost, or a good depth of yellow loam.

2506—**Greenhouse climbers** *(Lady Amateur).*—You pruned the Solanum and Plumbago too hard. Give a fair amount of water, and a temperature of 55 degs. as nearly as possible. When new growth commences a little weak liquid-manure and an occasional overhead syringing will benefit. If you cannot provide more space for the Passion-flowers they will not bloom well. We prefer large pots to a border for these, as riper growth can be secured without coarseness. Do not over prune.

2507—**Camellia grafting** *(Camellia).*—This is a bad plan. We have not illustrated it for that reason, but if you follow upon the same lines as noted in our issue for Feb. 13, when dealing with Roses, you should succeed. We there give sketches of the different forms of grafting. It is a slow process and scarcely worth the attention of amateurs. Strike cuttings of ripened growth in August or early September. These are more satisfactory than grafted plants, and take no longer to procure than when raising stocks.

2508—**Brussels Sprouts** *(W. G.).*—It is always best to allow the heads or tops of Brussels Sprouts plants to remain on the stems as long as possible, as these not only give the stem protection from frost, but so long as they keep growing fresh side sprouts are being produced. So long as leaves are green they should be permitted to remain on the stems, as these help to increase the size of the sprouts. It is better to cut these from off the stems than to pull them, as later, after the sprouts are dead, side shoots break out, and these gathered when a few inches long prove the most delicious greens.

2509—**Moving Yuccas** *(J. C. Tebb).*—Yuccas will move very well now. They succeed well in loam, but are not particularly exacting in the matter of soil, as they may often be seen in the best of health in varying staples. They make handsome plants for tubs or large garden vases if given sufficient drainage. For this method of culture Yucca recurva and Y. filamentosa are the most suitable varieties. If the plants in question are large and happen to be Y. gloriosa they will probably require rather deep digging on removal. The longer roots may be shortened back with a sharp knife without injury to the plants. As no particulars are given as to variety or size it is difficult to afford more detailed advice.—F.

2510—**Lilies in pots** *(Swansea).*—Good sound bulbs of Lilium lancifolium should go singly into about 6-inch pots, or three into a 9-inch pot. Let the soil be composed of turfy loam and good peat in equal parts, some old hot-bed-manure and sharp white sand. Use the turfy pieces for drainage. Let the tops of the bulbs be just about ½ inch under the soil, unless you do not quite fill the pots, then keep the bulbs tops level with the surface, as you can add some soil after roots have been formed. In potting or planting outdoors, place some sharp sand about the bottoms. You should stand the pots on a hard bottom outdoors on a south aspect, and cover up with Cocoa-nut-fibre or ashes for a few weeks to help roots to form before getting them under glass.

2511—**Young bush fruits** *(J. C. B.).*—It will not be wise to look for fruit from your newly-planted Gooseberry and Currant-bushes next year. It is so much better to induce them to make good roots, and thus get well established, and that is best done by cutting the young wood back fairly hard—say, to one-third of its length, whilst any weaker shoots may be cut back to about two leaf-buds. You can make cuttings of the shoots thus cut off. Another year you should shorten back the summer shoots of both Gooseberry and Black Currant-bushes a little, and Red Currants much harder. The two former bear on the young wood; the latter do not, but on spurs that come from hard pruning of the young wood. Give your bushes after pruning a mulch of long manure about the roots.

2512—**Manuring Apple-trees** *(Q. Q.).*—The best time to manure Apple-trees that are fairly robust is in the summer, when carrying a crop of fruit. They may also be advantageously manured in the following winter if the fruit-crop seems to have materially exhausted the trees. You will find a good mixture to be superphosphate of lime, and either Kainit or basic slag in equal parts; but the Kainit is the quickest to dissolve. Give to each tree a dressing at the rate of 1 oz. per square yard, and well fork it in. Of course, much depends on where the roots are. If the trees be old they may be a long way off. If young trees, manure dressings where not fruitiug may only serve to make the trees too vigorous and unfruitful. The nearer the roots are kept to the surface the more easily are they fed.

2513—**Peas in a frame** *(O. O.).*—It may be unwise to manure Peas sown to stand in rows in a frame, as if at all close together the result would be to create strong growth, dense crowding, and no crop. You do not say what room you have given your rows of Chelsea Gem. We fear, unless you have them in pots, that you will find them a failure. Peas want ample light and air, but not too liberal a root-run in a frame. Your rows should be 20 inches apart, and then when staked in a frame the plants will run to 2 feet in height at least. If your soil be very poor, and growth is poor also, then give a dressing of soot. So soon as the plants are through, stir the soil, then wash it in by watering. When the plants are a few inches in height get a little guano and lightly dress it between the rows, stirring it into the soil.

2514—**Celery eaten by slugs** *(Bodmin).*—It is intensely annoying to have blanched Celery eaten up by slugs, but some of the trouble might have been avoided had the soil, each time earthing up was done, been well sprinkled with fresh slacked lime. However, you have now three courses open. First, remove the soil from the Celery and well dusting the plants with fresh lime, then, as the soil is replaced, give two or three other dustings to it; or you may lift out the Celery-plants, preserving the roots, and handling each one carefully, and lay them in thickly on their sides, giving to each layer, before covered up with soil, free lime dustings. In this case the soil must cover up the stems as high as it did in the ridges; or you can, as you suggest, lift and store in sand, but the plants in that case would not endure so long.

2515—**Apples for windy garden** *(S. R. H. G.).*—Certainly, for such a wind-swept position as your garden is, Apple-trees, as either cordons trained to stakes or trellises, or horizontally trained to wires near the ground, or as horizontally trained espaliers, are best. Why not plant the espaliers to grow 5 feet in height, at 4 feet from the edges of the paths, and have horizontal cordons about 15 inches from the paths? Also you could plant single upright cordons, tied to stout stakes, anywhere amidst the other trees; all these being fixed would not be swayed by the wind. For cordons, get varieties budded on the Paradise-stock, but for espaliers the Crab-stock may be best. Very late-keeping dessert Apples are not the best; still, you can try Cox's Orange Pippin, which will keep well, Sturmer Pippin, Cockle Pippin, Hormead's Pearmain Rosemary Russet, and Adam's Pearmain.

2516—**Bone-meal manure** *(J. B.).*—Your garden ground has evidently been rather over-dressed with animal manure. A good trenching now, breaking up the bottom 12 inches under the top spit, will do more good than fresh manure dressings. Then if snails and slugs give you trouble you seem to want some ducks running in the garden for the winter, but that may not be possible. Just now these snail pests are dormant, but in the spring, so soon as they show, especially after rain, have fresh-slacked lime, and dust all the ground over freely. Do this every few days, or occasionally use soot, which is also a valuable manure. Bone-meal should be mixed with Kainit or basic slag, thus giving phosphate and potash. Dress the ground with it as it is being dug for cropping, at the rate of 74 lb. per rod, as these manures are concentrated and quickly soluble. One hundred-weight is as useful as a big ton of the best animal-manure for the immediate crop.

2517—**Young fruit-trees** *(W. H.).*—We must assume when you refer to some of your fruit-trees being clubbed at the roots that they have been badly treated at

the roots, and have not been previously properly planted. If your soil is good, and you have planted the trees in the best way, and especially not too deep, you may hope that they will do very well in a year or two. If the club roots put out plenty of fibrous roots all will be well. If they do not then there will be no growth, and the trees will be useless. Something may be due to the kind of stocks on which the trees are marked, but with respect to which probably you know nothing. Some old lime-rubbish, wood-ashes, and bone-flour, mixed with fine soil, put about the roots might help to induce the formation of fresh small, fibrous roots. It will be well to prune the trees fairly hard presently, after the soil is settled, as that will induce good growth next summer, and that leads to strong root action.

2518—**Seakale** (*Wiltshire*).—Most cuttings of Seakale for planting to produce strong crowns for forcing next autumn should be in lengths of about 5 inches, the tops being cut across level and the bottoms rather slanting to enable the planter to discern top from bottom. They should be cut from the side roots found on the thick stems beneath the crowns, then when made be laid in thickly in rows in fine soil, the tops being just covered. So laid in they calluse over top and bottom, and often, if the planting is deferred till March, have begun to push roots. The soil in which planted then should have been trenched and well-manured. The cuttings should be dibbled in 12 inches apart into rows 20 inches apart, being just buried. When crowns appear go over and thin them out to one in each case. Keep the breadth well hoed, and give a couple of dressings of nitrate of soda or common salt during the summer. Heat is not needed to induce roots; it would be rather injurious. Give this treatment every year, and each winter you should have fine Seakale roots and crowns for forcing or blanching indoors in the dark.

2519—**Various** (*One who values "Gardening"*).—You had better, with the aid of a fork, examine the border in which your Peach and Nectarine-trees are growing. If dry, then an occasional good soaking of water, especially washing in a good dressing of soot, will do great good. Trees that look ever so well in the winter are yet often dry at the roots when the borders are under glass, and then drop their flowers badly in the spring. If the soil be moist no present watering is needed, but a soaking may be needful when the buds begin to swell in the spring. Very much depends on whether you have plants in the house from the watering of which there is drip. If you give the border, just scratched in, about April a dressing of bone-meal, basic slag, and sulphate of ammonia, at the rate of 1 oz. per square yard, or even some soot, lime-rubbish, or wood-ashes, you may do the trees great good. Give this after the fruits are set. The trees now at rest need little syringing, but plenty of ventilation. They should, however, be examined to see that they are free from scale or other insect pests. Good free washings with a syringe are needful when the trees are full of foliage. You should get your "Geranium" cuttings from under the stage into the light and air. The tops may be taken off and set as cuttings if you have a small hot-bed to root them in. If set in a cold-house they would, being so sappy, soon rot; otherwise, March will be the best time for putting in cuttings. Let your Ivy-leaf "Geranium" continue to grow if you have plenty of room for it, and it will bloom freely next summer. If not, then pinch out the tops of the shoots.

2520—**Hollyhocks** (*F. D.*).—Whether Hollyhock plants be hardy or otherwise depends somewhat on the age and condition of the plants and the nature of the soil, as well as of weather. Young plants raised from seed sown the preceding June, and planted out where to bloom at the end of September, rarely suffer unless the soil be very wet, or water lies about plants in the winter. Old plants or stools, those that have bloomed some two or three preceding years, rarely stand hard weather well, because they have about them so much old wood that is usually in a partial state of decay. To have good, healthy plants that suffer little from the troublesome fungus, and nothing from frost, it is so much better to raise a few plants from seed every year. If seed must be purchased it is not dear, and first-rate double strains are plentiful. If preferred, some seed from the best varieties may be saved, but doing so necessitates the keeping of the rather gaunt stems standing some time after the flowers are over. To bloom two years seems to be long enough, and with a proper succession of young plants coming on each season there is no need whatever for the keeping of old ones. Then if the dread fungus does prevail, and it does so almost everywhere, the longer the plants remain in the same place the worse do they become affected. Raising seedlings is easy work, as seed sown outdoors in shallow drills, kept moist, and if need be for a few days after sowing lightly shaded, soon germinate and give capital results. If sown thinly the seedlings can be left in the drills till the autumn, and then transplanted to their blooming places. Hollyhocks repay good culture. Deeply worked soil, fairly well manured, suits them, and robust growth helps to counteract fungoid attacks.

2521—**India-rubber-plant leaves turning yellow.**—I have an India-rubber-plant in my greenhouse, and it has grown well till now, but now five of the leaves are turning yellow, and the top seems to be dropping off. I have kept it in a temperature of from 50 degs. to 60 degs., and have syringed the leaves now and then. Could you tell me the reason of it going so, and what I could do to remedy it? I heat with a flue. My "Geranium"-buds have gone wrong, too. They seem to rot one after another. I have a window in one end and another in the other at the top. Thanking you in anticipation.—ANXIOUS ONE.

*** *The dry air, caused by the flue, is the reason of your failure. If Zonal Pelargoniums fail you are not likely to succeed with Ficus elastica (India-rubber). It also requires a temperature of 65 degs. to 75 degs. Cold is probably the cause of its point dying off, wet and cold combined being very harmful.*

2522—**Failure of Cyclamens.**—Regularly from year to year the bulbs have been carefully potted, placed on high shelf in greenhouse (60 degs.). They make abundant foliage, but only two or three flowers at best.—READER.

*** *If your plants grow well and make ample foliage, it is clear you have a bad strain, so far as flowering is concerned. We should obtain a fresh strain.*

2523—**Failure of Heliotrope.**—I should be greatly obliged by some information as to this! The plants were carefully potted and placed on separate stands in good airy conservatory (temperature about 60 degs.). After doing well for a month they have begun to go back; leaves blacken, plants look thin and miserable and no sign of flower. They have been well watered, and treated requently with artificial-manure.—READER.

*** *Heliotrope needs a higher temperature than you have afforded; nor should it have an airy position at this season. If you have fumigated or supplied cold water either to roots or growth, that would also account for the failure.*

2524—**Grevillea robusta.**—When is the best time to sow seed, and in what soil and temperature?—CONSTANT READER.

*** *Sow early in March, using a compost of light loam, coarse sand, and leaf-soil in equal proportions. Just cover the seed, standing the pots or pan in a dark propagating case until the seedlings appear, when more light should be afforded. A temperature of 65 degs. to 75 degs. is ample.*

2525—**Pruning Clematis Duchess of Edinburgh.**—When and how should I prune my double white Clematis, supposed to be Duchess of Edinburgh? I have had it four years. About 18 inches from the ground it forms a bushy growth of long branches, which now have green buds on them.—I. M. P. M.

*** *This Clematis, like the remainder of the Florida type, should not be pruned. It flowers upon the ripened growths of the previous summer, and it would only be sacrificing flower to prune this away.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Brockweir.*—The yellow bloom you sent is as near as we can judge W. H. Lincoln, and the other—the carmine flower—is undoubtedly Commandant Blussett. You have grown the plant all right, but the fault lies in the type of bloom—which is not particularly pleasing—that you sent to us, being quite characteristic of the variety. Always send a portion of stem and foliage with blooms for name.——*Morecambe.*—Helleborus niger altifolius.——*P. Ebsworth.*—1, One of the dwarf Campanulas; 2, Acacia armata; 3, Unrecognised. This is all we could make out of the plants sent. They were not very good specimens.——*Jane Smith.*—1, Sedum rupestre; 2, S. album; 3, S. acre; 4, Saxifraga cæspitosa.——*Wm. Holmes.*—3, Euonymus latifolius variegatus; 4, Choisya ternata (Mexican Orange-flower); 5, Anthericum variegatum; 6, Please send in flower; 8, Hypericum; 9, Veronica Andersoni. Please send flowers or fruit of the others.

Names of fruit.—*S. D. E., Cambridge.*—1, Striped Beaufin; 2, Gathered too soon. Too shrivelled to tell; 3, Golden Noble.——*G. G. Hildyard.*—Durondeau Pear.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and addresses of sender.

E W, Winchester.—We know nothing of "Viola-nut." Send pod and one or two seeds with information as to source.

The Photographic competition for 1898.—We have added another class—namely, that for picturesque small gardens, including town and villa, rectory, cottage, or any other kinds of small garden.

LAW.

Garden tenancy.—On March 1st, 1897, I took, at an annual rent of £2, a piece of garden land containing a quantity of fruit-trees. I paid the rent of £2 in June. I have not taken the garden as a market-garden, but simply for a pastime. Will you kindly let me know, through your columns, what notice I shall have to give to leave? What notice I should have—to quit—from my landlady? And, also, could I remove any trees I have planted during my tenancy? There is no written agreement.—F. J. A.

*** On the facts stated you are undoubtedly a yearly tenant, and you must give half a year's notice to determine your tenancy, and your landlady will have to give you the same length of notice, and in either case the notice must expire with a year of tenancy, that is to say, on March 1st in some year. You will not be able, on quitting, to remove any fruit-trees or other trees planted by you during your tenancy.

Difficulties with garden tenant (*R. P.*).—(1), You say that you let the land for one year from March 25th last, and so, if there were no words used implying that the tenancy was to be from year to year, the tenancy ends on March 25th next without any notice from either party, and it cannot be determined sooner, except by mutual consent. But you add "at the annual rent," which implies that the tenancy was to be from year to year, and if so, and there being no agreement as to notice, the tenancy can only be determined by half a year's notice, and that notice must expire on March 25th in some year. (2), There being nothing on the land to distrain, your only method of recovering the rent is by action in the county court. You may at once sue for the rent due at Michaelmas, and for the next rent as soon as it becomes in arrear.—K. C. T.

Distress for rent in arrear.—A, who is a farmer, was in arrear with his rent, and the landlord distrained on A's stock, and sold cattle and corn until the amount of the rent was realised, when the sale was stopped. The same day A received from his landlord a year's notice to quit, and on the same day the landlord re-let the farm to another tenant, and told the new tenant he might take possession at once and cultivate the land. The new tenant took possession, and cultivated the land, and put cattle on to graze. A has some roots and some cereals on the place, but the new tenant told A that the steward had given him orders to pay for none of these things. Can A claim for such matters?—A CONSTANT READER.

*** If A did not voluntarily agree with the landlord to give up the place to the landlord or to the landlord's new tenant, A may not only claim for the matters mentioned, but for many other things. The landlord has acted beyond his powers, for, unless there be a forfeiture clause operating in the event of a distress for rent, the landlord had no power to re-enter to take possession, and A may recover heavy damages for trespass from the new tenant, and the landlord will also be liable in a heavy sum. As it is not stated whether A has any written agreement of tenancy, the best advice I can give is that A should consult a solicitor without losing a single day.—K. C. T.

BIRDS.

COMPARED with the gorgeous plumage of the Humming-birds, Trogons, and other tropical species it exhibits something of the same chaste and quiet kind of colouring which distinguishes our native wild flowers from the more gaudy flowers of the tropics, and our native wild birds may well be termed our "flowers of the air." Amongst them a surprisingly great variety of shades of colour is to be seen, and even the out-spread wing of a cock Sparrow is a study in this respect. The silver streak in the Linnet's wing most elegantly relieves the sober tone of the rest of its plumage. Nothing can be finer than the delicate rosy-pink of the Bullfinch's breast. The iridescent metallic lustre of the gold-tipped feathers of the Starling, the soft olive-green and gold of the Greenfinch, the cheerful blues of the Titmice, the exquisite contrast of pure black and white in the Magpie, the singular combination of blue, white, and black in the Pied Wagtail, the striking arrangement of red, white, black, and golden-yellow in the Goldfinch, and of fine azure-blue, pink, silver-white, and black in the Chaffinch, the numerous finely graduated shades of yellow and brown in the Yellow-hammer—all these are but a few of the more familiar examples of the great variety which exists in the plumage of our native wild birds. In the combinations or shades of colour which are peculiar to each species the most perfect harmony is found, and no crude discords of ill-matched tints are ever seen. In connection with this subject it may be observed that in most of the small birds the feathers which cover the abdomen are white. This appears to have been wisely intended to protect that tender part of the body in a special manner from cold, as the bodily heat is not so easily lost by radiation when it has to pass through a white or light-coloured covering. It would appear to be for the same reason that almost the entire plumage of most of our sea-birds, which are always more or less exposed to cold on the shelterless sea, is of some light-coloured or neutral tint, through which the bodily heat does not very readily pass away by radiation.

This topic of bird plumage suggests to me the remark that it is difficult to allude to or think of the present shocking fashion of trimming ladies' hats with slaughtered Robin Redbreasts, Swallows, and other birds, without feelings of sorrow and indignation. The practice is most repulsive to anyone who possesses a spark of humanity or even of good taste, and is only

comparable to that of the Red Indian savage, who decks himself out with a string of human scalps.

The constant cheerfulness of our smaller birds is a very observable and attractive trait in their character. Like the flowers of the earth, they enjoy and are most cheerful in the sunshine, and one of the most charming sights I remember to have seen was that of a Goldfinch singing amid the Apple-blossoms in an orchard on a sunny day in May some years ago. It is only when suffering from prolonged cold and hunger in winter that they become dull and dispirited through sheer bodily weakness; yet, even in that dreary season, the cheerful song of the Golden-crested Wren and the notes of the Redbreast are often heard.

On the other hand, while this perennial cheerfulness of theirs betokens an intense enjoyment of life, nothing can be more touching than the mute resignation with which a little bird which has received a fatal wound or is sick "unto death," will creep away into some dark nook or corner to die. However severe the pain it may be suffering, no gesture or note of impatience or complaint is seen or heard from it. Muffling its feathers and covering its head with its wing, it appears as if composing itself to sleep, but its quick, short breathing shows that such is not the case. Where it has taken up its position, there it remains, voiceless and almost motionless, until, with a few sharp, short, convulsive struggles its sufferings are suddenly terminated, and as silently as they were endured.

For the preceding paragraph I may, perhaps, be set down as a victim or votary of what some hard-nibbed writer has been pleased to denounce as "the pathetic fallacy." Well, without some exercise of sentiment (which, after all, simply means "feeling"), we should, most probably, find this world a very much worse kind of place than it is, and I do not envy the originator of the expression the callousness which he appears to claim in his application of it.

The intelligence and reasoning powers of birds are sufficiently established by the fact that many kinds can, without much difficulty, be trained to various performances. The trained Hawks and Falcons of the olden times struck down their quarry and returned to their keeper at his call. The little Red-poll, drawing up the tiny bucket of water attached to his cage, tucking in the slack of the cord under his feet as he hauls it in with his beak, and then, when he has had his drink, removing his feet off the cord to allow the bucket to fall back to its place, must exercise some thought and reasoning faculty in doing so. Some years ago a foreigner exhibited, in some of the more retired streets in London, a number of Pigeons which were trained to go through various evolutions in the air at the sound of a bugle. At a certain call, they all started from the top of the large wicker cage in which they were carried about on a hand-cart and flew down the street in company. When they had flown all together for some distance, a different call from the bugle caused them to separate into distinct parties, one of which kept to the right and the other to the left side of the street. Another different call brought them all together again, when, on a fourth call being sounded, they all wheeled round at once and returned to the top of the cage. After this, they went through various other evolutions of a similar character. Their discrimination of the various bugle-calls, and the promptly accurate manner in which they performed the evolution denoted by each call plainly showed that they must have possessed no small amount of reasoning power.

Starlings, and especially birds of the Crow family (the Jackdaw, Magpie, Raven, etc.), exhibit a high degree of mental activity, and, along with this, when domesticated, manifest the strongest affection for their keeper, if he is kind to them. I have seen many instances of this. Even the homely Rook, whose whole life appears to be spent in the toilsome occupation of digging like a day-labourer in the fields, when taken young and treated kindly will be found a most interesting and affectionate pet. Of the following instance of memory and affection in a bird of this (Crow) family, I can speak with authority. In my earlier days, one of my brothers had a pet Magpie, which he had reared from the nest and named "Jacob." The bird was very tame and went about the house and premises just as if he was "one of the family." He was more particularly attached to my brother and always saluted him by calling out his own name "Jacob, Jacob," which he had learned to pronounce very distinctly. Unfortunately for "Jacob," he commenced to amuse himself by carrying spoons, penknives, and other small articles out of the house and hiding them where they could not be found again. In consequence of this, orders were given that he should be removed, and my brother, with great reluctance, gave him away to an acquaintance who lived about three miles off and who was fond of birds. Some three or four months after this, my brother happened to revisit the locality and, as he was passing near the house where he had left "Jacob," he observed three or four Magpies together on a tree, fifty or sixty yards off, at the other side of a field by the road. While he was looking at them, he was surprised to see one of them leave the others, fly across the field straight towards him and alight on his shoulder, calling out "Jacob, Jacob." He at once recognised his old friend, who then commenced to run his beak over his face, shaking his wings all the time and appearing delighted to see him again. After paying his respects in this way for a few minutes, he took his leave and rejoined his companions on the tree.

My brother never saw him again, for, not long after this, poor affectionate "Jacob" was wantonly shot, as he sat sunning himself on the roof of his owner's cottage, by a neighbouring gentleman's son, a "noble sportsman" just returned from school for his holidays.

In connexion with this subject of the intelligence and affection of birds, I may mention a very touching incident. When the remains of the late Charles Waterton, Esq., were being conveyed to the mausoleum which he had built on an island in the lake at Walton Hall, and in which his wife had been previously interred, a flight of the birds which he had loved and protected during his lifetime accompanied the funeral *cortège*, and followed the body of their departed friend across the waters of the lake until it was laid in its last resting-place. This very remarkable circumstance is alluded to in an article on "Eccentric Burials" in one of the numbers of *Notes and Queries* for October or November, 1892, by a gentleman who states that he had heard it spoken of at the time when it took place. Established on good authority, it speaks for itself. Will any of our "pathetic fallacy," friends venture to explain it away?

WILLIAM MILLER.

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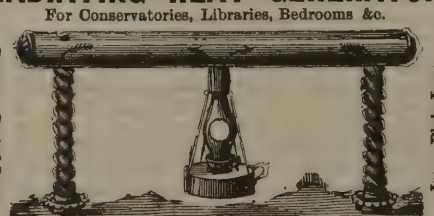

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GARDENING ILLUSTRATED.

No. 983.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JANUARY 8, 1898

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CHRYSANTHEMUMS.

NOTES ON VARIETIES.

Calvat's Australian Gold.—There will, I fear, be many failures with this variety on account of the buds being retained too early. Such buds look particularly promising for a time; but after the first few florets open there is either a refusal to develop further, or the flower becomes contracted and in a small mass, with an undecided form and an absence of colour. But from late-formed flower-buds, if the plant has been well grown, a magnificent bloom opens. It is then a full, massive specimen of interlacing petals, which build up into a perfect globe. The colour, a soft, light yellow, is also charming. It is an easily-grown plant, and without a doubt one of the finest Chrysanthemums yet introduced.

Lady Hanham may be noted not only because it is a sport from that grand flower Viviand Morel, and is therefore similar in size and form, but the colour is novel and beautiful. It may be described as salmon-rose. The variety comes variable in its tints, like Charles Davis, another sport from the same parent. These are all splendid amateur sorts, being good as big flowers, and capital kinds to form a massive bush plant, with a large number of blossoms.

Ella Curtis.—This is a very fine new variety to grow for show flowers. Colour bronzy-yellow. The petals are of extra length, width, and substance. They form a huge, graceful mass.

Modesto was highly praised last year, but too much has not been written in its favour. It is the deepest of yellows in colour—quite an orange tint. The blooms, in shape, are inclined to incurve. Its petals are thick and lasting. It is a free-flowering kind, makes a nice bush-plant, and is equally useful in producing large, handsome specimen blooms. Growers for market, especially, should make a note of it, the general merits of this variety being likely to answer their purpose well.

Simplicity.—There are many good white Chrysanthemums, yet this is a welcome addition. It has particularly long florets, and from the most tiny bud seems to push out a bloom of large size and graceful form.

Thomas Wilkins is by no means the least beautiful of English-raised Chrysanthemums, the shade of colour being tawny-yellow. It is a free-growing sort of easy culture. The blooms, when first opening, do not indicate anything of a special character, but the florets continue to expand for some three or four weeks, until finally we obtain a most solid and handsome mass, which lasts in perfection a considerable time. Over-feeding means failure in this instance, as the roots, although plentiful, seem very tender.

Miss Elsie Teichmann.—This is an English-raised kind, and is very fine this season; the florets are long and wide, with a pretty curl at the points. These have exceptional substance, and a rich creamy-white tint. Late blooms come with a pink shade. It is then very striking. The plant is dwarf and easily grown. This is a variety that should be added to the choicest collections.

Duchess of Fife.—Those who grow the incurved Chrysanthemums will find this kind a fine addition. It is perhaps the largest of all, and yet not coarse. Colour, white with rose tint. In shape it is a perfect ball, without requiring much in the way of arranging its petals.

E. Molyneux.—Few growers appear to succeed with this old but grand variety. Notwithstanding the number of new ones that have been introduced within recent years, there is nothing to equal it in colour when in proper form. Crimson and old gold, a showy combination; it strikes every visitor on entering a structure filled with the autumn flower before any other variety, and at exhibitions it is the same. Of late years this sort has had a tendency to develop curled leaves, which fail to foster a well-shaped bloom. In such instances it is well to change the stock, and if the cuttings be taken from plants not cultivated for huge blooms so much the better for future results.

Mme. Edmond Roger.—This is a distinct novelty. It produces blooms having quite a green tint. These, too, are of fair size and good form. The growth of the plant is among the most dwarf. Those who like something out of the common should make a note of it.

G. J. Warren is a light yellow flower obtained as a sport from the splendid white Chrysanthemum Mme. Carnot. It is properly fixed—that is to say, in no instance have I seen it revert to the parent colour—and the plant really seems to be the better grower. Probably this is the greatest gain of the year.

M. E. Andre.—This variety is giving handsome blossoms with me. Those who appreciate the colour of the well-known sort G. C. Schwabe will like the newcomer because it is twice the size. The colour is a distinct shade of carmine tinted salmon, the petals being long and massive. It has a dwarf, sturdy habit, and develops very large, thick leaves. H. S.

Chrysanthemums—12 varieties for outdoor cultivation

(Subscriber).—You ask for a selection for cultivation in frames and open ground for garden and home decoration—not for exhibition or pot culture. On this account, we heartily recommend the early and semi-early sorts for your purpose. These flower before the very wet and severe weather sets in, and keep the garden quite bright with their innumerable blossoms, if grown without disbudding. If it is your intention to propagate the cuttings yourself, you had better wait until March, by which time the severest of the frosts will be over, and, with adequate protection, the cuttings will then root very quickly. On the other hand, if you intend to purchase plants, try and get them during March, and grow them on steadily. You will then have a splendid batch of plants for planting out into permanent quarters in the last week of May. Obtain the following sorts: Francois Vullermet, delicate lilac-rose; Lady Fitzwygram, white; Harvest Home, crimson and gold; Mme. Marie Masse, lilac-mauve; Mme. Casimir-Perier, white, tinted pink; Mons. Rignolt de Molmain, creamy-white, tinted pink; Notaire Groz, delicate lilac-mauve; Ivy Stark, bright orange-yellow; Ambroise Thomas, reddish-bronze; Mme. Armand Groz, pale primrose-yellow, tinted salmon; Mme. La Comtesse Foucher de Cariel, bright orange-yellow; and Vice-President Hardy, yellow, shaded red. All the above are Japanese sorts, and, with one exception, beautifully dwarf and branching—just the type of plant for outdoor work.

Chrysanthemums—when to take cuttings and proper time to stop

(P. H.).—Take the cuttings of your plants as they develop them, except Chas. Davis, Viviand Morel, Avalanche, Souvenir de Petite Amie, Empress of India, and Lord Rosebery. Take these late in January, retaining buds which appear about the end of August. Propagate the others without delay, retaining second "crown"-buds of Etoile de Lyon, Mlle Thérèse Rey, Stanstead White, Mme Carnot, International, Florence Davis, Richard Dean, and Chas. H. Curtis. Pinch The Queen, Mlle. M. Hoste, and Good Gracious early in May, retaining first "crown"-buds. Mons. Pankoucke should break between April and May. Grow on the shoots, pinching these middle of June and retaining first "crown." Such plants must be in the pink of condition, or you may fail. E. Molyneux should be treated somewhat similarly, but the shoots from the first break should be pinched end of June, and first buds afterwards retained. Mrs. E. W. Clarke should be pinched end of April, and first "crown"-buds retained.

Chrysanthemums—sixty Japanese sorts

(Enthusiast).—In compiling the following selection, we have included both new and old sorts, these being, in our opinion, the best that have been seen this season; Mme. Carnot, white; Mrs. Mease, pale yellow sport from the last-named; G. F. Warren, yellow sport from Mme. Carnot; Edith Tabor, clear yellow; Ella Curtis, bronze-yellow, splendid; Elthorne Beauty, rose-pink; Lady Hanham, rosy-buff, sport from Viviand Morel; Lady Ridgeway, salmon-buff, Japanese-incurved; Master H. Tucker, crimson-brown; Mme. G. Bruant, white and rose; Pride of Ryecroft, yellow sport from Niveum; Western King, pure white, Japanese-incurved; Mme. Philippe Revoire, pure white; Mlle. Lawrence Zede, bright rosy-lilac; Mrs. F. A. Bevan, pink, very lovely; Mrs. G. W. Palmer, bronze sport from Mrs. C. H. Payne; Mrs. H. Weeks, pure white, tinted blush; Mrs. Hermann Kloss, chestnut, streaked yellow; Mrs. J. Lewis, white; Mrs. S. C. Probin, pale pink, Japanese-incurved; Miss Elsie Teichmann, creamy-white; N. C. S. Jubilee, heliotrope; Mary Molyneux, large silvery rose-pink; Oceana, rich yellow; President Nonin, bronzy-yellow; Werther, purple-red; Soliel d'Octobre, beautiful yellow; Secretaire Fiereno, crimson, yellow reverse; Souvenir de Mme. F. Rosette, reddish-purple; Fee du Champsaur, white; A. H. Wood, yellow sport from Primrose League; Australie, rosy-amaranth and silvery-white; C. W. Richardson, rich yellow, rather late; Emily Silsbury,

white; Julia Scaramanza, bronzy-terra-cotta; Lady Byron, pearly-white; Beaute Gwenobloise, creamy-white tinted lilac and pale yellow, Japanese-incurved; Modesto, deep rich yellow; Phœbus, clear yellow; Hairy Wonder, reddish-bronze; Pride of Madford, rich amaranth; Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; Era Knowles, bright carmine-red, golden reverse; Edwin Molyneux, rich chestnut-crimson, golden reverse; Matthew Hodgson, light crimson; Mons. Chenon de Leche, old rose colour; Miss Dorothea Shea, crimson and golden-yellow; Mutual Friend, pure white; Niveum, pure white; Mrs. W. H. Lees, creamy-white; J. Chamberlain, bright crimson; Mrs. John J. Glessner, rich golden-yellow, tinted apricot; Mr. Chas. Blick, pure white; Simplicity, purest white; Georgiana Pitcher, soft lemon-yellow; Dorothy Seward, crimson, shaded terra-cotta; Mrs. T. H. Tranter, white, faintly streaked rosy-purple; Mlle. Thérèse Rey, white; and Mrs. G. Carpenter, pale silvery-mauve, silvery reverse.

Chrysanthemums — Pompons for exhibition in cut trusses (*New Subscriber*).—The selection which you have sent us is an excellent one, and may be considered as good as it is possible to get of these pretty little blossoms. They are seen to greater advantage when shown in sprays than when rigidly disbudded, and flowers extra large and quite out of character often exhibited. To exhibit the undermentioned sorts in sprays, and from blossoms developed from terminal buds, we should be disposed to propagate from cuttings as early as possible in January. As the varieties, with one exception, are mid-season flowering, you should have little difficulty in obtaining terminal buds of these by an early date in November. To do this the plants must be grown on vigorously, when, as a result, you should see them break naturally quite early in the summer or even earlier (late spring possibly). However, rather than run the risk of disappointment, perhaps it would be better to take out the points of the shoots during the last week in March or first week in April, retaining three or four of the strongest succeeding shoots, and again from the next "break" taking up two or three shoots on each of these (shoots grown on from the first "break," which was effected when the plants were stopped). We have every reason to believe you will secure a nice lot of useful sprays on terminal buds by these means early in November. In the case of the variety Mlle. Elise Dordon, we should prefer to pinch out the points of the shoots about mid-April, and feel confident this will give you capital results. For the benefit of other readers of GARDENING we repeat your selection: Black Douglas, rich, dark crimson; Mlle. Martha, white; Golden Mlle. Martha, bright golden-yellow; Rosinante, blush-rose; Nellie Rainford, buff-yellow; Osiris, rosy-purple shaded, tipped salmon; Pygmalion, deep rose; Rubra Perfecta, magenta-crimson, pinch March certain; Victorine, maroon-crimson; Wm. Westlake, golden-yellow, suffused red; Wm. Kennedy, crimson-amaranth; Maid of Kent, pure white; Marabout, white fimbriated florets; and Mlle. Elise Dordon, soft lilac-pink.

Chrysanthemums October to December (*A. E. G.*).—A large number of the sorts in your list have already been mentioned in reply to other querists in this issue, so that it is unnecessary for us to go into yours in detail. You ask for treatment of your sorts to exhibit within the period stated above. Your selection embraces those which bloom within this period, so that you should get the flowers without any special manipulation. In fact, you could not very well possess a better or more representative collection to flower during these months in a natural manner.

Chrysanthemum selection (*New Subscriber*).—We have given several selections to meet the requirements of different growers in our recent issues, and in the present number a lengthy list is given, describing the best time to stop the plants, with particulars as to the kind of bud to retain, besides other interesting details. We have no doubt this will meet your wishes.

The Garden Part.—*Now ready, for January, 1898 (containing all December, 1897, Nos.), with four beautiful coloured plates of flowers, also many articles on the best and newest plants, with numerous illustrations. Of all Newsagents and Booksellers, 1s.; or from this office, post free, 1s. 3d.*

GARDEN WORK*

Conservatory.

Two of the best late Chrysanthemums for cutting and conservatory work are, at least with us, W. H. Lincoln, yellow, and Princess Victoria, white. Both have stout flower-stems, and keep erect in a cut state. Lincoln keeps its leaves down to the pot till the last, and one can have a plant in a 7-inch pot, with a dozen fair-sized blooms upon it. Another point worth consideration is its hardiness and consequent good-keeping qualities; and, lastly, it always produces plenty of strong, healthy cuttings—which Princess Victoria does not; in fact, there has often been a difficulty in getting sufficient stock of this variety. There is still room for really good late varieties with sturdy habit and good-keeping flowers. In frosty weather do the watering with great care, so as not to create damp, and, unless freezing or windy, give a little air to let out damp. Keep down fires as much as possible, consistently with plenty of flowers. And these cannot be had in a lower night temperature than 50 degs. Be careful, in sweeping floors, not to make any dust—better sprinkle before sweeping if dust is likely to rise. The best flooring for an ornamental conservatory are tiles, stone floors, as paths always create dust. Take advantage of bad weather to re-train specimen Azaleas and hard-wooded plants generally. Some require less staking than others; but most of the hard-wooded plants will require a little training. Use as few sticks as possible, and let them be small and neat. Bamboo-canes are largely used for the purpose now. They are both cheap and lasting, and are less conspicuous than wooden stakes. The season for re-potting is coming, and a stock of materials should be in readiness—not all of it under cover, but a part should be kept in the dry; also a stock of broken material, of different sizes, for drainage. No one can be a good plant-grower until he can form a just estimate of the value of drainage. I know, of course, the market-grower is often careless about it; but the plants do not remain in his hands long. It is very different when one is dealing with valuable specimens, especially hard-wooded plants. Roses are moving now, and insects should be promptly dealt with should they appear. Tobacco-powder will be useful at the beginning.

Stove.

Pruned Allamandas, Bougainvilleas, and other flowering stove-climbers which have completed their resting period. Sponged and tied Stephanotis, shook out and re-potted Gloxinias just starting into growth. Removed our stock of plants of Begonia Gloire de Lorraine to warm-house, and pinched off all flowers. We want cuttings to increase stock. Pruned back Bouvardias which have done flowering, and placed in warm bed to produce cuttings. Sowed seeds of Asparagus plumosus and Cocos Weddelliana. Night temperature, 65 degs. Watering done in mornings. No air given now, and syringe used twice a day lightly, just to dew over the foliage; rain-water, temperature of the house, only used.

Early Vinery.

Pot-Vines breaking leaf should now have a slight rise in temperature to 55 degs. to 58 degs., and all surplus shoots disbudded. All Vines should be tied into position now. Sluggish Vines, if any, not breaking well, will break back-eyes better if twisted, so as to bring pressure upon them from above. Tie young shoots in as they grow. Link down at first, and draw closer, as they will bear the pressure. A shoot split off now will leave a blank all the season. Stop from one to two leaves beyond the bunch of Grapes.

Orchard House.

Potted trees should be housed now, pruned, and cleaned down, and, if necessary, top-dressed. Under good culture trees will live and be fruitful for many years in pots. When in large pots with annual top-dressings they will go on for years without re-potting, and when it is necessary to overhaul the roots they may be reduced and returned to the same sized pots again; but all work of this kind should be done in the autumn, before the leaves are all down, as Peaches and Plums now begin to make new roots.

Cucumbers.

The middle of January is a good time to start Cucumbers in a warm-house. There must be a temperature of 65 degs. at least at night, and some root-warmth. We have one house where the narrow beds, one each side of a long span-roofed house, are filled with warm manures, and on this the Cucumbers are planted, and very well they always do. By the time the manure cools down the plants have become strong, and the sun's warmth runs the temperature up to 90 degs. or a 100 degs. Cucumbers planted now do not require much soil; but it must be suitable, and frequently added to.

Forcing Early Potatoes.

Sharpe's Victor is a good forcing kind—it makes but little top. They may be grown in 10-inch pots, three sets in a pot, in a light position in a warm-house, such as a Peach-house or Vinery, where ventilation is given every fine day. If grown in too close a place the plant runs too much to top. Where there are plenty of materials for making hot-beds, Potatoes can easily be forced in frames, and, later, temporary frames of boards on a bed of tree-leaves, with a few old lights—or glazed calico will do, nailed on frames of wood.

Window Gardening.

There should be plenty of bulbs in flower now, including Hyacinths in glasses and Narcissus in globes or fancy jars. The chief thing to avoid is over-watering, especially such plants as Primulas, Cyclamens; but do not permit Heaths to get dry.

Outdoor Garden.

There are a few things so useful for cutting that everybody should grow a dozen or so of them. These should include Carnations in variety, though for cutting purposes I would rather plant a few of good decided colours having a vigorous habit of growth than a large number, some of which might fail to be satisfactory. The Cloves are always in demand for cutting, and to these should be added such free-growing kinds as Raby, Mrs. Reynolds Hole, Queen of Bedders, Cantab (scarlet), Duchess of Fife (pink), Florence E. Thoday (white), Germania (yellow), King of Scarlets, Leander (yellow), Uriah Pike (crimson). Carnations are indispensable for cutting and should be propagated annually by layering, but those plants not now established should remain as they are till March, whether attached to the old stools or wintered in frames. There are some herbaceous plants so valuable for cutting that their absence would be seriously felt. Anemones in variety, but especially the double scarlet, and St. Brigid variety of Coronaria, which are so easily raised from seeds in March, Chrysanthemum maximum, Coreopsis grandiflora, treated as a biennial and raised from seed annually; C. lanceolata, Doronicum Harpur-Crewe, Erigeron speciosum, Gaillardia grandiflora, Geum miniatum, Gypsophila paniculata, Helenium pumilum, Helianthus Soliel d'Or, H. Miss Mellish, Inula glandulosa, Rudbeckia Newmanni, R. purpurea, Scabiosa caucasica, Statice latifolia, Eryngium amethystinum, Centaurea rubra, C. macrophylla, Iceland and Oriental Poppies, Pæonies in variety, Lilies, especially candidum, Tiger, croceum, and as many more as there is room for.

Fruit Garden.

Strawberries can be introduced into the forcing-house in batches as required. The usual course is to take a fresh lot into a moderate temperature every fortnight. Dip the foliage in a solution of Gishurst-compound or some other insecticide before taking them inside. The trusses of flowers come strong if not unduly hurried. The camel's-hair or the rabbit's-tail should be used to fertilise the early blossoms, and as soon as enough blossoms are set for a crop remove all the others. A dozen good berries that will ripen at nearly the same time are better than more. If the plants are potted in the right stuff liquid-manure will not be required till the fruits are set. Use the syringe to keep down red-spider. Peaches in bloom under glass should have some assistance in setting. Tapping the trellis when the pollen is ripe and dry will help its distribution, and the small brush and the rabbit's-tail may be used. It will not be necessary to go over all the blossoms, as the number of fruits required in proportion to blossoms is very small—at any rate, only those blossoms on the upper side of the branches should be operated on. Disbud Vines which are breaking. Aim at keeping the night temperature fairly regular at from 48 degs. to 50 degs., but when the nights are cold a degree or two lower will be better than making the pipes very hot. Sow a few Melon-seeds for the early crop. Get on with the work among the hardy fruits, pruning, etc.

Vegetable Garden.

The work now will have to be regulated according to the weather. In frosty weather wheel manure on the land and trench vacant plots. Make up hot-beds and mix and prepare the materials for Mushroom-beds. Get the Pea-sticks sharpened and trimmed ready for use. If there happens to be a drain or an outfall blocked see to it. See that Potato pits are made secure from frost; Celery also may require to be covered with long litter. In mild, open weather plant Peas and Beans. Fill up blanks in Cabbage and Lettuce beds, and draw a little earth up to the former. Sow Cauliflowers and Lettuces in heat; Paris Market is a good forcing Lettuce. Early Broccoli will require looking after now, and must have shelter when turning in. Turn and prepare manure and compost heaps. Burn cuttings and other rubbish. Make out list of seeds and send in early.

E. HOBDAY.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 3rd.—Placed soil of various kinds under cover for potting, and broke up crocks into several sizes for drainage. Finished pruning Peaches on walls; shall not train them just yet, but the branches will be washed with a solution of Gishurst-compound. Staked and tied early Pelargoniums. Moved a few Heliotropes and other soft-wooded plants into warm-house to get young shoots to break out for cuttings for propagating. Syringed Gooseberry and Currant-bushes with a mixture of soft-soap, lime, and soot to keep off birds.

January 4th.—Fertilised blossoms on early Peach-trees with camel's-hair brush, giving attention chiefly to bloom on upper side of branches. Disbudded pot-Vines just breaking into foliage; night temperature 55 degs. Started second vinery, chiefly Hamburghs. There are two Foster's Seedling, two Madresfield Court, and one Buckland Sweetwater in same house; night temperature 45 degs to 48 degs. Planted a frame from which Asparagus has been cut with Tom Thumb Cabbage Lettuces.

January 5th.—Forked over fruit borders where trees have been pruned and trained. Prepared Pea and Scarlet Runner sticks to have them ready for use when wanted. Cut back specimen Fuchsias and placed in heat; shall want some cuttings, though a good part of our stock of Fuchsias are struck in August and are now ready to go into 5-inch pots. Took off young tops of white and yellow Marguerites and put them in as cuttings. Sowed Early Snowball Cauliflower in heat; also a few of early white Celery to get a few plants for flavouring.

January 6th.—Sowed more Cucumber seeds, also a few Melons for early work, and Tomatoes for planting in warm houses. Moved more Spiræas, Lily of the Valley, Deutzias, and Rhododendrons to warm-house. A good many of the white Rhododendron Cunninghami are forced; they come in useful for the conservatory, also for cutting. Top-dressed Cucumbers in bearing. Only a limited number of fruits are left with plants, as quality is important.

January 7th.—Planted a few more rows of Chelsea Gem Peas on warm border. Moved more Rhubarb and Seakale roots to Mushroom-house. The small thongs or roots cut from Seakale crowns are laid in sand. All old Seakale crowns are thrown away after forcing, as young plants are better. Old Rhubarb stools as they come out of Mushroom-house have long litter packed round them, and by-and-bye the best roots will be divided and planted out.

January 8th.—Put in cuttings of Lobelias in heat. Grafted Roses of various kinds on Brier roots in propagating-bed in brisk heat. Pruned Morello Cherries on north wall. Sponged plants in stove and cleaned paint inside house. Moved a lot of Poinsettias to conservatory to give more room for Gardenias and other plants coming in warm-house. All spare time is devoted to trenching vacant land in kitchen garden. Manure is wheeled on during frosty mornings.

OUTDOOR PLANTS.

THE CISTUSES, OR ROCK ROSES.

The Rock Roses, or at least a few of them, are known to all who have an interest beyond the common things one sees in gardens, for apart from their flower beauty they have a peculiar interest, having been tended with loving care by Parkinson as early as the beginning of the seventeenth century, at which period several of the finest Rock Roses we have in our gardens now were first introduced from the sunny South. They are, in fact, true old English garden flowers, for there is scarcely one that could be called a modern introduction. Judging from what we gather from old garden books, they must have been more numerous fifty or sixty years ago than they are now. The rarity of Rock Roses in gardens nowadays is doubtless due to the unfortunate tenderness of the majority of the species, and it is evident that we do not, as a rule, take the trouble to grow and care for tender open-air flowers as the early gardeners did. In these days of cheap greenhouses there seems to be no middle course between the absolutely hardy and the tender class of plants that will not thrive outside a glasshouse. But we deprive ourselves of much beauty in our gardens not only by the exclusion of Rock Roses, but by a host of beautiful warm-climate shrubs and plants that only require protection during our long and often severe winters.

The Florentine Rock Rose (Cistus florentinus). From a photograph by Miss Willmott, Great Warley, Essex.

An admirable plan of growing Rock Roses was that adopted by that keen lover of plants, the late Mr. Joad, in his richly-stocked garden at Wimbledon. He had a long sloping bank thrown up against a low wall facing south, the soil being open and well drained. On the surface were great boulders half buried in the soil, and around these he planted his Cistuses and other half-hardy shrubs. In winter he had a contrivance for protecting the plants by erecting a movable framework, over which he stretched canvas, and this was quite sufficient to protect his Levantines, Australians, and New Zealanders, as he used to call them, from injury by frost. From spring to early winter you saw nothing of the winter-protecting apparatus, and I need scarcely say that the bank was always full of interest, and during the height of summer it always had a kaleidoscopic effect of colour, always changing, always bright.

Such a simple plan might be adopted by anyone who wished to have a good collection of Rock Roses and plants of kindred nature; but in mild localities, and with a light, warm soil, many of the Cistuses may be grown on an open, well-drained rock garden.

Without attempting a full and detailed account of the Rock Cistuses now in cultivation, I will mention some of the best that could be grown well in any garden in the neighbourhood of a large town, as London and south of it, and even in more northerly gardens where the soil is light and the situations naturally mild, such as those near the sea, and without much trouble beyond planting them well at the outset and taking care of them during the winter.

The two largest growing kinds, and at the same time the hardiest, are the Ladanum Gum Cistus (C. ladaniferus) and the Laurel-leaved Rock Rose (C. laurifolius), both extremely beautiful. The Ladanum Gum Cistus was introduced from Spain by Parkinson in 1629, and has been in our gardens ever since. It is an evergreen shrub of somewhat erect growth, and rises when full grown 5 feet or 6 feet in height. It may be recognised at once by the deep green on the upper surface of the leaves and by the whiteness of the undersides. The profusion with which it flowers during June and July makes it one of the most beautiful in the genus. The blossoms, each nearly 2 inches across, with white crumpled petals, are conspicuously blotched with yellow. In the variety maculatus the petals are adorned with a large deep crimson blotch. For several weeks at midsummer this species is an object of great beauty, so profuse are the flowers, and as it is the hardiest of all the Cistuses it may be grown in a mass as a lawn shrub. The spotted variety (maculatus) is, I think, one of the finest of all open-air shrubs, and is one of the few obtainable in nurseries.

C. LAURIFOLIUS has larger and paler green leaves than C. ladaniferus. The flowers also are white and blotched with yellow. It is a larger growing and hardy shrub, and makes a beautiful object on a lawn in a group with others.

C. FLORENTINUS (see cut).—Among the dwarfer species perhaps this is the most beautiful. The annexed illustration represents a well-grown specimen, and shows well the spreading growth of the shrub. Its flowers are each 2 inches across, with snow-white petals blotched with pale yellow at the base. It blooms plentifully in June and July. It is an Italian plant, and in close affinity with the Montpelier Rock Cistus (C. montpeliensis), which, as its name implies, grows wild about Montpelier. This has been in English gardens for over two and a half centuries, since the time of Gerard. The flowers are smaller than those of the Florentine Cistus, but are also white and plentifully produced.

C. CLUSI is a lovely little shrub from Spain and Portugal. It grows from 1 foot to 2 feet high, and forms a compact, dense mass of foliage, and at midsummer is covered with snow-white blossoms. Other white-flowered species to be found in good collections include C. hirsutus, C. salviæfolius, C. lusitanicus, C. laxus, C. cyprius, C. corbariensis, C. populifolius, and C. obtusifolius. These are all worth growing, but those who seek to make a collection will find that there are numerous other white-flowered species to be added to this selection.

The species with purple flowers are few, and all should be grown on a Cistus bank. The best known is

C. PURPUREUS, the large purple-flowered kind that one frequently meets with in warm southern gardens. It is a free-growing bush, reaching a yard or more in height, having large and more or less wrinkled leaves of pale green. The flowers are large, of a bright reddish-purple, with a crimson or deep red centre, and are borne in clusters of two or three from June up till the end of August.

THE CRETAN CISTUS (C. creticus) is dwarfer and more tender than purpureus. It also has wrinkled leaves, and the large purple flowers have yellow blotches at the base instead of crimson. C. villosus may be distinguished at a glance by the Sage-like leaves, and when in flower by the more or less lilac-purple flowers. It grows about 3 feet high and makes a dense bush. Similar, if not identical with it, are C. incanus and canescens, and a few others with purple flowers, including C. crispus, could be added to make a full collection.

THE NEAPOLITAN VIOLET.

This Violet is not so much cultivated now-a-days as it used to be, the reason probably being that Marie Louise is so much more easily grown. Old gardeners had not the choice of varieties in Violets that we have now, and where this flower was wanted in winter and spring there was no alternative but to grow the Neapolitan. I fancy it does not succeed so well in midland and northern counties as in the south; at any rate I have never been able to flower it satisfactorily and have now reluctantly discarded it, growing instead Lady Hume Campbell, which is an excellent substitute, although I think most gardeners will agree with me that for fragrance none can equal the Neapolitan. Lady Hume Campbell has a very hardy constitution, being the least liable to damp off in foggy weather of any Violet I know, and it is quite as free flowering as Marie Louise, but does not commence to open freely till January. It is, however, more valuable on that account, as it continues to bloom for a considerable time after Marie Louise is over. The best Neapolitan Violets I ever saw were in a garden in Essex, the gardener being very enthusiastic in their culture and bestowing great pains on them. He always grew the plants during the summer on a north border, a third of which was planted annually with Violets, a good amount of leaf-mould and the sweepings of pleasure-ground walks being dug in. The runners were already prepared by sifting over the old plants in March a liberal quantity of fine soil, this being afterwards worked well in amongst them with the hand. The runners quickly rooted into the fresh compost, and were strong by the first week in May. Much of his success, however, he attributed to the use of a mild bottom-heat beneath the frames when the Violets were put into their winter quarters. A bed of Oak and Beech-leaves some 3½ feet high at the back was made up, the plants being put into the frame the first week in October. This old grower attached much importance to early lifting, so as to get plenty of new roots into the new soil before sharp frosts set in. The lights, however, were kept off day and night till November, and all coddling avoided. The gentle warmth beneath not only encouraged new roots in plenty, but a free growth also, and even during the dark, sunless days of December I have known quantities of long-stemmed, large-flowered Neapolitans to be gathered. The linings

round the frames were renewed several times during the winter so as to keep the bottom warmth going, washing the lights and stirring the surface of the soil also being attended to. My experience is that even where the Neapolitan grows fairly well without bottom-heat, the stems, especially through December and January, are usually too short for tying up into bunches, and the size and colour of the flowers are inferior. Although I am glad, in order to economise labour, to grow varieties that do well under quite cool conditions, I have an idea that even in this district the Neapolitan could be induced to grow and flower better if bottom-heat were given. Violets are wonderfully well grown about Chislehurst, in Kent. I was at one time employed in a garden there, and the plants were treated as follows: In April or May strong, well-prepared runners were planted out on a rich border, and when growth became active, instead of all the offsets being pinched out, as is generally done, some five or six were selected and pegged round the parent plant. These, of course, prevented it from growing so large as where the parent only is retained. At the usual time they were lifted, without any soil attached, and placed in 8-inch pots, the parent plant being in the centre and the half-dozen offsets pegged at equal distances around it. The pots were then plunged in the warm bed and shaded for a week, also syringed, exposure being practised as soon as established. The result was excellent—Neapolitan Violets in great numbers. R.

Iris Vartani.—This charming little Syrian species has been flowering quite freely for more than a fortnight, and more encouraging still is the fact that this little gem appears so content quite near to London. It is producing numbers of its pretty pale blue flowers, the shading of which is delicate and very pleasing at this season of the year. It is one of those species that finds a congenial home in a snug recess of the rockery, with a thin carpet of Phlox amœna, mossy Saxifrage, Herniaria, or some other similar subject for the twofold purpose of a covering for the roots in frosty weather or for preserving the delicate blossoms from heavy rains.

PAULLINIA THALICTRIFOLIA.

The beautiful Fern-like foliage of this Paullinia renders it one of the most elegant stove plants of a climbing character that we have in our gardens, and twenty-six years ago when it was first introduced from Rio de Janeiro it rapidly became popular, for fine-foliaged plants were just then all the rage, and this Paullinia was readily grown into an effective specimen. Trained to a trellis not too stiffly, but just sufficient to keep it somewhat in bush form, it frequently used to figure among exhibition plants of this class, which were for a time so popular at all our great shows. Grown in this way, the beautifully divided foliage was seen to very great advantage. Trained to the roof of a stove it was equally attractive. Besides these methods of treatment, I have seen it trained to wires, thus forming a living screen at the end of a stove, while on a large fan-shaped trellis it was also very effective. The shoots of this Paullinia are of a thin, wiry nature, and clothed with much-divided leaves, so well shown in the accompanying illustration. These leaves, which bear a certain amount of resemblance to some of the Thalictrums (hence the specific name), are each from 6 inches to 9 inches long and of a very pleasing shade of green. When young they are, if the plant is not too much shaded, of a pretty bronzy tint. The flowers, which are borne in the autumn, are small, and of a pinkish hue. There is a variety of this Paullinia, introduced about ten years after the typical form, from which it differs in the foliage being suffused with silvery grey. It is known by the varietal name of argentea.

Paullinia thalictrifolia.

The Paullinia is propagated by cuttings of the young growing shoots taken during the spring months and put into pots of very sandy peat. They should be placed in a close propagating case in the stove, but an excess of atmospheric moisture must be avoided, otherwise the foliage will damp off. If the tops of the plants are pinched off as soon as rooted they will branch out, and in pots 4 inches or 5 inches in diameter are very useful for decoration. The roots of the Paullinia are fine and not particularly numerous; hence over-potting should be guarded against. A compost consisting of two-thirds fibrous peat to one-third loam, with a liberal sprinkling of silver-sand, will suit it well. It needs the treatment accorded to the general run of stove plants, and a moderate amount of shading is very beneficial, but at the same time it must not be shaded too heavily, otherwise the young leaves do not acquire that distinct bronzy tinge which is so pleasing. H. P.

HERBACEOUS PLANTS AND BULBS IN LINES.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

In a letter, Dec. 18th, "W. S." protests that to plant herbaceous plants in lines is against the spirit of the paper. He says it is as impossible to get "beauty out of the clouds of heaven in stiff lines as out of flowers in that way;" but he seems to overlook a few important facts, which I should like to point out. It has always been for beginners that I write. From what I had seen before I began to do so, I felt that many people who really were lovers of gardening only failed to have gardens satisfactory to themselves because they did not know exactly how to begin, judging by the many letters I have received asking for my assistance. It is clear that I was right in thinking that a minute and practical plan of how to plant beds and borders so as to obtain a bright effect, and, at the same time, have a collection of beautiful plants, was required.

I should be sorry, indeed, to see everything in a garden planted in a line. I have merely written several replies to people who had a wish to plant their borders in the same manner as one planted in this way which I have in my own garden with a good result. I told "N.," in reply to a letter I received from him, that I, on my part, must protest against *every* border and every garden being planted in exactly the same way, irrespective of its surroundings. We all love the bold, picturesque grouping "W. S." so strongly advocates, and I have tried sometimes to explain how such effects can be obtained; but any real gardener knows that those effects are only produced after years of experience, and that it is not quite such an "easy" matter as "W. S." seems to suppose to instil them into the minds of a complete amateur.

Nearly every garden has its mixed border, in which that bold, picturesque effect has been aimed at. It is little wonder that many people hold the opinion that these borders are untidy and dull things, and that bedding out is more satisfactory because it secures a gay result for the spring and summer months. They have seen those borders, and they have seen a confused muddle without any beauty or interest in it. Those borders do infinite harm, and help more than anything else to arrest the progress of that particular branch of gardening which Gardening Illustrated is so anxious to encourage.

The planters of these borders often try to run before they can walk. Let them walk first, and then if they are true gardeners, and have an artistic eye, they will soon run; but to make an ordinary little villa garden *picturesque* is, unfortunately, more difficult.

Let us have variety—an interesting collection in one part of our garden, a gay effect in another, a picturesque one everywhere, if possible; but do not let us be disheartened because our gardens may happen to be small and to be handicapped by situation that to boldly plant them in picturesque groups would be impossible. In such gardens we must content ourselves by finding interest and a gay effect, and console ourselves by the fact that, fortunately, opinions differ, and that each good garden may be a success in its own way.

What is suited for one garden is not for another. I have seen the plans (some of them very clear plans) of the garden in which I have advised a border or borders to be planted in rows. I have thought these rows suitable in those gardens, and I still think them so. I think experienced gardeners will agree with me that it is not so easy a matter as "W. S." seems to think to obtain bold, picturesque effects, and that it is better for beginners to adopt some simple plan which they have every chance of making a success than to continue planting a thousand odd bits of plants altogether in a mixed border before they know anything of the habits of those plants, or have discovered how far their own love for gardening is going to take them along the path of success. MRS. JOCELYN.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

SIR,—Kindly allow me also, like your correspondent "W. S.," to protest against Mrs. Jocelyn's plans for arranging and planting flower borders. It appears to me, too, that Mrs. Jocelyn's ideas are absolutely contrary to the whole spirit of your paper, and also to the teaching of the "English Flower Garden." I should like to ask if anyone has taken the trouble to count the cost of Mrs. Jocelyn's proposed schemes of planting? If they have not done so before ordering the masses of bulbs and plants, all of the most expensive named kinds, that she advises, they will receive a rude shock when the bills come in. No one is a greater admirer than myself of the principle of "underplanting," but there are places for everything. How beautiful the white sheets of Snowdrops on the Grass or under deciduous trees, the dazzling gold of the Aconites, the blue of the Scillas in like situations! But put the same quantity of bulbs in a border amongst Phloxes and Delphiniums, which cannot remain beyond three years without dividing, and must also be forked round and mulched with manure each year, and see what becomes of the poor carpeting bulbs! Mrs. Jocelyn must possess soil of a peculiar nature if any Daffodils or Lilies will survive the mulches of manure she advocates. Let us imagine the appearance of one of her borders in August. Beyond the dead or dying leaves of the bulbs and Lilies, and the gaunt stems of the Delphiniums, and the Foxgloves running to seed, nothing will be left but a straight row of Hollyhocks (probably diseased), and a straggling, dotted row of yellow flowers, Helianthus and Coreopsis. It is impossible there could be any beauty in this.

Imagine the same border with all straight lines done away with, and the same flowers planted in bold masses. The tall group of Phloxes, carpeted with the early-flowering creeping Phloxes; the brilliant mass of Gesneriana Tulips, with some summer-flowering annual, or, better still, with cuttings of early Chrysanthemums pricked out amongst them to hide the yellowing leaves later on. The same spirit all down the border. The group of Cactus Dahlias in front of the tall Delphiniums, the Davuricum Lilies rising behind a mass of Gypsophila paniculata. All are different happy effects of the carefully thought out massed garden, and not the wretched sameness of the dotted lines of first one plant and then the other. No one, nowadays, requires anything but masses of colour in dotted lines. If so, it would become a mere question of how much money one chose to spend on plants and bulbs each year, and all the old evils of the planted-out garden would be revived. The beauty of a garden lies in adapting the plants to the situation, and in managing the succession of spring, summer, and autumn plants. The bulbs should be away from the coarse-growing perennials, and instead of masses of a few sorts, lovely collections could be made and grown permanently on low rock beds and mounds carpeted by alpines and all the well-known rock plants. I feel sure that a few arrangements like this would give far more pleasure than acres of Mrs. Jocelyn's most expensive and carefully measured out garden. MRS. PORTMAN-DALTON.

Fillingham Castle, Lincoln.

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HOUSE AND WINDOW GARDENING.

ARRANGING DOUBLE POPPIES IN VASES.

THESE beautiful hardy flowers can now be obtained in great variety, both as regards form and colour. The double forms of the common red Poppy (Papaver Rhæas) are very pleasing and varied in colour. The Opium Poppy (Papaver somniferum) is one of the best and most beautiful of these flowers, and may be classed as a distinctly valuable hardy annual. Among this type are many beautiful self-coloured blooms, which embrace many shades and tints from white to crimson. Then, too, there are some double white flowers, and these, arranged with a little care and taste, make an interesting decoration for the drawing-room, besides many other purposes. Others of double scarlet, and blossoms, too, distinctly striped, each giving a delightful change when arranged in vases for home decoration. By a process of selection, a type known as the Pæony-flowered Poppy has been secured, and these are large and handsome flowers, and in colour vary from pure white to deep crimson. This type is sometimes known as Papaver pæoniæflorum. These hardy annuals, being so easily grown, are deserving of extended culture. The seed should be sown thinly during April in a sunny border for flowering in the summer, and the seed, being small, should be sown 1-16th inch deep. Before they get too large the seedlings should be thinned out to about 2 inches apart, or more if handsome plants be desired. To arrange a vase effectively, the blooms must not be crowded together. A much better system of arrangement is to see that each bloom gives an account of itself, as by these means a much lighter and more artistic finish is secured. The silvery green foliage of the Poppy is all that is needed for the embellishment of a vase of these flowers, nothing being so appropriate as foliage of its own for a neat and elegant finish. Some of the flowers may be somewhat top-heavy at times, but these may be easily arranged in position with the aid of green Moss, or, better still, by covering the opening of the vase with a network of wire. Small vases and specimen glasses are better arranged with an individual bloom or two or three at the most, and a few of these, arranged at intervals upon the dinner-table, with a bold vase of the same flowers in the centre, form at once a charming display. Also remember, when associating the different colours in one vase, to see that a proper harmony of colouring is produced. Vases of blooms of one colour only are beautiful too.

D. B. CRANF.

Double Poppy-flowers in a vase. From a photograph by Col. Taylor, Stanhope-road, St. Albans.

Asparagus tenuissimus.—Where there is an established plant of this Asparagus sufficiently large to flower and fruit it is a simple matter to raise a stock of young plants, but everyone cannot induce one-year-old plants to produce plenty of berries; hence this Asparagus is often increased by cuttings. This is quite an easy matter, as it is, as far as my experience extends, the easiest of all the members of the genus to propagate in this way, though the typical A. plumosus is not far behind it, while, singularly enough, I have never been successful in propagating the flattened frond-like A. plumosus nanus in this way. The cuttings of A. tenuissimus should be taken during the spring and early summer months just as the young shoots begin to get firm, and if put into a close propagating-case in the stove they soon root. A length of 3 inches to 4 inches is very suitable for the cuttings, and if three of them are inserted around a small pot there will be no need to pot them off singly, as they form neat little plants in this way, which can be shifted on when required. A. tenuissimus is, to my mind, one of the prettiest of all these ornamental kinds of Asparagus. The cuttings of A. plumosus may be treated as above recommended, and in both cases an open, sandy soil pressed firm should be used. The other forms of Asparagus, such as A. plumosus nanus, A. scandens, A. retrofractus, and A. Sprengeri, can be increased by division, but this is far too slow a process to be generally adopted, and much the same may be said of layering them. Such being the case, the better way is to encourage a plant or plants of each to grow away as freely as possible, in order that they may flower and produce seeds.—H. P.

Hæmanthus Kalbreyeri.—This is a very bright and effective stove or warm greenhouse Amaryllid, the bright crimson ball of flowers being produced from the side of the bulb just now. The blossoms are thickly produced from the umbel, as many as forty being by no means unusual. It does best in small pots in a light house. The soil may consist of good loam, peat, and leaf-mould, with a dash of coarse sand. The flowers often precede the growth, and when this is so the plants must be well grown afterwards and a resting season eventually allowed. H. Kalbreyeri is propagated by offsets which spring from the sides of the bulbs. It was introduced from Guinea in 1878.

FRUIT.

GOOSEBERRIES.

THE Gooseberry is a fruit amateurs can grow to great advantage; indeed, a few years ago Gooseberries created a much greater interest among amateurs than at the present time. There were Gooseberry shows and a strong competition to produce the largest specimens, but of course these were the Lancashire varieties, kinds remarkable for size and weight. The variety illustrated is a smaller fruit but of excellent quality. I will not dwell at length upon the largest-berried varieties, or indeed upon any one kind, but note the best for amateurs who require fruits of the finest quality and those grown with ordinary culture. In reference to the culture of the Gooseberry much may be written. How often we see these trees badly pruned and in a starved condition occupying the same spot for many years. It is to these latter defects that my note will apply, and a plea for better culture with increased interest. Many could grow these fruits in places now barren. I mean a wall or even a hedge of cordon-trained trees give splendid results; but it is useless to plant and leave the trees to chance. If the Gooseberry is cared for it is worth growing well. I am aware some of the Lancashire kinds are not very ornamental. The trees are of spreading growth, but given the support of a wall or trellis are very good and prolific indeed. The fruits when quite ripe, grown in this way, are equal to the best forced fruits under glass of choicer products.

Many could, with advantage, take special measures to grow this fruit. I have seen splendid results from a north wall by growing the variety illustrated or any of the best kinds known for flavour. Most of the smaller fruits of the Champagne type are delicious when ripe and allowed to hang on the trees. Though some growers prefer the Lancashire berries on account of their size, the grower is not limited to one variety, as there are a great number. If a part of the garden could be reserved for these fruits there would be better results. The Gooseberry does well on a north wall, the north wall being often bare; but, of course, earlier fruits could be obtained on a better aspect, but the trees do well on the colder position. The best way to grow trees on walls is to train two shoots from the base, say from 1 foot to 3 feet horizontally. From these allow three shoots to grow upright on each side of the stem, and each year allow the leaders or main shoots to lengthen. The only pruning necessary is to spur back growths which push out from the wall, or what are termed side and foreright shoots, and the fruit is produced in abundance from the spurs and buds on the upright shoots. To cover a wall quickly what are termed upright cordons or a double cordon may be employed; but, of course, more trees are required, one in every yard of space for a double cordon. These trees are, however, so reasonable, and the amateur can grow them so readily; but they cost little if purchased. I have seen excellent results from what are termed upright cordons trained to stakes in the open; indeed, those who have not walls or with only limited garden space may, with advantage, adopt this mode. I have seen cordons used as a hedge to divide the flower from the kitchen garden, and answer thoroughly if the trees are allowed to grow about 4 feet in height, the only drawback being stakes and decay of wood. Another plan is to strain wires and then train to these. When grown as cordons the Gooseberry has a tendency to push out numerous growths at the base, which must be kept down to encourage the principal or cordon growth. In summer there must be hard stopping at the base to prevent these robbing the main shoots, but this simple work need not deter anyone from growing Gooseberries in this way, as it is work soon done. Feeding should not be overlooked, a good mulch of decayed-manure in winter being well repaid. The trees like moisture, so should not be under eaves or in dry soil. If at all dry red-spider attacks the leaves in hot weather; and those trees rooting close to the surface need annual dressings of food in the way of manure or fresh soil, and if liquid-manure can be spared they like copious supplies. It may be given at any season other than when the fruits are colouring or ripe. As regards

VARIETIES.—I will name the old kinds first with small but high-flavoured berries; and as there are four distinct colours, it may be well to keep these apart. In the green section will be found the variety illustrated, and the green and yellow fruit are often richer than the others; but probably this is a matter of taste. The Greengage, or Hairy Green, is excellent; as also is Glenton Green, Green Hedgehog, and Green Gascoigne. I am not sure if this latter is not like Green Champagne. I see little difference amongst the red varieties; such kinds as Crown Bob, Ironmonger, Keen's Seedling, Red Champagne, and Red Rough, a well-known delicious small fruit, are excellent, indeed, amongst the best for preserving, and Warrington also. This is a late rough red, a grand north-wall variety, as it prolongs the season. The Whinham's Industry is a valuable red dessert Gooseberry, larger than the older reds, and an enormous cropper. It is excellent for market. In the white section Bright Venus, Cheshire Lass or Shiner, White Swan, and Whitesmith or Snowdrop, are all good. Amongst yellow varieties Golden Drop is a delicious fruit, also Yellow Champagne, Yellow Rough, or Early Sulphur, an early rich fruit, and Rumbullion, a variety used largely for bottling. It is a great bearer, and good grower in most soils. Among the

LANCASHIRE VARIETIES there is a much larger selection; indeed, these number over one hundred, so that they are bewildering to the amateur who only needs a few. I will give the names of half-a-dozen of each—those we have found crop freely. Amongst the green varieties Keepsake, Telegraph, Shiner, Overall, and Matchless are good. In the red there are some grand fruits, such as Dan's Mistake, Bobby, London, Speedwell, Wonderful, and Duke of Sutherland. In the white varieties will be found Antagonist, Alma, Freedom, King of Trumps, Progress, and Free Trade; and of the best select yellow fruits Drill is a delicious berry, also High Sheriff, Leader, Leveller, Kruger, and Trumpeter, and, as previously stated, these varieties do not grow so compact as the older or smaller varieties. They well repay for support, and must not be too hard pruned if slow growers, but merely thin the shoots when grown in bush form. W.

Gooseberry Green Champagne. From a photograph by Mr. F. Parren, Northgate-street, Canterbury.

A few spring-flowering plants (*Subscriber*).—Yes; there are many beautiful spring-flowering plants besides bulbs. There is the Aubretia (Rock Cress) in variety, certainly one of the freest and most beautiful of dwarf spring-flowering plants. Then there is Alyssum saxatile (Rock Madwort), a very showy golden flower. The Hepaticas, in colours of blue, red, and white, are a charming family. These, too, are very free flowering. Of the common Double Daisy there are quite a number, white, and different tints of red and pink, and in themselves form a pleasing group. The White Rock Cress (Arabis albida) is also very free and hardy, and thrives where many other subjects fail. The different types of Primula are of importance. The following are specially good: P. capitata, P. denticulata, P. Sieboldi, P. rosea, P. vulgaris (Common Primrose), the last-named being obtainable in a great variety of colours. Polyanthuses, too, may also be had in a variety of colours and markings. Then there is the Myosotis (Forget-me-not). M. dissitiflora is, perhaps, one of the most serviceable. In addition, the ollowing families should be represented: Sedum, Veronica, Tufted Pansies, Pyrethrums, Phlox, Silene, Centaurea, Doronicum, Trollius, Trillium, Iberis, Lithospermum, and the Vinca. There are many others.

Edging of Ivy.—I want to make a close edging of Ivy between a stone terrace and Grass bank. Please tell me the best Ivy for the purpose, how to plant it, and to keep it as an edging?—A. M. P.

*** There are several varieties of Ivy suitable for such a purpose, but perhaps the best of all is one named H. canariensis, commonly called Irish Ivy. It is a first-rate grower, and soon forms a pleasing edging. Another serviceable green-leaved variety, though not of such rapid growth, is known as H. Emerald Green. The present is a suitable time to plant them, and if they are placed a few feet apart they will soon cover the ground alloted to them. The leaves may be trimmed off every spring.

Growing Cyclamen in frames.—The general rule with the majority of gardeners nowadays is to sow their Cyclamen-seed in August or September, and grow the plants right up to the blooming time in pots. I recently learned from an old and very successful grower his method of culture. The seed is sown in September in pans in a compost of three parts sandy loam and one part peat, leaf-mould, and sand. The seedlings remain in the pans till the following May, when they are carefully planted out in a frame or shallow pit, having beneath them first a layer some 3 inches or 4 inches deep of thoroughly-decayed manure, and on this 9 inches of the above compost. Protect with the lights until the weather gets warmer, then expose entirely except when storms prevail. Water as required and lift the plants the first week in September, putting them into the same soil with the addition of a little rotten manure. Place them in a warm frame till the roots lay hold of the fresh compost, then give an airy position in an ordinary greenhouse. This was also done with old plants in summer.—J.

COCKSCOMBS.

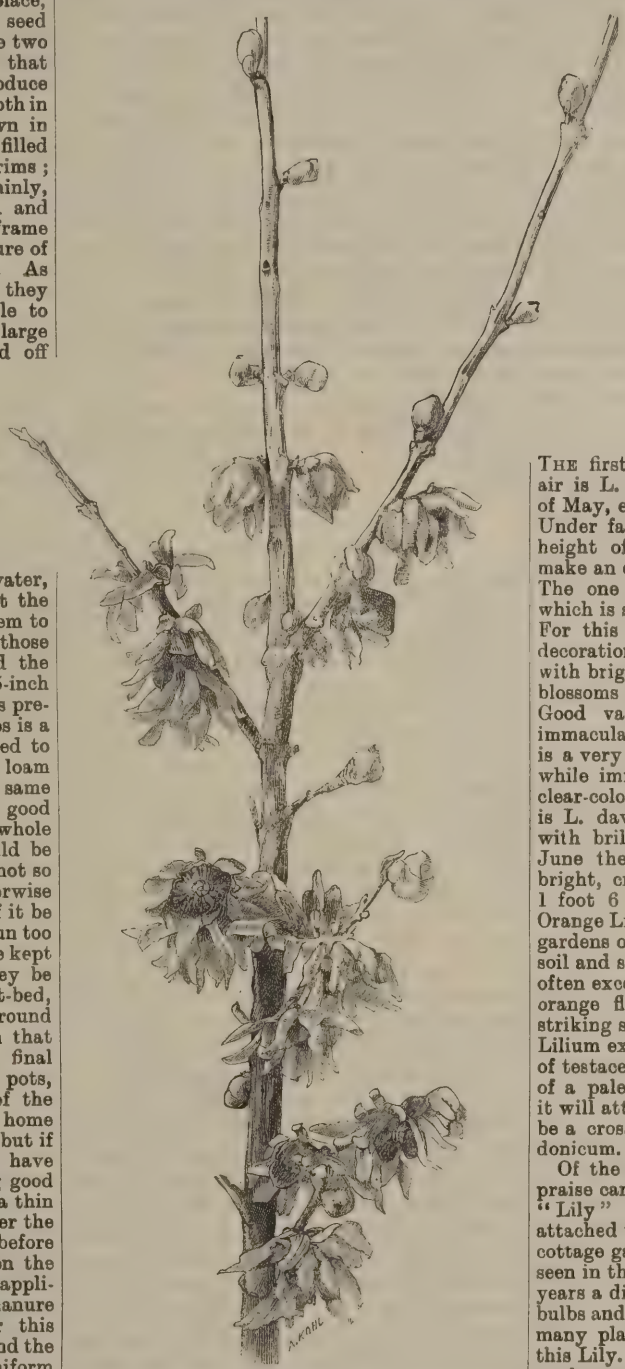
Though not often seen nowadays in good condition, this old tender annual is well worth all the attention it requires, as it is very ornamental and useful for the decoration of greenhouses and conservatories, or even for sitting-room windows during July, August, and September. This plant is generally considered somewhat difficult to manage successfully, and no doubt it does require a little ingenuity to produce the fine combs which one met with at flower shows in former years; but for ordinary purposes the treatment is simple enough. In the first place, in order to secure fine, healthy specimens, seed of a good strain must be secured. If it be two or three years old so much the better, as in that case the plants have such a tendency to produce coarse foliage, and the combs come finer, both in size and colour. The seeds should be sown in March or April, in well-drained pots, filled with rich soil to within 1 inch of their rims; scatter the seeds on this evenly and thinly, and cover lightly with a little silver-sand and fine soil. They will germinate best in a frame set on fermenting material in a temperature of 65 degs. by night and 75 degs. by day. As soon as the plants appear above the soil they should be kept as near the glass as possible to prevent them becoming drawn, and when large enough to handle they should be potted off singly in pots 2½ inches or 3 inches in diameter. In potting, place them in the soil up to the seed-leaves, and in order to preserve the roots from injury they should be carefully lifted. If it be not convenient to pot the plants off singly into small pots, they may be pricked off 1½ inches apart into pans or boxes filled with wet soil. They should then be encouraged to grow as fast as possible and not have too much water, for keeping them only moderately moist at the roots when in a young state will induce them to produce combs quickly, and as soon as those which are well-shaped can be selected the plants should be potted into 4-inch or 5-inch pots, giving them a little water a few hours previously. The best compost for Cockscombs is a rich loam, rather inclined to be light, pulled to pieces with the hand, not sifted; to ¾ of loam add ¼ of well-rotted cow-manure, or the same quantity of rotten hot-bed manure, and a good sprinkling of sharp sand, mixing the whole well together. In potting, the soil should be pressed rather firmly about the roots, but not so as to make the ball of earth too solid, otherwise the water will not pass freely away, and if it be too open the danger is that the plants will run too much to leaf. After potting, they must be kept as near the glass as possible, and if they be plunged up to the rim of the pots in a hot-bed, and with a warm, moist atmosphere around them, that will be about the best position that can be found for their free growth. The final shift should be into 6-inch or 7-inch pots, according to the health and strength of the plants. If they be merely required for home use the former size will answer very well, but if required for show purposes they should have 7-inch or 8-inch pots. At the last potting good drainage must be secured by the use of a thin layer of finely-broken brick or potsherd over the centre crock, and this shift must be given before the combs are too much developed. When the pots are well filled with roots, occasional applications of warm, clear, and weak cow-manure water will be very beneficial. Under this treatment good Combs will be produced, and the plants will sure to be dwarf and nearly uniform in size, a point of much importance when they are required for show. H. B.

Roman Hyacinths in frames.—Roman Hyacinths cannot be kept in the store-room very late in the season, and once February is in batches in pots or boxes under glass cannot be retarded for long. To prolong the supply for cutting, I plant a number of bulbs in a cold frame in November, covering with mats if the nights are very cold, but otherwise giving plenty of air. From these I procure a most useful lot of spikes throughout March and the early part of April. A depth of about 9 inches of nice friable loam is placed in the frame and plenty of sand put in the drills in which the bulbs are placed. The stems are certainly not quite so long as those on plants grown under ordinary house culture, but they are very much stiffer, and come in most useful for placing in small glasses. If need be they can be lifted and placed carefully in 4½-inch pots, and used for conservatory or room decoration, as they stand the ordeal better than most things.—J.

WINTER SWEET (CHIMONANTHUS).

It was a happy thought to give this Chimonanthus the specific name of fragrans, as its flowers have a fragrance which few possess, rivalling the delicious odour of the Stephanotis and quite as powerful. At this dull season it is quite refreshing to find a specimen, for we may travel far without finding our wish gratified. Although an old introduction, it is, strange to say, uncommon, notwithstanding having merits of no mean order. There is a fine spreading plant on the wall facing the lawn in the Royal Horticultural Society's gardens at Chiswick, and the leafless twigs every winter from December to January are beset with the curiously-formed pale yellowish flowers. It could be detected, though unseen, loading the air for yards around with its heavy, penetrating fragrance. As much of the young wood as possible is laid in each year, the rest spurred back, so as to obtain as much neatness as possible, consistent, of course, with the proper treatment of the plant. The main branches are well spread out, so that a good space is covered. The way to propagate it is by the suckers that spring up comparatively thickly round the base of the main stem. It is a plant that would delight the amateur, and we hope will be brought from obscurity into the position it deserves. In small gardens there is generally a wearisome monotony of shrubs, resulting in a sameness that becomes tiresome. Here, however, is a plant that will give pleasure all the year round; it shows plenty of good foliage in the summer, and a profusion of deliciously fragrant flowers during the very time we want them—viz., December and January. I may add that it grows best on a wall facing south or west and in a deep light soil.

There are several forms; grandiflorus, the largest sort, differs in size, others in the colour and strength of perfume of the flowers. T.



Flowering-shoot of the Winter Sweet (Chimonanthus fragrans).

LILIES FOR PLANTING IN THE GARDEN.

(In Reply to "Bluebird.")

The first Lily to unclose its petals in the open air is L. pyrenaicum, which, towards the end of May, expands its chrome-yellow Turk's-caps. Under favourable circumstances it attains the height of nearly 3 feet, and its red stamens make an effective contrast to the golden flowers. The one drawback to this Lily is its scent, which is strong, and, to some persons, offensive. For this reason it is not adapted for indoor decoration. L. umbellatum, of dwarf habit, with bright orange-red flowers, often opens its blossoms before the commencement of June. Good varieties of this Lily are punctatum, immaculatum, and atrosanguineum. The latter is a very dark form, the first is heavily spotted, while immaculatum, as the name implies, is clear-coloured. Closely allied to L. umbellatum is L. davuricum, another very handsome Lily with brilliant orange-red spotted flowers. In June the lovely L. tenuifolium produces its bright, crimson flowers on slender stems from 1 foot 6 inches to 2 feet high, while the old Orange Lily (L. croceum), so well known in the gardens of cottagers, is then in its prime. When soil and situation are to its liking this Lily will often exceed a height of 7 feet, and, its bright orange flowers being borne in profusion, is a striking sight when grown in good-sized clumps. Lilium excelsum, also known under the names of testaceum and isabellinum, is a lovely Lily of a pale buff tint. Under good cultivation it will attain a height of 6 feet. It is said to be a cross between L. candidum and L. chalcedonicum.

Of the Madonna Lily (Lilium candidum) no praise can be excessive. It is pre-eminently the "Lily" of our gardens, whether they be attached to castle or cottage. Indeed, it is in cottage gardens that these "stately Lilies" are seen in the zenith of their loveliness. Of late years a disease, which has killed thousands of bulbs and seriously weakened many more, has in many places seriously affected the culture of this Lily. No sufficiently-convincing theory as to the cause of this malady has yet been promulgated, and no remedy has proved efficacious in arresting the disease when it has once spread amongst the plants. A preference should be given to English-grown roots rather than to those imported from the South of France, as the latter are doubtless weakened by their long period of drying, and are thus less able to withstand fungoid attacks.

The old-fashioned Turk's-cap Lily (L. Martagon) is well worth growing, although its claret-coloured flowers are not particularly effective. Its white variety (L. Martagon album) is, however, quite a floral gem, and in no collection of Lilies should it be omitted. Of the dark varieties L. Martagon dalmaticum is the best. L. pomponium is a pretty little Lily, of much the same character, except in its leaves, as L.

Martagon; its flowers, which are numerous, are red in colour. The handsomest variety of this Lily is L. pomponium verum, the blossoms of which are bright scarlet. The lowly L. elegans, or Thunbergianum, which rarely exceeds a foot in height and bears lightly-dotted, bright orange flowers, will make a charming picture in the front of the Lily-bed. In July we have the giant Lily of the Himalayas (L. giganteum), which often grows to a height of 10 feet, and bears a dozen or more long, ivory-white blossoms, heavily stained within their tubes with purple, which emits a delicious vanilla scent. After flowering the old bulb dies, but throws off bulblets, which attain a blooming size in three or four years. When purchasing a stock of this Lily, therefore, it is well to procure bulbs ranging in size from the largest obtainable to bulblets, as in this manner a yearly flowering will be provided for.

In this month the so-called Swamp Lilies bloom—L. canadense, L. pardalinum, and L. superbum. They are all beautiful and exceedingly elegant, their daintily spotted flowers, ranging in colour from yellow to deep red, being lightly poised at the extremities of long footstalks, and swaying with every breeze, while their slender stems render them the most graceful of all the Lily tribe. L. canadense rarely exceeds 3 feet in height, but L. superbum and L. pardalinum often reach a stature of 7 feet. One of the latter expanded forty-seven blooms in my garden this summer. These three Lilies should be treated to a deep bed of peat and leaf-mould, with an admixture of sand if the peat be of a holding nature. Copious water supplies should be afforded during the summer. This latter recommendation indeed applies to all Lilies, but more especially should it be observed in the case of the Swamp Lilies.

Lilium Humboldti is a superb Californian Lily, growing 5 feet to 6 feet high, and having numerous flowers of a light orange tint spotted with lake; its variety, Bloomerianum, has darker-coloured blossoms. This Lily succeeds well in an ordinary Lily soil of loam and leaf-mould. We now come to the most brilliant of all the garden Lilies, the Scarlet Turk's-cap, L. chalcedonicum. A large clump of these Lilies blooming in a semi-shaded bed produces an effect that is absolutely dazzling. The blossoms are of a vivid vermilion hue, and, the petals being of unusual substance, are very lasting, and remain in full beauty for weeks. The newly-introduced L. Henryi is evidently of great value, as it bears its rich yellow flowers abundantly, and attains a height of 8 feet or 9 feet. It appears to be of particularly easy culture and not fastidious in the matter of soil.

In August the Golden-rayed Lily of Japan, L. auratum, opens wide its large, richly-perfumed flowers; neither this Lily, however, nor the White Trumpet Lily, L. longifolium, and its Bermudan variety, Harrisi, can be depended upon for permanent display in the Lily-bed. In some few instances they become established and bloom regularly year after year, but this is, I believe, of rare occurrence. It too often happens that they blossom well the first season, sparingly the next, and then disappear. Bulbs of both of these Lilies can, however, be procured now at so cheap a rate that an annual planting will not entail an expensive outlay. L. speciosum, in its various forms, is a delightful flower, its best known variations being distinguished by the distinctive titles of album, white; roseum, white, lightly spotted with rose; and rubrum, heavily suffused with rose colour.

Of the Tiger Lilies, the last of the open-air Lilies, there is the type L. tigrinum and the two vastly improved forms known as splendens and Fortunei. The flowers of all this section are of a deep orange-red, heavily spotted with purple-black. L. t. splendens and L. t. Fortunei often reach a height of 6 feet and more, the latter, in my garden, having exceeded 7 feet. L. t. splendens is said to be later blooming than Fortunei, but I have always found the latter Lily by far the more lasting, remaining in bloom with me till the middle of September. If "Bluebird" should wish to further enlarge the list of Lilies, L. Browni, L. Batemannæ, L. Hansoni, L. Maximowiczi, and L. Szovitzianum may be added, although those already enumerated will suffice to render the Lily-bed beautiful from May till September.

The ideal Lily-bed should be a sanctuary sheltered from all boisterous winds—for Lilies lose much of their beauty when the support of stakes is a necessity—and sufficiently secluded from the direct rays of the sun to enjoy at least a partial shade during the hottest hours of the day. The soil should be deep, neither quickly drying nor, on the other hand, unduly retentive of moisture. When this is sweet and well worked Lilies will flourish in it luxuriantly without any manurial addition to its staple. If manure be used, only that which has been thoroughly rotted should be incorporated with the soil. Placing fresh manure in proximity to Lily bulbs is a dangerous experiment, though I have known cases where L. giganteum in one instance, and L. excelsum in the other, appeared to benefit rather than to deteriorate under this treatment.

In planting the Lilies, unless the bed is a portion of a strictly formal garden, "Bluebird" should beware of lines; they are out of place in a beautiful Lily-bed, and are an abomination to the artistic eye. Let the flowers be grouped naturally in clumps of varying size, the dwarfer varieties towards the front of the bed, and the taller in the background, but the heights not too exactly graduated; as even such a slight matter as this may tend to suggest an air of stiffness, the very suspicion of which should be avoided.

The taller Lilies grow well amongst Azaleas, and form an attractive combination when planted in conjunction with Pæonies, both of the tree and herbaceous sections.

Tufted Pansies form a pretty carpeting with dwarfer varieties, as do some of the Saxifrages.

S. W. F.

ROSES.

THE ROSE GARDEN.

The true gardener will ever strive to produce harmonious blendings of the various plants under his charge. I admire as much as anyone a well-planned Rose garden, not the crowded, cramped thing of bygone days, but rather a bold, natural style, and it should most certainly consist mainly of the beautiful queen of flowers. There are certain periods of the year when some of the beds have a desolate appearance. Especially is this so with what are known as the summer-flowering varieties, and if this can be remedied in any way an additional interest will be imparted. Rose exhibitors will scorn the idea of introducing "interlopers," as they would call them, among their Roses. Their main objection is that the necessary stimulants cannot properly be given to the Roses, chiefly because strong manure would injure these surface-rooting subjects. But I am not an exhibitor, and have no desire to become one. I am content to cultivate Roses in order to beautify the garden and to afford an abundance of their sweet blossoms to adorn the home. With this object in view, and provided we commence right with well-prepared beds containing such a good lasting manure as bone-meal, very little surface feeding will be required beyond weak applications of liquid-manure. I cannot see where the introduction of some of these surface-rooting plants can interfere with keeping a good tilth to our Rose-beds. Now, as to the plants admissible among the Roses, it may safely be assumed that Daffodils, double Primroses, Scillas, Chionodoxas, Violets, Pansies, Iris reticulata, Alyssum, Anemones, etc., can do no harm to the roots of the Roses. The finest Roses I ever saw were planted in a long border, the ground of which was carpeted with Tufted Pansies, and the Roses were flourishing most luxuriantly. Even if space is no object, it is a greater pleasure to walk through a Rose garden in the spring and to see on every hand clumps of such beautiful spring flowers as I have named among the Rose-bushes, the beauty of the later-flowering varieties receiving additional charm from the tender foliage of the Roses. We may also go to the herbaceous plants and select many a lovely species and variety that would be welcome among the Roses.

It is generally conceded that the best effect is produced in the Rose garden by planting the various classes in groups of one kind. What I should like to see remedied is the ugliness of the beds of the summer-flowering Roses after the grand display of June. All through the months of August, September, and October the groups of the Moss Roses, Hybrid Chinese, Gallicas, and many of the pseudo-H.P.'s are devoid of a single Rose. Yet the Rose garden would sadly miss them in the beautiful June-time. They should most certainly be planted on the outside of the Rose garden, the centre and more prominent positions being given to the Teas, Hybrid Teas, and other autumnals. Supposing this arrangement were adhered to, I would recommend that spaces be left among the summer Roses for some of the best deciduous trees and shrubs.

By all means let the Roses have the pre-eminence, but, in my opinion, by planting such subjects as I have mentioned, and by mingling late-flowering Clematises with the summer-flowering Roses upon the arbours, pergolas, and Rose temples, we should take away a reproach often hurled at the Rose garden—that after the first bloom is over it is a very uninteresting spot in the garden.

P.

Rose Mme. Carnot (Noisette).—Although somewhat in the way of Wm. Allen Richardson, this Rose has some good points which should commend it to lovers of these beautiful fancy-coloured varieties. The orange colour of Mme. Carnot is not so deep as in Wm. Allen Richardson, but what makes it so attractive is the lemon-white-tipped petals and the perfectly modelled globular flowers, of medium size and very double. The growth is as free as that of its parent, W. A. Richardson. It succeeds best on the Brier either as standard or dwarf. It is a superb variety under glass, and would climb beautifully up the pillars of the house or trained in pillar form. This Rose must not be confounded with a Tea-scented variety bearing the same name.

Rose Baronne Gaston Chandon (Tea).—Although introduced so recently as 1894, this beautiful Rose is already making a reputation, especially as an exhibition variety. It is a bold, massive flower, the outer petals pointed in the manner peculiar to Maréchal Niel, La France, and others. The colour is straw-yellow, centre of flower slightly tinged with copper and pink, reverse of petals shaded rosy-carmine. It is very gratifying to find our raisers sending out Roses of vigorous habit such as the above variety, Mme. A. Chatenay, Clara Watson, etc. It is to be hoped they will in future refrain from putting on the market Roses of a weakly constitution, such as Luciole, for, however beautiful, they are always unsatisfactory and are constantly dying out.

Rose Souvenir du President Carnot (H. T.).—This handsome Rose is fulfilling in the forcing-house the good opinions formed of it during last summer. I consider this variety and Maman Cochet two of the best Roses introduced for some years. The colour of this variety is a lovely clear shell-pink, edged with ivory-white. The bloom is bold and large, petals very deep. It is also valuable to grow in quantity, producing as it does quantities of long-pointed buds fully 2 inches deep. What makes it especially valuable is its splendid constitution, reminding one of Viscountess Folkestone. The flowers are borne on stiff stems, their beauty being much increased by the fine foliage characteristic of this variety.—P.

Rose Golden Gate (Tea-scented).—This fine variety originated in the Golden Gate Park, San Francisco, hence its name. It will be largely cultivated in this country when better known. It has a beautiful shell-like petal, after the style of G. Nabonnand, but differing from that variety in its more double and pointed centre. The colour of the flowers, although not rich golden, is of a soft golden-yellow, shading to creamy-white. Frequently the tips of the petals and at times the whole flower are faintly suffused with delicate pink. The growth is very vigorous, although not climbing. It is admirably adapted for planting upon a low wall, and is most useful for forcing.

Rose Hippolyte Barreau (H. T.).—This is an excellent variety for forcing, and its bright carmine flowers, which are tinted with rich crimson, are very welcome during the dull months of the year. One can see at a glance that this Rose has Tea blood in it, although in foliage and wood it resembles the H.P.'s. The effect of its Tea-scented parentage is shown in its free-flowering character. It is sweetly scented, and last autumn it was one of the last to flower outdoors.

TREES AND SHRUBS.

SNOWBALL-TREES.

THE Snowball-trees are amongst the most showy of early summer-flowering shrubs. They are of easy culture and good habit, beautiful when in flower, and some of them very attractive in autumn by reason of their crops of richly-

Laurustinus (Viburnum Tinus).

coloured fruits. Being of such easy culture the Snowball-trees have suffered from reckless planting, as they are frequently seen in positions totally unsuited to their proper development. They pay for good culture, and planted in a fairly rich, moist soil and an open sunny position, they are objects of great beauty in May and June, when their huge balls of snow-white blossoms are being tossed about in the breeze. It is a mistake to plant these beautiful free-flowering shrubs in a haphazard way in the common shrubbery border, where they are denied sufficient room to display their true beauty. Neither should they be planted under the shade of trees or in conjunction with shrubs that will quickly outgrow them, and thus rob them of light and air. The Viburnums are excellent subjects for forcing into bloom for the conservatory in the early spring. The plants should be lifted in October and planted in pots of a suitable size, using a compost of loam and leaf-mould, after which they should be plunged in the open air and well mulched. In December the most forward

Chinese Guelder Rose (V. plicatum).

ones should be taken into a gentle heat (a high temperature is unnecessary), and well supplied with water. The syringe should be used freely amongst the top growth and the atmosphere kept moist. As the flowers develop it will be found advisable to remove the plants to a colder house, so that when they are transferred to the conservatory or dwelling-room the flowers will be better able to withstand the change of temperature.

THE COMMON GUELDER ROSE (Viburnum Opulus), the kind most commonly met with, is a native plant of much merit, but there are other sorts of greater importance deserving of wider cultivation. Briefly, the common Guelder Rose may be described as a dense bush or small tree, rising to a height of from 8 feet to 10 feet. It is a conspicuous object in autumn when laden with its ornamental berries. V. Opulus sterilis is a very fine form of the common Guelder Rose. It is free in both growth and bloom. Its large, globular heads of white flowers last a long time in a cut state. It is perfectly hardy, and thrives well where many other shrubs refuse to grow. V. O. nanus is well adapted for planting in front of taller-growing shrubs, as it rarely ever exceeds 18 inches in height.

V. ACERIFOLIUM (the Maple-leaved Guelder Rose) is a native of North America, from whence it was introduced so long ago as 1736. It grows freely in poor soils, and its white flowers, which are produced in June, are succeeded by crimson fruits in autumn.

V. MOLLE is somewhat scarce in British gardens. In suitable soils and positions it grows to a height of about 12 feet. It commences to flower about the end of June, and its purplish-blue berries ripen towards the end of September.

CHINESE GUELDER ROSE (V. plicatum) is the best of the Snowball-trees. It is hardy in most situations, but as it is apt to get cut by early spring frosts it is advisable to select a sheltered spot. It grows freely in ordinary garden soil, but delights in a mixture of good loam and rich leaf-mould, to which has been added a little peat. It is, however, very important that the drainage should be perfect, as it refuses to thrive if water is allowed to become stagnant at its roots. It looks well planted in groups on the Grass, of, say, six or seven plants in a bed. It does not require very much pruning beyond the removal of the weak, unripened growths and the vigorous shoots shortened. Its large pure white heads of flowers are borne very profusely along the branches. In cold districts it well repays the trouble of planting against a wall. V. plicatum tomentosum may be distinguished from the type, as the flower-heads are smaller and the sterile flowers confined to the outer part of the inflorescence. The leaves, too, are much more hairy.

Guelder Rose or Snowball-tree (V. Opulus var. sterile).

Other fine kinds are V. prunifolium, V. dahuricum, and V. Lentago, and we must not omit mention of the

LAURUSTINUS, which is not always regarded as a Viburnum, but such is the case. Its botanical name is V. Tinus, and there are several varieties of it. Lucidum is one of the most important, the leaves large and shining, and the flower-clusters are larger and whiter than those of the ordinary form. Another fine variety is rotundifolium. The Laurustinus is not quite hardy in Britain, needing a mild district, but it is pleasing when in good health, and flowers in the winter season when few things indeed are in bloom. It is most happy on warm light soils. A.

Tall Poplars.—I want to make a screen of these to hide some new houses. Do they exhaust the soil or prevent herbaceous plants growing near them?—G.

*** Poplars are well adapted for making screens. They do not rob the ground of its goodness more than any other fast-growing trees. Herbaceous plants will grow near them, but they certainly ought not to be planted under the shade of the Poplar-trees.

Daphne Laurel.—Can any correspondent tell me how to treat this delightful shrub, and whether, near London, it requires any protection in winter?—G.

*** We presume you mean Daphne Laureola, an evergreen shrub whose yellowish-green flowers are borne in clusters in spring. It is perfectly hardy near London, and grows well in very poor soils. The Daphnes are very useful, hardy shrubs, as their flowering period covers several months of the year. They thrive best in rich, well-drained soil.

Beech-trees for fence.—Will you kindly say how far apart Beech-trees should be planted to form a fence? and oblige—FAGUS.

*** It all depends on the size of the Beech-plants; but if they are from 1 foot to 2 feet in height, four to the yard will be sufficient.

PLANTING A BORDER.

I SHALL be much obliged if the Editor will give me some advice as to how to plant the following border in my garden here. The border is in front of a wall on which are planted Black Currants. The whole border is about 6 feet wide by 120 feet long, but only 4 feet wide can be planted, as a space has to be left in front of the Black Currants. The wall runs about north-east to south-west, and is about 8 feet high. On the other side of the wall are large deciduous trees, which overhang and shade the border. I tried beds of annuals in this border last year, but they did not do well, and previously I had some herbaceous plants in it, which did rather better. Opposite this border, on the other side of a gravel walk, is a herbaceous border planted with various perennials. I omitted to say that the wall is to the east of the border. EDNA.

*** "Edna's" long border, shaded as it is during the summer by deciduous trees, should be eminently suited to the culture of Lilies—that is, if the soil is not permeated by roots. If this should be the case, the border should be cleared out to a depth of at least 2 feet 6 inches, and the worn-out soil replaced by fresh. Another good way of growing Lilies in a root-infested bed is to sink casks, from which the tops and bottoms have been removed, in the border till the rims are about 2 inches below the surrounding surface of the soil, and fill them with good compost. By adopting this method of culture the tree-roots are some time in finding their way into the soil in which the Lily-bulbs are planted. Good garden Lilies are L. umbellatum, dwarf, orange-red; L. candidum, the well-known Madonna Lily; L. croceum, orange; L. Martagon album, white; L. chalcedonicum, vivid vermilion; L. Humboldti, orange, spotted lake; L. Henryi, rich yellow; L. pardalinum, deep orange-red, spotted claret; L. tigrinum splendens; and L. tigrinum Fortunei, orange-pink, spotted black. L. auratum and L. longiflorum, two beautiful Lilies, should also be grown; but in many gardens these last in beauty but a single year, and have, in consequence, to be often replenished. There are many other Lilies that may be successfully utilised for the embellishment of the garden.

Some of the Anemones may be tried with good results, notably A. apennina, A. Robinsoniana, A. blanda, and A. Pulsatilla, and, if peaty soil be provided, the Wood Lilies (Trillium grandiflorum and T. sessile californicum) should flourish. Irises in variety should also be planted, a selection being made of the best of the Spanish, English, and Flag sections. In procuring Spanish and English Irises care should be taken to obtain self-colours, which are far preferable for effect to splashed and striped flowers. In the Spanish section: Canary-bird, yellow; Golden King, orange; Snow Queen, white; and Celestial, blue, are good. While of English Irises the dark purple, blue, lavender, and the white are very ornamental when planted in large clumps of one colour. Of the German or Flag Irises, the White Princess of Wales; florentina, white, turning to pale lavender; pallida and pallida dalmatica, of differing shades of lavender, sweetly scented; flavescens, pale yellow; Queen of the May; Mme. Chereau, and Victorine are all handsome varieties. The Giant Oriental Poppy (P. bracteatum) should also find a place in the border, as well as the Iceland Poppies (P. nudicaule), orange, yellow, and white; the Welsh Poppy (Meconopsis cambrica), and P. pilosum.

The beautiful Hybrid Alstrœmerias, ranging in colour from cream to crimson, should be given a trial, as well as the charming Hybrid Aquilegias, with their suave colour gradations. These latter should do well under deciduous trees, as it is in such situations that the Wild Columbine often forms such a delightful picture. Campanulas, too, should be planted—C. grandis and C. latifolia, with their white varieties, the Peach-leaved Campanula (C. persicifolia alba), its double variety C. p. a. fl.-pl., as well as the newly introduced C. p. a. grandiflora, which has larger flowers than the type. Narcissi in clumps should flower well during the spring, and gain an added charm when rising out of a carpeting of the Blue Myosotis dissitiflora, while Tufted Pansies should retain their beauty for a lengthened period when not exposed to the burning rays of the sun. The Cape Hyacinth (Galtonia candicans) and the Scarlet Gladiolus brenchleyensis make an effective contrast in the early autumn; while of Michaelmas Daisies the most suitable would be Aster Amellus bessarabicus, A. ericoides, and the varieties of cordifolius, as these do not rise to sufficient height to interfere with the ripening of the Currant shoots. Many other flowers may be included in the list as suitable for the herbaceous border, such as the Anthericums, Day Lilies, Libertia grandiflora, Lily of the Valley, white Pinks, Fair Maids of France (Ranunculus aconitifolius fl.-pl.), the double white Rocket (Hesperis matronalis alba fl.-pl.), Achillea Ptarmica fl.-pl. The Pearl, Dianthus Napoleon III., a brilliant crimson, Lychnis chalcedonica, Linum flavum and Linum narbonense; the Evening Primroses, especially Œnothera fruticosa and the sweet-scented white Œ. marginata. All of the foregoing are early summer bloomers. Coreopsis grandiflora, which flowers from May till late autumn, is of great value in the hardy plant border. In July there are the Carnations, Gaillardias, Gypsophila paniculata, and Statice latifolia, two most delicately-beautiful plants, and Scabiosa caucasica, while, later on, come the Japanese Anemones and the Montbretias, with their vivid orange-scarlet scapes.

From the foregoing "Edna" should be able to select plants that will beautify her 120-foot border for some months. The shade may, of course, prove too dense to induce a floriferous habit, but, seeing that Currants appear to thrive on the wall at the back of the border, failure from this cause seems unlikely.

Planting in lines should be studiously avoided in the hardy flower border. Such a system may be tolerated in the strictly formal beds of the so-called Italian garden, but is entirely out of place in that of the lover of the beautiful in nature, to whom evidences of the foot-rule in the resulting lines, angles, and patterns are an abomination. In long borders, such as "Edna's," flowers are most attractively seen when growing in informal colonies, groups, and breadths. Here a clump of a dozen Lilies, a model of gracile form; here a space blue with the azure of Forget-me-nots; here the brilliancy of the Scarlet Poppies, or the silver of the Poet's Daffodils. The practice of dotting plants singly about the border is to be deprecated. It strikes a note of discordant triviality that is totally at variance with the atmosphere of rest that should reign in the ideal garden. S. W. F.

THE SCARLET SPURGE (EUPHORBIA JACQUINIÆFLORA).

The subject of the illustration is one of the most conspicuous among a numerous family, and is met with under more or less successful cultivation in many of our gardens. When well grown under favourable conditions it is one of the best winter-flowering plants that we possess. Its blooming period being the dullest season of the year renders it all the more valuable. It is not, although introduced into this country from Mexico in 1836, nearly so well known or grown as it should be. This arises, no doubt, from its requirements not being so well understood as in the case of many other plants now cultivated. To commence with propagation, which will not unfrequently result in failure at the outset, but, nevertheless, must not discourage, I will endeavour to detail my mode of culture. I like to secure cuttings during the latter part of March onwards to June, as may be most convenient or suitable at the time. Thoroughly expose the plants to all the light and sunshine that can be afforded them prior to the cuttings being taken off. This should be done when the young

Flowering-shoot of Euphorbia jacquiniæflora.

growths are about 3 inches or 4 inches in length, securing a heel to each cutting, inserting five or six in a small pot, with sufficient room between each to allow of a fair amount of soil to every young plant. A light soil with a liberal addition of silver-sand is good for propagation, pressing each cutting firmly in its place and at a good depth. Unlike many plants raised successfully in the propagating pit with an abundance of moisture to sustain their vital functions during the time from inserting the cutting till rooting has fairly commenced, this Spurge does not relish this excess, and if not guarded against will tend to failure. I would recommend propagation, where possible, to be done under bell-glasses or hand-lights placed in a warm-house, where the cuttings can be shaded and watered as may be found necessary. The moisture arising from a large amount of plunging material is not congenial to their well-being at this early stage, nor indeed is it requisite at any later period of their culture.

When well rooted each young plant should be potted singly into a small pot, and again shifted into a larger size as growth proceeds. Six-inch pots will be sufficient for the first year from the cutting, and each plant should be well established by the end of August to ensure success in flowering during the following winter. As previously hinted, exposure to all the light possible when well rooted is needful to secure well-ripened wood that will produce flowers of the longest duration. I was impressed with this fact during the past autumn and winter. Through having a good stock of young plants I turned two out in a newly made up bed for Gardenias, where they made fresh lateral growth and flowered freely, apparently equal to others in pots, but with this important difference, that when used in a cut state those sprays taken from the pot plants, having well-ripened wood, were fresh at the end of a week, whereas those from more recently made autumnal growth withered in a few days. This clearly shows the necessity of securing well-ripened wood during the early autumn months, aided by a moderately dry atmosphere and a somewhat high temperature.

Plants of this Spurge can be grown on successfully for three or four seasons, but a young stock of at least a few plants should be propagated annually. Throughout their season of growth I recommend firm potting, choosing good peat and loam for that purpose, or leaf-mould as a substitute for the former if of good quality.

Its uses are not confined to the stove only, for when in good bloom plants can be taken to the conservatory, keeping them when there slightly drier at the root. Thus used they will produce a good effect, their informal growth and elegant arching appearance contrasting well with the too neat and prim character of many subjects, especially such as have been tortured by severe training. In a cut state I find them most useful for vases in the house, keeping, as previously stated, so well when properly treated. They look well in combination with white flowers, better than any other colour, white Roman Hyacinths in particular. Tiny sprays of flower are useful, too, for button-holes, the leaves connected therewith being an excellent background, and as good as can be chosen. Euphorbia splendens is another species (of easy culture) well worth growing in any collection of plants. It is more accommodating as regards temperature. I grow it in a house that frequently falls as low as 40 degs. during cold weather. Its armour of stout, sharp thorns is somewhat formidable, especially where due care is not exercised in handling the plant. This species has come under my notice more particularly when grown near the sea-coast; there it assumes quite a robust character, so much so that it might be taken for an improved variety; in fact, it has been so called, but I am inclined to attribute this improvement only to the surroundings being more congenial to its well-being. This was introduced from Bourbon about 1826, and is a plant I can recommend with confidence to the amateur cultivator as an excellent addition to his collection, for with a fair amount of care failure would be hardly possible. J.

GARDEN PESTS.

Beetles in stove (*E. Smith*).—The insects you send are specimens of Periplaneta australasiæ, one of the cockroaches which have comparatively recently established themselves in this country, in greenhouses, kitchens, and other warm places. The common cockroach has been known in this country for the last 200 years, and is now only too abundant all over England. Three other species, of which one infests your houses, are at present only found in a very limited number of localities. As traps seem to be of no use, you had better try poison, and if you can find out where they hide during the day blow insect powder into their shelter every day until you have exterminated them. This plan is most successful in kitchens.—G. S. S.

Marguerite Daisy-leaves eaten (*E. W. Waite*).—The leaves are attacked by the grubs of the Marguerite Daisy-fly (Phytomyza affinis). The best way of destroying this pest is by cutting off such leaves that are so badly attacked that they can be of no further use to the plant, and by looking through the others towards the light and pinching them at the part where the grub is seen to be, or by running a needle through the part. The parent insect is a small, inconspicuous greyish fly. As regards your Lilies, I should at once cut off and burn all the diseased leaves. I do not think it would be of any use spraying the plants now.—G. S. S.

Grubs at Cyclamen roots (*C. Dawson*).—The roots of your Cyclamen are attacked by the grubs of the black Vine-weevil (Otiorrhynchus

sulcatus), a common and very destructive pest to the roots of these plants as well as to those of Primulas, Begonias, Ferns, and various other plants. I am sorry to say that I cannot tell you of any means of destroying them, except by picking them out from among the roots. The beetles are also very destructive, but they injure the leaves of Vines, Ferns, and other plants. They are very difficult to find, as they only feed at night. If it is suspected that a plant is attacked by them, it should be laid on its side on a white cloth, or the cloth laid under it, and when it is dark a bright light should be thrown upon it. This will probably cause the weevils to fall, when they will easily be seen on the white cloth. If they do not, give the plant a good jarring shake, and search it thoroughly.—G. S. S.

Ground fleas *(J. Busch).*—I am sorry to say that I am unaware to what insect you allude when you speak of "ground fleas," so I cannot tell you how you may best destroy them; but if you will kind'y send some in a little box, I will give you what information I can about them.—G. S S.

BOOKS.

HARDY PERENNIALS.*

This is a book useful to those who care for hardy flowers, and if too much is written about unsatisfactory things such as Arisæma Triphyllum, or A. crinitum, which receive more consideration even than the glorious Flame-flowers (Tritomas), there is much useful information in the three hundred pages. Mr. Wood knows much about hardy plants, and the information he gives may be trusted. Almost a page is filled with a description of that curious Ivy (Hedera conglomerata), described as an "ornamental shrub," but upon this point opinions may differ. Such faults as these one may discover, but these do not outweigh the merits of the book. The following notes upon "Primroses" will show the kind of work this is—

"This common native flower needs no description, growing everywhere, yet we all seem to enjoy its company in our gardens, though it may, perhaps, be seen wild close by. It is a flower of more interest than ordinary, and to the florist of some importance. The great variety of double and single Primroses have all sprung from this, the modest form found in our woods and damp hedgerows, and the number is being added to year by year. The generic name is in allusion to a quality—that of early or first flowering. The specific name, acaulis, is in reference to its stemlessness, which is its main distinguishing feature from the Polyanthus and Oxlip (P. veris). I may add, that from the great variety of P. acaulis and P. veris, and their mutual resemblance in many instances, the casual observer may often find in this feature a ready means by which to identify a specimen. Of course, there are other points by which the different species can be recognised, even when the scape is out of sight, but I am now speaking of their general likeness to each other in early spring.

"Common Cowslips or Paigles (P. veris), great Cowslips or Oxlips (P. elatior), field Primrose or large-flowered Primrose (P. acaulis), were all in olden times called by the general name of Primrose, the literal meaning of which is first-rose. Old authorities give us many synonymous names for this plant, as P. grandiflora, P. vulgaris, P. sylvestris, and P. veris. The last is given by three authorities, including Linnæus. As this seems to clash hard with the name as applied to the Cowslip species, I may at once state that Linnæus has only that one name for the three species—viz., P. acaulis, P. elatior, P. veris; the name P. vulgaris, by another authority, is explained by the same rule; Curtis ('Flora Londinensis') is the authority for the name P. acaulis.

"I need not here go into any of the varieties, beyond giving a cursory glance at them as a whole. The double kinds are all beautiful, some superb and rare, as the ruby and crimson; the white, sulphur, mauve, magenta, and other less distinct double forms are more easily grown, and in some parts are very plentiful. The single kinds have even a more extensive range in colour. We have now fine reds and what is called blue Primrose; the latter variety is not a blue, but certainly a near approach to it. It is an interesting occupation to raise the coloured Primroses from seed, not only because of the pleasing kinds which may be so obtained, but under cultivation, as in a wild state seedlings are always seen to be the more vigorous plants; self-sown seed springs up freely on short Grass, sandy walks, and in half-shaded borders; but when it is sought to improve the strain, not only should seedlings be regularly raised, but it should be done systematically, when it will be necessary, during the blooming season, to look over the flowers daily and remove inferior kinds as soon as proved, so that neither their seed nor pollen can escape and be disseminated. This part of the operation alone will, in a few years, where strictly carried out, cause a garden to become famous for its Primroses. Seasonable sowing, protection from slugs, and liberal treatment are also of the utmost importance.

"Briefly stated, the *modus operandi* should be as follows: Sow the seed at the natural season, soon as ripe, on moist vegetable soil; do not cover it with more than a mere dash of sand; the aspect should be north, but with a little shade any other will do; the seedlings will be pretty strong by the time of the early frosts; about that time they should, on dry days, have three or four slight dressings of soot and quicklime; it should be dusted over them with a 'dredge' or sieve; this may be expected to clear the slug pest, after which a dressing of sand and half-rotten leaves may be scattered over them; this will not only keep them fresh and plump during winter, but also protect them from the effects of wet succeeded by frost, which often lifts such things entirely out of the earth. In March, plant out in well-enriched loam, in shady quarters; many will flower in late spring. Another plan would be to leave them in the seed-bed, if not too rank, where most would flower; in either case, the seed bed might be left furnished with undisturbed seedlings. The main crop of bloom should not be looked for until the second spring after the summer sowing.

"The double forms are not only less vigorous, but the means of propagation are limited; offsets of only healthy stock should be taken in early summer. A rich retentive loam suits them, or moist vegetable soil would do; shade, however, is the great desideratum; exposure to full sunshine harms them, even if well moistened at the roots; besides, in such positions red-spider is sure to attack them. This mode of propagation is applicable to desirable single varieties, as they cannot be relied upon to produce stock true to themselves from seed. In planting offsets it is a good practice to put them in rather deeply; not only are the new roots emitted from above the old ones, but the heart of the offset seems to be sustained during the warm and, perhaps, dry weather, by being set a trifle below the surface. This I have ever proved to be a sure and quick method in the open garden."

AMATEURS' FLOWER GARDEN.*

This is a revised edition, and the additions made by Mr. Sanders are more helpful than much of the information given in the original book. We still see plans of flower-gardens with wriggling beds, but the new illustrations are in many cases pleasing and instructive. Much information is given in the clearly-printed pages, the remarks covering the raising of hardy plants, annuals, biennials, seasonable duties, and other useful notes.

ORCHIDS.

Growing Orchids in conservatory.—I have a large conservatory attached to drawing-room and facing due south, so that it gets a deal of sunshine. I understand from an article in one of your issues by "W.,B.," that Orchids will not thrive in such a house, therefore I am about to erect a small span-roofed house about 9 feet by 6 feet, and should like to know best position to place it, so that I may succeed with Orchids. Should the length be north and south or east and west? It will be away from the house, but there is a wall 5 feet or 6 feet high, facing north, at bottom of garden. Can I grow cool and intermediate Orchids together in same house?—Surgeon.

*** I would advise you to build your new Orchid-house running north and south. Against the wall facing north would be a very suitable position for a house wherein to grow cool Orchids, especially such varieties as Odontoglossum crispum, O. triumphans, O. Halli, O. Pescatorei, O. cirrhosum, O. Rossi, Sophronites grandiflora, Oncidium macranthum, O. serratum, O. superbiens, O. loxense, also Masdevallias, Cochliodas, Cypripedium insigne, and many others. If you prefer erecting a span-roofed house, you could possibly grow both cool and intermediate Orchids by putting the cooler-growing species at the coolest and most shady part of the house, and, of course, those plants from slightly warmer climates in a reverse situation.—W., *B.*

Name of Orchid *(M. B).*—The Orchid-flower sent is a variety of Maxillaria picta. Its principal cultural requirements are a cool, moist greenhouse and a liberal amount of water at the root when making growth. It is not advisable to afford heavy waterings when the plant is not growing, the drier being the safest side at that period. If the plant has become pot-bound, or the soil sour and decomposed, it should be repotted. The proper time for the operation is immediately fresh growth commences. It is important when repotting to afford plenty of drainage. The pot, therefore, should at least be half filled with crocks. The compost should consist of one-third good fibrous peat and two-thirds Sphagnum Moss, with plenty of small crocks or pieces of broken bricks intermixed with the soil to insure drainage. Pot firmly, and keep the base of the plant a trifle elevated above the rim of the pot. For a few weeks it is only necessary to keep the surface of the compost just moist, so as to keep the Sphagnum Moss alive and fresh; but when the new growths commence to push out fresh roots the quantity of water may be gradually increased.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2526—**Calla with double flower** *(E. A. P.)*—Simply a freak. It often occurs where many plants are grown.

2527—**"Bulbs" on Aspidistra** *(T. H.).*—The little "bulbs" are flowers, which in the Aspidistra, as you will observe, are very curious.

2528—**Anemone fulgens** (The Scarlet Windflower).—"Subscriber" evidently refers to this beautiful and highly-coloured Anemone. The plant succeeds well in any good drained soil. It is very late to plant them now, the best period for planting being September or October. You should have no difficulty in getting what you want from any respectable nurseryman or florist.

2529—**Zonal Pelargoniums** *(Geranium).*—Yes; gradually withhold water from your "Geraniums," and keep the plants dry at the roots until the spring-time. We do not think it would be wise to shake the plants free from all soil and pack them in a box in sand, and store away till spring. Do as we have here suggested, and then in the spring cut down the long stems to within two joints of the main stem. Afterwards place them in a warm position, and after they give evidence of new growth they may be shaken out and re-potted into some nice, nutritious compost. You must keep them in a fairly dry atmosphere in the meantime, and protect from frost.

* "Hardy Perennials and Old Fashioned Garden Flowers." By J. Wood. Published by Upcott Gill, 170, Strand, London. Price 3s. 6d.

* Published by Messrs. Collingridge, Aldersgate-street, London, E.C. Price 3s. 6d.

2530—**Long border** (*G. P.*).—So far as your list goes it is a fairly good one, and we think you might with advantage add the following: Roses, Kalmias, Yuccas, Spiræas, Genistas, Phloxes, Heuchera sanguinea, Irises, Anemones, Statices, Michaelmas Daisies, Aquilegias, Dictamnus Fraxinella alba, Monarda didyma, Campanulas, Pyrethrums, Carnations, and Hypericums. The plants may be shifted now or any time during suitable weather until April.

2531—**Plants for beds** (*Scotland*).—Your query is very vague. You do not give us any idea whether you prefer ordinary bedding plants or if you want plants to remain permanently in the beds. In the first place your beds are far too small. It is a great mistake to chop the ground into so many plots. Large beds produce better effects than small ones. Perhaps such things as Ageratums, Calceolarias, Pelargoniums, Mignonette, Dianthuses, Tropæolums, etc., would suit you. The undermentioned are of more enduring character: Helianthemums, Pansies, Aubrietias, Erigerons, Heuchera sanguinea, Iberis, Trollius, Campanulas, Gentiana acaulis, Calochortus, and Gaillardias.

2532—**Bush Fig-tree** (*Balham*).—There is poor prospect of your getting fruit of any value on a Fig-tree out in the open. The best thing you can do, if you cannot afford to enclose it in a glass-house, is to cut back the oldest branches each winter, thus encouraging it to produce fine strong young ones, and then you will get a very handsome shrub, as the leafage is very fine and effective. The Fig is, so treated, one of the best deciduous town shrubs, keeping its full leafage late into the autumn. The Golden Elder, if similarly treated, also makes a noble summer shrub. So also do the Tree of Heaven (Ailanthus glandulosus). This hard cut back every winter throws up noble growths and grand leafage every summer. So also will many other things.

2533—**Double Primulas** (*China*).—There is a strain of double Chinese Primroses called semi-doubles that are raised from seed, just as the singles are. They differ from the true doubles in so far that the latter have petals so densely set that they take the place of anthers or pollen organs entirely, hence they cannot produce themselves from seed. The semi-doubles, of which there are several colours, have fertile organs, but all the flowers have to be pulled open and hand fertilised to enable seed to be produced. For that reason seed is always scarcer and dearer than is that of pure singles. The flowers of the true doubles, especially such a good one as White Lady, being on strong plants borne in great profusion, are most useful to gather and fix on fine wire, and then work into bouquets or buttonholes.

2534—**Tomatoes for house** (*Perplexed*)—If smooth Tomatoes will not satisfy you—and you can hardly have better for your purpose than Conference, Duke of York, or Frogmore Selected—then get Conqueror or Magnum Bonum, provided, of course, you get them true. These latter are ribbed fruits, but are great croppers. But are you wise in planting Tomatoes in the same ground every year? We certainly should advise you to have one half of the soil, say to a depth of 6 inches, wheeled out, and be replaced with soil from the garden-ground. Apart from the fact that soil planted every year necessarily does get somewhat sick of the same crop, there is always danger that any fungoid disease generated may be passed from crop to crop. Give a dressing of lime and soot now, and use Basic Slag liberally just before planting.

2535—**Pruning Fig-tree** (*G. A. H.*).—Although it is not the rule to prune Fig-trees hard, yet they must have some thinning. As, for instance, when a branch becomes bare of shoots, it is best to remove it altogether and lay in to the space thus created some younger branches. It is from the young branches that fruits come, therefore, in all pruning not only should the best or ripest of these be preserved and nailed in, but older branches must be occasionally cut out to make room for them. Pruning, or rather thinning, should be done now. The fruiting shoots may be from 6 inches to 9 inches apart. Too much crowding leads to the production of unripe shoots, and too hard thinning to the growth of shoots that are far too gross or coarse. Cut away from the base of the trees any suckers that are not near enough to the wall to be nailed into it.

2536—**Liquid-manure** (*W. L.*).—There is no reason why your liquid-manure in open casks should not largely retain its nutritive properties till next season, unless there be so much rain in the interval as to cause the liquid to overflow and waste. Why not make some rough lids and lay over the tops of the tubs, as that will protect the contents from waste by over-dilution or absorption? If thus protected, you may find your animal-liquid-manure extra strong, and need to be used next season in the proportion of 1 of the manure to 4 of water. The soot liquid may be strengthened, if needed, by placing more soot into it. The best way to do that, or, indeed, any solid form of manure other than artificial, is to place it in a coarse canvas-bag, and then occasionally turn it about in the water. So treated, the manurial properties are dissolved, whilst the solids remain in the bag.

2537—**Trenching ground** (*F.*)—When it is advised to trench and manure ground in the winter, it should not be overlooked that what is advised is not meant for every year. A good trenching often suffices for four or five years. Of course, when this work is done, the soil must be bare until cropped with Peas, Potatoes, or other early things. But the following winter, rather than allowing the soil to remain bare—for no good whatever results—it is so much better to sow early in September, thickly, Tares, and Rye, or Oats, the best of all green crops; or Mustard, or Rape, or Turnips, and let the crop grow until February, then dig it in, and, if it can be spared, a moderate dressing of manure also. Of course, sometimes the ground may be carrying Cabbages, Winter Greens, Onions, etc.; but a good gardener always manages to so vary his cropping that the only empty ground is that to be trenched.

2538—**Various** (*O. F.*)—It is not only a good plan to change the position of diverse kinds of vegetables from year to year, but it is also a matter of convenience, as no gardener could profitably arrange for his crops to follow on the same ground every year. Rotation in cropping means that Cauliflowers may succeed Peas, Potatoes Cauliflowers, Turnips Potatoes, and so on, because each crop needs its own special food, which the preceding crop may have left behind in the soil. Privets generally are best hard-pruned in March, as new growth then soon follows. Where the summer shoots are strong it is a good plan to cut them back one-half at the end of July, and then they break afresh, and thus keep green longer in the winter. That is specially desirable treatment for the variegated variety, which thus keeps a bright colour longer. This advice applies to newly-planted ones; also especially to those that are rather bare towards the bottom.

2539—**Plum-trees on walls** (*Birkenhead*)—You seem to have made just what would have been our own suggestion in reference to your too gross and not fruitful Plum-trees. The photos of them sent clearly show that they make wood of too gross or sappy nature to lead to fruit producing. Without doubt, they have too much root hold, and the strong ones need to be severed. You may, however, accomplish this by opening a trench all round fully 3 feet from the stems, cutting clean off all strong roots, and saving fibrous ones, also grubbing under the trees with a sharp spade, and cutting off any roots striking downwards, then filling in fresh soil under and about the roots. Pruning, all the same, should be very moderate indeed, lest too much summer wood be again produced. Top-cropping should be limited to very shallow rooting things. Really the border would be better if it were trodden down hard and then mulched with manure.

2540—**Amateurs' Apples** (*F. C.*).—Presumably you want to know of free-cropping and moderate growing varieties of Apples suited for a garden of about the sixth of an acre in extent. Of six varieties, all grown as ordinary standards, and none making coarse, spreading heads, you will find of cooking varieties, Manx Codlin, Stirling Castle, Cellini Pippin, and Lane's Prince Albert to be excellent for your purpose, and of the best croppers. Of eating and dessert varieties you can hardly do better than have Cox's Orange Pippin and Cockle Pippin. These are both good keepers and, therefore, are far more valuable to have than are the best early varieties. Both too are highly-flavoured. All the Apples named, once they have good heads formed, need little pruning. They simply need to be kept thinned, and that not too severely; any unduly gross branch may be shortened back. Such trees when cropping are all the better if helped by a liberal manure mulching.

2541—**Erecting greenhouse** (*G. R.*).—The only book we have been able to learn of, after making considerable inquiry, that relates to the subject of greenhouses and pits for growing fruits and flowers, is "Horticultural Buildings," by F. A. Fawkes; publishers, Swann, Sonnenschein, and Co., London. The price we cannot give. No doubt a local bookseller can obtain it for you. All the same, we think you may find this book to be of a rather pretentious character, as it is the product of an architect. The general tendency of the architect is to make glass erections to fit the mansion, which may be all very well so far as a mere ornamental conservatory is concerned, but would not do for one moment, so far as relates to houses intended to grow fruits and plants in. Cannot you visit some good garden or nursery, and see how the class of house or pit you desire to have is erected, and get leave to obtain dimensions and substance and class of material used in construction, which would be very helpful?

2542—**Starting vineries** (*New Reader*).—As you have evidently ample heating force you can start your earliest vinery gently about the middle of this month; your Grapes should be Black Hamburgh or some other early variety. Then start the second one middle of February, and the third one early in March; or in the latter case you may leave the Vines to start naturally, giving, however, a little extra warmth when in bloom and help set the Grapes, also a little additional warmth when the berries are colouring. As your borders are outside there is not the same complete affinity between rods and Vines that there would be so early in the year when borders are inside, and it is therefore not well to push too early. Take special care that the stems of the Vines be not exposed to frost; after heat is applied wrap hay bands round them. If you have Black Hamburgh, Madresfield Court, Gros Colmar, and Black Alicante Grapes, these, if all started at once, would ripen successively.

2543—**Sowing vegetables** (*Expert*).—To have long-pod Beans ready for exhibition in the middle of August, sow middle of April; but unless your soil is very holding, and the district moist, you may find it difficult to have good, bright green pods so late. In any case have the ground deeply worked and well manured, and sow thinly. Top the plants when well in bloom, and place a mulch of long manure about them in June. Runner Beans may be sown end of April, also thinly, Cabbage-seed early in April, Cauliflowers should be raised by sowing King, or Mammoth, under glass in March, or, failing that, then in a warm place outdoors. Parsley may be sown in April, and be well-thinned; Lettuces, both Cos and Cabbage, end of May and early in June; Peas, sown thinly in deep, holding soil, middle to end of April; Turnips end of June, of the Snowball; and Beets, whether long or round-rooted, early in April. You are, no doubt, a weekly tenant, as you bargained for your house at a weekly rental.

2544—**Starved fruit-trees** (*E. Y.*)—Your Apple, Pear, and Plum-trees have evidently become rind-bound—hence the odd appearances seen on the samples of wood sent. The swellings seem to be due to effort on the part of the sap to burst the rind here and there, and then oozing out and forming a swelling of alburnum, or bark. We think your best course would be to well fork and clean the soil about the roots of the trees, and get some manure, either Moss-litter or half-decayed straw manure, and give the roots of each tree a good dressing, removing a few inches of the soil first, then casting it over the manure after it is laid on. Good soakings of house-sewage or of soot-water, or any kind of liquid-manure would, do good. Some of the most affected parts of the branches may be cut away to induce the formation of fresh, healthy wood. The white patches on your trees were caused by American-blight. This should be kept washed out with a mixture of soft-soap, clay, paraffin, and water as fast as it appears, as it spreads rapidly.

2545—**Pruning fruit-trees** (*Carisbrooke*).—Your difficulty seems to be that because trees have been neglected they have made very strong, almost rampant growth, and you do not know which is the best course to take to get them into fruiting condition. Now were we to advise hard pruning back to their original size and form of three years ago, the result would be a fresh and almost stronger outbreak of growth next summer, that would only make matters worse. So far as the trees in the open, whether standard or bush, are concerned, give heads just a moderate thinning where dense, and if needed shorten back here and there an unduly long branch. Fork up and clean the soil about them, burning all the rubbish, and then about the roots give a heavy dressing of long manure, if you can, as soon as the work mentioned has been done. As to the wall-trees, it is absolutely needful these be brought into subjection and their original form on the wall faces by hard pruning. No doubt if you could fix wires, or wood trellis, or boards above the walls you might be able to utilise and nail or tie in some of the now useless branches. If that cannot be done, then the whole of the branches above the walls and the strong breast-growths must be cut hard back. But that will, if the roots be untouched, only induce the production of very strong growths in the summer, unless you open trenches about the roots 4 feet from the stems, and sever the large roots, both horizontal and deep running, but very carefully preserving the fibrous roots. Then level the trenches with soil and again mulch with manure for the summer. Medlars need little root-pruning, but some bear thinning. Figs need the old wood cut out to replace it with young wood, which bears the fruit.

2546—**Propagators.**—I want the following information respecting propagators, and shall be greatly obliged if you can advise me: Is there any danger to plants by using an oil-lamp to heat the water-tank? What sized lamp is required to heat a tank 2 feet by 1 foot 6 inches, and 3 inches deep? How much oil is required to burn per twenty-four hours? Would a small oil-stove be better than a lamp?—DUNMEER.

*** *Provided you do not turn the lamp wick too high or too low, and so get an offensive smell, there is no reason why oil should not be used. Quite a small lamp would heat a tank not more than 2 feet by 1½ feet and 3 inches deep. The quantity of oil consumed depends entirely upon the size of wick used. Some of our advertisers give an estimate; by looking through these you could probably judge what your own consumption would be. We should prefer a lamp to a stove for so small a propagator.*

NAMES OF PLANTS AND FRUITS.

Names of plants.—*Kimmont.*—The small specimen sent is not an Orchid; it belongs to the Bromeliaceous section of plants—probably a Tillandsia. To get it to grow well you should place it into a small pot or pan filled with crocks, and suspend it close up to the glass, in a cool, intermediate temperature, keeping it well supplied with water at all times.——*Chloe.*—Asparagus Sprengeri.——*T. G.*—Probably a variety called Mrs. C. Harman Payne, but it is not easy to say from such a late flower and not in the best condition.——*N. M.*—1, Spindle-tree (Euonymus europæus); 2, Araucaria imbricata; 3, Pellæa rotundifolia; 4, Selaginella Kraussiana; 5, Doodia caudata; 6, Selaginella Mertensi.——*F. F.*—Athyrium Filix-fœmina (Lady Fern).——*Geranium.* — Your blooms, when they reached us, were damaged beyond recognition. To name Chrysanthemums the flowers should be in good form and cut with a good piece of the stem, so that the foliage may be seen. This is very important now that so many Chrysanthemums are catalogued. The flowers should also be packed securely in a strong box, otherwise they get damaged in course of transit by post. The last bloom belongs to the Anemone section, and was all in pieces when it arrived at this office.——*A. E. D.*—No doubt about the plant; it is Helleborus fœtidus. Veratrum is another family, although Veratrum viride is called Swamp or White Hellebore.

Names of fruits.—*M. S. S.*—The name of the Pear is Verulam, which is not bad from a wall when the fruit is eaten quite ripe. But it is usually classed amongst the stewing kinds.

TO CORRESPONDENTS.

Subscriber.—You cannot do better than send to any of our leading florists or nurserymen, stating just what you want. The plants may be had at from 18s. to 30s. per dozen in variety.

Catalogues received.—Webb and Sons, Wordsley, Stourbridge.—*Spring Catalogue.*——Messrs. Dickson and Robinson, Manchester.—*Seeds.*——Messrs. Stuart and Mein Kelso, N.B.—*Amateurs' Gardening Guide.*——W. Burpee and Co., Seed Growers, Philadelphia.—*Seeds.*——G. Stuart, Chapelhill Nursery, Rothesay, N.B.—*Choice Seeds and Plants.*——Messrs. Dobbie and Co, Rothesay, N.B.—*Spring Catalogue.*——S. Dobie, Heathfield Gardens, near Chester.—*Vegetable and Flower Seeds.*

Books received.—"Cyclamens and How to Grow Them," by F. C. Edwards, Sholebroke View, Leeds. Price Fourteenpence, post free.

BIRDS.

Death of Canary (*Mrs. L.*).—The death of your very fine bird is due to acute inflammatory condition of the lungs. Inflammation of the lungs is a complaint to which cage-birds are very subject, even when treated with the greatest care and attention, and may be caused through mistaken kindness, such as in keeping them in an atmosphere too dry and warm—for instance, the upper part of a sitting-room, where gas is burned. After spending many hours in such an atmosphere it cannot be wondered at that a sudden cold current of air caused by the necessary opening of a window for ventilation should cause the bird an attack of lung complaint. The only chance of saving a bird suffering from inflammation of the lungs is to keep it in a moist atmosphere of 80 degs. to 90 degs., which must be maintained constantly night and day, but gradually lowered as the gravity of the

symptoms subsides; while five drops of tincture of aconite may be put into each ounce of the drinking water, and the patient given plain and simple diet. It is found that birds kept in rooms without artificial warmth and in outdoor aviaries are less liable to attacks of lung disease than those that are kept in living rooms.

Death of Canary *(E. G.)*.—The death of this bird appears to be due to a fit of apoplexy, there being hæmorrhage at the base of the brain. You have probably been feeding it upon food of too stimulating a nature. The mixed bird-seed sold in packets often contains a large quantity of Inga, which is most injurious, and causes the death of numberless cage-birds, giving rise, as it does, to disease of the liver and fatty degeneration of the heart. An undue proportion of Hemp-seed, and pampering with egg-food, cake, sweets, and the like, will also bring on these complaints. Had you noted its failing health, you might have afforded it relief by giving it a little fluid magnesia—a teaspoonful in two tablespoonfuls of water—and putting it upon low diet for a time. The properties of Canary-seed are to fatten and warm, and should not be exclusively used in the feeding of Canaries; but to counteract this fattening tendency other seeds should be used, such as Rape, which, while nourishing, is of a cooling nature; it should, however, be of the smaller kind and of a reddish colour. The large black Rape is injurious, especially to young birds. What Hemp-seed is used in the feeding of Canaries should also be of the smaller kind, and of a bright grey colour, and having a sweet, nutty flavour. It is in some cases well to slightly crack the Hemp-seed before supplying it to young birds.—S. S. G.

LAW.

Erection of fence on extreme boundary.—There is a Thorn-hedge and a ditch around my field, and I am about to have the hedge cut down and an iron fence put up. Can I put the fence on the brow of the ditch, as the ditch belongs to me? The brow of the ditch is 4 feet from the centre of the hedge.—A. H.

*** You must set the iron fence on your own land, and if you can prove that you have 4 feet of land on the further side of your Thorn-hedge you can place the fence 4 feet from the hedge. As a rule, the opposite bank of the ditch does not belong to the owner of the hedge, and I think you will find that the further brow of your ditch does not belong to you, but the bottom of the ditch will belong to you.

Disposition of property by tenant-in-common.—By his will my father devised a dwelling-house and some land to my brother and myself as tenants-in-common. At my brother's death he devised his share to me, subject to the payment of an annuity to another person, which annuity was to be recoverable by distress. As the annuity is nearly equal to one-half of the rent for which the property lets, I derive little benefit from my brother's devise and I refused to pay the annuity. The annuitant distrained upon the tenant, who paid out the distress and deducted the amount from the rent he paid to me. Had my brother power to dispose of his share by will? Or did his share pass to me at his death as his survivor and heir-at-law?—DOUBTFUL.

*** The property was left to you as tenants-in-common, and therefore your brother had full power to dispose of his share by his will. It would have been otherwise had the property been left to you and him as joint-tenants, for in that case the doctrine of survivorship would have prevailed, and although your brother might have disposed of his share during his life he could not have disposed of it by his will. The doctrine of survivorship is applicable in the case of joint-tenants, but it has no application in the case of tenants-in-common.—K. C. T.

Notice to quit.—On March 25th, 1896, I entered on a field of 2½ acres for occupation as a market gardener and nurseryman, and my landlady built a house upon it. The terms of the tenancy, which were embodied in a written agreement, were rent £25 a year, rates to be paid by me, and a year's notice to be given to terminate the tenancy in March of some year; but should I suffer an execution my landlady was to be at liberty to terminate the tenancy by three months' notice. No execution has been put in, and I have paid rent punctually, but my landlady wants to live in the house herself, and at Christmas, 1896, she gave me three months' notice to quit, which she afterwards withdrew, but took possession, without my permission, of 600 yards of land to make herself a garden. She has this Christmas given me three months' notice to quit. Can she compel me to quit? I pay rent quarterly, but the agreement stipulates for a year's notice. Is the agreement void because she took possession of the 600 yards of land?—J. B.

*** The agreement remains in force, and you can only be compelled to quit in March in some year at the expiration of a year's notice for that purpose. You should make a proportionate deduction from your rent in respect of the 600 yards of land taken possession of by your landlady.

BEES.

Supering frame-hive *(Apiarian)*.—As soon as the Bees begin to collect honey in quantity, and the weather is warm and settled, you may place a rack of sections upon the hive, and when the sections are about half filled with honeycomb you may raise the section-rack and place a crate of shallow frames between it and the hive. In this way you will induce the Bees to work more readily in both sections and shallow frames than they would if all were put on at the same time. If the honey-flow is good, the case of sections will quickly be completed, and probably a second batch obtained if worked between the hive and the shallow frames. On the storifying system, three storeys of sections are sometimes used at one time; but care has to be taken to decrease the pile as soon as there are signs of decline in the honey-flow; otherwise, many incomplete sections are left in hand. When difficulty is experienced in getting the Bees to commence work in sections over the hive, a good plan is to hang the sections in the hive on either side of the cluster by means of broad frames. In this position they are worked in very readily, and when the work is begun in them they can be removed with the adhering Bees and placed in racks on the hive. Other Bees are thereby induced to go up and help in the complete working out of the sections. The comb is always completed more readily on the top of the hive, although sooner started within the hive. The combination-hive is a most useful type of hive in localities where honey is abundant and in plentiful seasons, although objected to by many Bee-keepers on account of its great size. Still, it should be remembered that a large hive can always be made smaller by the use of division-boards, and in the times of honey-harvest the Bees can be forced up into the sections or shallow frames by removing some of the frames from the body of the hive, and contracting the brood-nest, by means of the division-boards, to eight frames. Being cramped for room the Bees run up into the supers. The frames in this hive, running across the entrance as they do, parallel to the front instead of at right angles to it, as in other hives, admit of the placing of frames of sections at the back of the brood-nest, the queen being kept out by means of a divider of zinc queen-excluder. As Bees store honey at the furthest point from the entrance, much section-honey can often be secured by this arrangement. Another feature of this hive is that swarming can be prevented by confining the queen to a certain number of frames by means of a zinc divider placed near the front, this, while allowing the workers to pass out and in, prevents the queen leaving the hive.—S. S. G.

Swarm-catcher *(Apiarian)*.—We have never used the invention for swarm-catching, so cannot say if it is really successful or otherwise in its working, but think you will not need one for your combination-hive, especially if you are going to manage it on the tiering-up system, as this, from allowing the Bees abundance of room, checks swarming to a great extent. If you determine to have one of these contrivances, you will do better in obtaining one of a dealer in apiarian appliances than in attemping to manufacture one yourself.

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GARDEN SUNDRIES.—Prices for cash with order: Fibre Refuse, 1s. 3d. (10 sacks, 11s. 6d.); Best Brown Fibrous Peat, 4s. 7d.; Potting Compost, 4s. 7d.; Pure Leaf Mould, 3s. 8d.; Fibrous Loam, 2s. 9d.; Silver Sand, 1s 5d. ALL IN LARGE SACKS (FREE). Bones, 10s.; Peruvian Guano, 18s. 4d. per cwt. Mats, Sticks, Labels, and ALL Requisites. Illustrated Price List free on application.—W. E. WARD & CO., 6, Wormwood-street, E.C. (Est. 1873)

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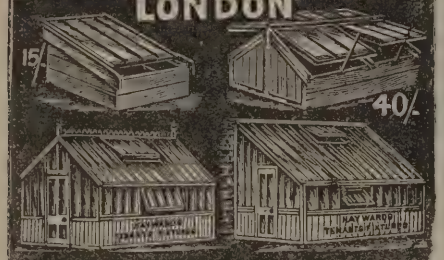

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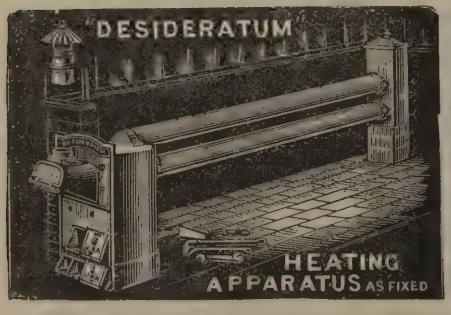

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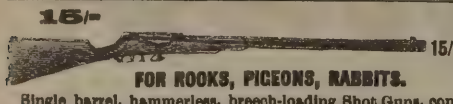

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GARDEN AND PLANT PHOTOGRAPHS, 1898.

THE EDITOR of THE GARDEN and GARDENING ILLUSTRATED announces Photographic Competition for the season of 1898.

LIST OF PRIZES.

Class 1.—COUNTRY HOUSES AND FLOWER GARDENS.—A prize of TEN GUINEAS, and a SECOND PRIZE OF FIVE GUINEAS, for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm and manor-house gardens may be included in this class.

Class 2.—SMALL GARDENS.—A prize of FIVE GUINEAS, and a SECOND PRIZE of THREE GUINEAS, for the best ten photographs of picturesque small gardens, including town and villa gardens, rectory or cottage, or any other kinds of small garden.

Class 3.—FLOWERS AND SHRUBS OF THE OPEN AIR.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, to the sender of the best series of not less than twelve photographs of the above. These may include wild plants or bushes, or any plant, flower, or shrub grown in the open air, including also half hardy plants put out for the summer, and either single specimens or groups, or the effects resulting therefrom, in beds or borders. Shoots also of rare or beautiful plants photographed in the house may be included in this class.

Class 4.—INDOOR FLOWERS AND PLANTS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, for the best series of indoor plants—greenhouse, stove plants, Orchids, or any other plant not of the open air—either single shoots, plants, or specimens, or the effects resulting from good grouping or other arrangements of such plants separately or in association with others. Ferns or groups of Ferns in houses may be included in this class.

Class 5.—PICTURESQUE GARDENS.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, for the best ten views of ferneries, rock or water gardens, old orchards, lawn trees, and climbers. This may include picturesque grouping of native plants or trees, also woodland and pleasure ground and park groups or effects.

Class 6.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF £2 10s., for the best collection of not less than twelve photographs of garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 7.—BEST VEGETABLES.—A prize of FIVE GUINEAS and a SECOND PRIZE OF TWO GUINEAS for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 8.—VASES, CUT FLOWERS, TABLE DECORATIONS, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of arrangements of flowers or plants in vases, table decorations, and cut flowers. Merit to be in graceful effect.

Class 9.—GARDEN STRUCTURES OF GOOD DESIGN.—A prize of FIVE GUINEAS for not less than twelve photographs of seats, bowers, summer-houses, loggia, pergola, stone and other seats good in form, fountains, garden houses, wrought iron garden gates of good form, bridges, boat-houses, flower-bed "baskets," garden sun-dials. This class may include any structure of garden, pleasure ground, or park use.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until November 15th, 1898.

WHAT TO AVOID.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors:—*

FIRST.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly. Platinotypes and bromide printing and red or brown-tinted photographs should not be sent. Those on albumenized paper are preferred for engraving. All photographs should be properly toned.*

SECOND.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

THIRD.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

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GARDENING ILLUSTRATED.

No. 984.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JANUARY 15, 1898

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ROSES.

SEASONABLE WORK.

Pruning under glass.

The whole of my notes upon these which appeared a few weeks back are still applicable; but we also need to complete all pruning under glass as soon as possible now. The mildness of season up to the present has caused all Roses, even in pits and unheated houses, to commence swelling their buds through early rising of sap. In the open I would not prune for some weeks yet, but under the slightest cover our Roses are already some six or eight weeks in advance of those outside. Nor is there the same risk in early pruning under glass as occurs among plants entirely exposed to outside weather. With ever so little cover we can guard against injurious checks, and especially so if we are careful to treat our plants as hardily as possible, and not cease to give a little ventilation upon all but frosty weather. It is when we hurry our Roses at first that they become dangerously advanced, and so suffer from checks to new growth while we are still liable to severe frosts. On the other hand, if left unpruned, they come on even faster; besides this, to prune when the sap is so active results in much loss of sap and a serious check to root growth. If my readers will take the trouble to examine a pot-plant while bearing new growths of from 2 inches to 4 inches at points of its shoots, they will find the roots in full vigour and activity. Examine the same plant a week or so after severe pruning, and it will be found that the tips of its roots are more or less brown and dead, undoubtedly caused by the check. Both root and top growths must be balanced, so to speak; and if we remove the top, thereby doing away with the necessity for so full a supply of sap, the roots will cease to work for a time and die at their points. You will see from this that roots will not hurry on so much if we keep the plant cool and also curtail the number of eyes that would excite them and demand many more times the same amount of sap as if limited. All must have observed that it is the top or terminal eyes of Roses and most other flowering shrubs which first break into growth. Considerable check is secured by removing these, and hence I advise early pruning.

How to prune.

This depends entirely upon what we have to prune. It is quite impossible to give exact details for each variety, and yet they need some little distinction in almost all cases. All I can do here is to give a brief outline. Let us take such climbers as Maréchal Niel, William Allen Richardson, and climbing Perle des Jardins. These merely need the extreme points of their long rods cut off, or as far down as immature wood may extend. Of course, I am now supposing that you have been careful to secure a more or less quantity of long rods during the past summer. Several querists have asked what to do with these rods, stating that they failed to flower last year, and asking if they should not cut them away as being useless. By no means do that. It is the most valuable of all Rose-wood, and never more so than upon climbers. Train each shoot to its place, whether upon a wall or the roof. If in pots, and it is intended to form a pleasing plant, either bend them over in form of an arch or else train in a spiral form around three or more stakes. If several are grown in pots, and quantity of flower only is wanted, set them side by side in a row, and train each long rod at an angle of about 45 degs., thus forming cordons when new growth starts. It sometimes happens that an old plant of these extra-vigorous growers has been rather neglected, and a lot of new wood of only a few feet in length has taken the place of long, maiden rods. In this case, thin out the weaker as far as possible, and lay in the best of the remaining wood. Yet another plan is to train the long rods up the roof or wall, and when side-flowering growths have given their crop the plant is allowed to grow at will. The following spring each of these side growths are spurred back, or, in other words, shortened in to the main rod after the manner adopted with Vines. This results in many blooms, but is by no means so certain as when new rods are obtained annually. The latter will generally produce a flower from every eye or bud throughout their entire length; whereas, under the spur system, we so often find the new growths extending several feet, and without blossoms during the whole season.

Pot plants

of ordinary or medium vigour, such as Niphetos, Catherine Mermet, and Souvenir d'un Ami simply need the weak shoots thinned out from the centre, and the stronger ones pruned back to three or four eyes. Try to keep as shapely a plant as possible without departing from these lines.

We shall probably be having a lengthy article upon outdoor pruning in a few weeks. Meantime it will be wise to delay using the knife until the end of February, even in the most favoured localities. P. U.

ROSES FROM CUTTINGS.

(In reply to "A. L.," Bideford.)

Our correspondent placed some Rose slips in small pots during the third week of December last, and stood them in a cold-frame facing north-east. Now, this is not very likely to meet with success; for, although we have had a mild winter so far, the cuttings will be too cold to form sufficient callus unless the season still remains unseasonably warm and mild. September or early October are the best times. As we have had more than one query of late respecting the rooting of Rose-cuttings, it would seem that several readers have not noted our two articles which appeared last autumn—the most suitable time for this operation. We therefore give a brief outline of the routine once more. There are two methods of about equal merit, viz.—

Cuttings from ripened wood, obtained early in the autumn, and just before the plants go to rest. These should be made from growth of the same season; the base cut off clean and smooth with a sharp knife, just below a leaf or joint. A warm outside border will do in this case, but a cool-frame is an advantage. Always use a light and sandy loam, strictly avoiding strong or fresh manures. Set the cuttings in firmly, and quite three-fourths of their length. Do not turn out the lower eyes, as is the case with Gooseberry and Currant cuttings; also when rooting Brier and other stocks to work Roses upon. In our present case, the lower eyes will be invaluable for further growth from the base. After a frost go over the cuttings and press each one down to the bottom of the hole once more. It is surprising how much a frost will often lift a cutting, and if the base does not touch the soil there is great doubt about its rooting. Cover over with a little rough litter during severe weather, removing this early in the spring, treading up the cuttings once more, and then passing the hoe between them. This little attention often means the difference between a good or bad result. Keep the ground tilled during summer, protect slightly the following winter, and transplant in February or March, this time giving them a richer soil, and placing them where they are to remain.

Some wait until pruning time in spring, but few meet with success unless the cuttings are inserted during the autumn months.

Cuttings of young wood may be rooted during spring or summer. In this case choose short side growths that have either failed to produce a flower or have had the bloom cut from them. In either case the growth will be about half-ripened. If it can be taken with a small "heel" of old wood so much the better, as we thus form a base of small eyes that will develop into valuable suckers. Remove the lower leaf only, and insert in pots of sandy loam, well drained. Give a thorough watering and stand in a box or propagating-case. The object is to keep them close, free from direct sunshine, and in a temperature of 50 degs. to 60 degs. If kept close they will not dry so rapidly. Upon the floor of a house or upon any border or bench not directly over the pipes are good positions. When rooted give air gradually, and after a few weeks pot off into a little richer soil, again keeping them close until recovered. After this the ordinary routine of culture may be followed, or the plants may be planted out in the usual way.

It is most important not to attempt any but free growers upon their own roots, such, for example, as Marie Van Houtte, Gloire de Dijon, Mme. Lambard, General Jacqueminot, and Duke of Edinburgh, to name a few well-known varieties. Weak growers are a long time before making a fair-sized plant for the variety. P.

Tea Roses in pots.—I want to grow Tea Roses in pots in my small greenhouse, and as you are always so willing to give advice to amateurs, I shall feel greatly obliged if you will kindly give me the names of six, with cultural directions, temperature required, and when blooms may be expected.—Reader of Gardening.

*** You will find the following six sorts suit your requirement: Niphetos, Maréchal Niel, Souvenir d'un Ami, W. A. Richardson, Reine Marie Henriette, and The Bride. Roses that

are grown for pot culture under glass should have been exposed outdoors from July until the autumn is well advanced—say October—and without this preliminary treatment it is useless to expect good results. Start the plants steadily and carefully into growth, maintaining a temperature of about 45 degs. until the buds are seen to be developing, when this may be increased by 5 degs., and again a little later by 5 degs. more. A still higher temperature, not over much, may be maintained when the bloom-bud is making its appearance. A slightly humid condition of the atmosphere is important to successfully produce a crop of flowers, so that the genial weather of spring-time must be as nearly as possible observed. Keep a sharp look-out for green-fly, and as soon as this is apparent fumigate with Tobacco-paper, but only a weak dose—say half that usually observed with most plants, but of rather longer duration than usual. In this way harm to the foliage and buds may be avoided. On the morning succeeding each treatment syringe the plants thoroughly, mixing a small quantity of an approved insecticide with the water. Mildew, too, should be suppressed. Sulphur is a cheap and effectual remedy, the parts affected being dusted. As the flower-buds form commence with a weak solution of manure-water, repeating this at intervals of ten days or a fortnight with increasing strength, and in variety. Change of diet is very beneficial. Carefully ventilate at all times, more particularly so during the development of the flower-buds, taking pains to avoid draught of all kinds, and which may easily be managed in a span-roof house. Always use water that has stood in the greenhouse for some hours, as a serious check will surely follow the use of water colder than the temperature of the greenhouse. Bloom may be looked for from late in March until the end of May, according to temperature and earliness of the season.

Marechal Niel in greenhouse.—In my cold greenhouse I have a Maréchal Niel Rose which I pruned by advice after it had flowered in the spring. It has developed some weak-looking shoots from all points along the stout rods, which do not look as if they would flower. A gardener recommends me to cut it back presently close to the rods, so that it may make fresh shoots for flowering later on, but I am in doubt. What do you recommend?—W. P.

*** We would not prune the Rose now, after having done so last spring. Wait for the few blossoms which may come, and then cut back closely. Your plant is not doing well to be of such poor growth. May it not be suffering from canker just below the surface-soil?

Grafting Roses *(Graft).*—We think it would be better for you to procure our issue for February 13, 1897. There is an illustrated article upon Rose-grafting in that date. Heat from manure is very suitable, so long as not too powerful at first. It does not much matter if the stock is a little larger than the graft, but uniform sizes make a better junction. Be sure not to use scions that were exposed to the late frost. The article we refer you to gives full instructions.

Rose Comte Raimbaud (H.P.).—Amongst those who do not exhibit, this Rose does not appear to be very much known, and yet it is one of the most reliable and perfect-shaped crimson Roses we possess. With exhibitors it is very popular, and is found in nearly every box of any merit that is staged. It somewhat resembles Mme. Victor Verdier in habit, being vigorous, without coarseness of growth.

Underplanting Pæonies.—In your issue of December 25, p. 620, there is an article under the above heading. In it the writer says that the Pæony foliage does not show colour when Narcissus Sir Watkin is in bloom. My experience is different. I have these late-flowering Pæonies planted among N. Sir Watkin and Horsfieldi, and I think the colouring of the Pæonies is richest when the Daffodils are at their best. I enclose a photo of a part of my border, which shows the Pæonies standing darkly above the Daffodils.—GEO. BLACK, Gardener, *Kinblethmont, Arbroath, N.B.*

*** We shall reproduce the excellent photograph sent with this note.

Primroses flowering in December.—I have had Yellow Primroses blooming in sheltered places in my garden since December 20th. Is this a very unusual thing? I generally have them by January 7th or 8th, but never before so early as Dec. 20th.—J. T. BIRD, *Curragh Camp, Co. Kildare.*

GARDEN WORK*

Conservatory.

Clematis indivisa lobata is one of the prettiest conservatory climbers now coming into flower. Will grow and flower freely in a pot, and is suitable for either a large or small house. There will be plenty of Dutch bulbs coming into flower now. Early potted Daffodils will be in flower now with very moderate forcing. The great thing is to pot them early—as soon as the bulbs come to hand in August. Groups of Freesias are very pretty, and the flowers are fragrant. Specimens of Deutsche Perle Azaleas and Rhododendron Cunninghami come into flower early in a warm greenhouse temperature. Among hard-wooded plants Acacia Drummondi, Chorozemas in variety, Eriostemon in variety, are worth attention for early flowering. Those who want to know more about hard-wooded plants might run down to Kew and see what are in bloom in the temperate and other houses. The plants named above, and many others from Australia and the Cape, used to be common in every conservatory, but have disappeared in many places now. The Diosmas have fragrant foliage, and small, neat flowers, very useful for button-hole flowers. If green-fly appears on Roses dust a little Tobacco-powder over them. A little attention in this way when the flies first appear will save much trouble and expense later. This is a good time to prepare beds for such useful climbers as Lapagerias white and red. Put in 9 inches of broken bricks for drainage, and then fill in with rough fibry peat, with some sand and charcoal to keep it open. In making positions for Tea and Noisette Roses, good loam is essential, and mix with it one-fourth of good old cow-manure and some charred refuse from the clearing up of the rubbish-heap. This is very good for border making when passed through a sieve to take out stones, etc. Night temperature about 50 degs. Ventilate freely when the weather is suitable. Use the sponge to keep large-leaved plants free from dust. Do all the watering early in the morning.

Forcing House.

There will not be much difficulty now in getting well-ripened, established plants to start into growth. Lily of the Valley which have been rested by exposure will start immediately in a brisk bottom-heat. If forced in pots, cover at first with an inverted pot; if the crowns are planted in a bed cover with a little Moss, the covering to be removed when the flower-spikes are coming up. Spiræas want abundance of water at the root. Deutzias force easily if established, but recently-potted plants, if exposed to much heat, hardly pay for the trouble, as the flowers are so poor. Prunus triloba is a good forcing shrub. Laburnums and Thorns will also force fairly well, but should not have a very high temperature. Standard Roses are not much grown in pots, but good bushy heads on 3-feet or 4-feet stems are very useful for mixing with other plants in the conservatory. Good standard Teas and Noisettes are very useful, and they force well as standards. They will bear a temperature of 60 degs. at night now, though the flowers will be finer and sweeter with a few degrees less heat. Cuttings of many things will strike now, and seeds of such things as Cucumbers, Tomatoes, Melons, Begonias, etc., may be sown at any time now.

Cucumbers.

This is a good time to plant a house for bearing from Easter onwards. Cucumbers are always in demand at Easter, and must be had. I think too much importance is sometimes attached to bottom-heat. I have known cases where they had too much bottom-heat, and when the pipes enter the bed directly from the boiler it is quite possible the roots may have too much warmth, unless a good thickness of manure is laid over the pipes to help to moderate and add moisture to the heat. We have one house usually planted about the beginning of February, and the only bottom-heat is a ridge of warm manure along each side of the house, the temperature from which, after the first fortnight, rarely exceeds 75 degs., and the plants always do well. Plants in bearing should not be overcropped, if they are required to bear some time longer; but young plants do so much better than old ones. Where there are several houses, the best way is to keep on planting and clear out old plants as soon as they show signs of deterioration.

Pines.

If the plants intended for fruiting this summer are backward in showing fruit a check may be given by lifting the pots out of the plunging-bed and keeping them drier and lowering the night temperature a few degrees for a time—just long enough to give a slight check. When the temperature is raised again they will generally start. Pines in flower must not be syringed. Suckers may be taken off old stools at any time. If potted and plunged in a brisk bottom-heat they will soon make roots. Be careful with the watering-pot now; too much water will make the soil sour, and the leaves will lose colour.

Window Gardening.

Bulbs will be a principal feature now. Crocuses require sunshine to open their blossoms, but Snowdrops, Daffodils, and early-flowering Anemones are charming, and everybody with a garden may, if they like, lift patches of bulbs from the borders and plant them out again when the flowering is over. White Pinks and Forget-me-nots flower beautifully in pots. Keep Cacti quite dry for several weeks yet.

Outdoor Garden.

If tennis-lawns require repairing, the work should have attention now. The new turf should be thick and close. Weak, thin turf will wear out in no time when play begins. Rich top-dressings may be applied now. Use the roller freely from this onwards when the lawn is soft and damp. It is impossible to have a good lawn without rolling between Christmas and April. Take out all weeds. Lawn-sand is good, but must be used in dry weather. This is a good season, when other things are not pressing so much, to make new ferneries or rockeries for alpines. The difficulty with many of us is to get suitable stones for the purpose; but very pretty Fern and alpine mounds may be made without stones. Dig out winding paths, and throw the earth into mounds of various heights. Plant a few suitable shrubs to give shade where required. If the site is large enough, a Cedar or two may be planted on the summit of some of the knolls, and there are dwarf Firs which may be employed, and in planting later on put in good-sized patches of the most effective things, making the soil suitable for anything special; but good loam and leaf-mould will do for most things. Plants which love shade can be planted on the shady side of the mounds.

Fruit Garden.

Look out for suitable wood for grafts, and lay them under a north wall. Raspberries are surface-rooting, and the roots should not be dug over with the spade. Loosen up the surface with the fork after the canes are shortened and trained. Mulch with good manure early in the spring before the roots suffer from drought. Strawberries are hardy, and should not altogether be covered with manure when the top-dressing is applied. If there are old Apple-trees troubled with American-blight, the best course is to grub them up and change the soil before planting young trees, as the insects will descend to the roots in winter. This is a destructive pest in suburban gardens, and difficult to get rid of, as they will travel short distances. Court Pendu Plat is a good late dessert Apple if rightly kept; but it is apt to shrivel in a dry room, but keeps well in sand, packed in boxes or barrels. Winter Pears often want warming up to bring up the flavour after Christmas. Heat improves such kinds as Ne Plus Meuris, Beurré Rance, and others, which, without warmth to finish them, are often poor in flavour. Orchard-trees should be thinned, if necessary. It is best to give a look round every winter to remove crossed branches and let in light.

Vegetable Garden.

If not already done, get a rough plan made of the kitchen garden for the convenience of arranging the cropping. Make out seed-list and send it to the seedsman early, so as to get seeds soon. Though the main crops of anything will not be got in yet, small sowings of early things should be made from time to time on the early border and on hot-beds under glass. French Beans should be planted in pots in succession as required. Cauliflowers sown in heat. Paris Market Lettuce is a good forcing variety, and should be sown thinly under glass on a bed of leaves. Sow a pinch of White Celery to raise plants for flavouring purposes. If Green Basil is required early, sow a few seeds in a frame heat, and prick off when ready. Make hot-beds for Asparagus, Horn Carrots, Potatoes, etc. If early Cucumbers are grown on hot-beds, a bed for raising the plants may soon be made, and this will also come in useful for raising other seedlings, such as Begonias, and striking cuttings. Mint and Tarragon should be coming on now in heat somewhere. Chervil, also, is in demand for flavouring purposes, and if there is likely to be any scarcity a few seeds may be sown in heat. Peas and Beans of early kinds may be planted on a warm border, and, if necessary, Peas may be started under glass and hardened, and, when the weather is suitable in March, planted out. Plant more Seakale and Rhubarb in Mushroom-house or elsewhere where the conditions are suitable. Get on with the digging and trenching. E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 10th.—Made a new plantation of Horse-radish. Planted old Ashleaf Potatoes on hot-bed. The tubers had previously been started in warm-house. Sowed early Peas in pots for planting out later when hardened off. We always treat a few Peas in this way, to be prepared for failures outside. Planted Long Pod Beans in boxes for transplanting. Transplanting seems to improve Beans—makes them branch out more. Put in more Chrysanthemum-cuttings. This work goes on from time to time as fast as good cuttings of the kinds we require are ready.

January 11th.—Sowed seeds of Begonias, Grevilleas, and Cyperus alternifolius in heat. Finished pruning late Vines, the Grapes having been previously cut and bottled. Shifted on young Tomatoes to be ready for planting in light, span-roofed house that will be shortly ready for them. Stopped and tied Cucumbers. Night temperature now 65 degs. to 68 degs. We do not ventilate. Moved various plants to forcing-house. We have now plenty of Daffodils in bloom in 5-inch pots. The old Double Yellow comes in first, followed by princeps, Trumpet, major, and others.

January 12th.—Took up all Seakale intended for forcing, and laid in a cool border on the north side of a wall. Relays of roots will be taken in as required. Gave liquid-manure to Mushroom-beds in bearing. Manure for new Mushroom-beds is always more or less in a state of preparation in an open shed. Used the camel's-hair brush to Strawberries in bloom in warm-house. This is necessary to make sure of a crop in a warm-house early in the season. Sowed Cauliflowers and Cabbage Lettuces in heat.

January 13th.—Nailed Peaches and Apricots on south and east walls. Collected grafts of Apples and Pears, and laid in on north side of wall. Planted several groups of China Roses in variety round margin of shrubbery. Stirred surface among early masses of spring flowers. Moved a lot of Honesty (Lunaria biennis), common Evening Primroses (Œnothera biennis), and Foxgloves, to form groups on bank among shrubs.

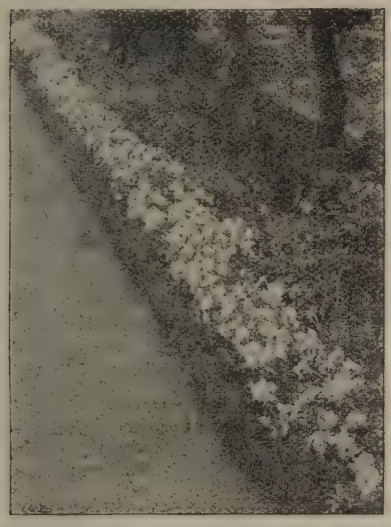
January 14th.—Potted off autumn-struck Pelargonium-cuttings, including a lot of good Zonals, intended for flowering in pots. Cut down a lot of Double Zonal Pelargoniums, and put in cuttings. Put in a lot of cuttings of Dracænas and India-rubber plants. These are struck in a close warm-frame or propagating-house in Cocoa-nut-fibre, and, when rooted, potted up. Sowed Radishes on warm south border, and covered with long straw. Planted out Tripoli Onions.

January 15th.—Rearranged conservatory. Moved a lot of Chrysanthemums to make room for White Azalea and Rhododendron Cunninghami coming into bloom. Cinerarias in 6-inch pots are now coming into bloom. Vapourised forcing-house to kill flies. Sowed more Melon-seeds. Moved more Strawberries into heat. Strawberries and Peaches in bloom are looked over with the brush every day to fertilise blossoms. Trained Morello Cherries on north wall.

OUTDOOR PLANTS.

TUFTED PANSIES AS EDGINGS.

Few subjects in the hardy flower border can compare with the Tufted Pansies, more particularly so as plants suitable for edging. There are now many beautiful kinds to select from, each having some distinctive claim, either because of their freedom of flowering, dwarf, tufted habit, or long and straggling form of



Tufted Pansy border and Box-edging. From a photograph by Mrs. Martin, Gravelly-hill, Birmingham.

growth. Then, too, there are the miniature sorts—a small class, yet including among them many pretty varieties for the purpose under notice. To see a long border in full blossom is to see the Tufted Pansy at its best.

Dwarf compact forms for edging.

One of the accompanying illustrations portrays the fine effect which the Tufted form of the plant produces. Of this kind of plant there are some excellent sorts, and those best suited to the position are undoubtedly the selfs. In these there are few with fleeting colours, but if the fancy, edged, or margined sorts be used for the same purpose, the effect would be far less pretty. The hot weather of the summer quite alters the character of these fancy and margined flowers, the colours often becoming so very pale and washy as to be almost unrecognisable, consequently they lose their effect. The best selfs for compact edgings are white: Violetta (minature), Niphetos, Ethel Hancock, Mrs. Scott, and Pencartland. Yellow: Ardwell Gem, Bullion, Princess Louise, and Lemon Queen. Cream: Devonshire Cream, Christiana, and Nellie. Blue: Blue Gown, Britannia, and Waterloo. Rosea pallida, pale rosy-lilac; Florizel, blush-lilac; William Niel, rose-lilac; and Acme, bright purple-crimson, will each give a distinct shade of colouring.

Varieties of taller growth.

There is an increasing demand for plants with long, spreading, and tall growth, not for planting alone, but for associating with other things. Some good results in the arrangement of the hardy flower border have been made by their use, and for such a purpose they are well adapted. Some of the plants in the border may be of a spare style of growth, and, in conjunction with such plants, the Tufted Pansy will associate well. As a groundwork to a large bed of Carnations they make a capital effect all through the summer, maintaining a bright display. With less hardy plants, such as Fuchsias, etc, they may be used with advantage, too. Good sorts of this description are Gigantea, White Flag, and Countess of Wharncliffe, white; of yellows choose Lord Salisbury, Lord Elcho, and A. J. Rowberry. The best for this purpose is undoubtedly Pembroke, a lovely rayless yellow. Archie Grant and Max Kolb are good blues, whilst of fancy varieties select Countess of Kintore, Iona, Mrs. H Bellamy, and Princess Beatrice; and of edged flowers, Butterfly, Blue Cloud, and Duchess of Fife.

ORCHIDS.

TREATMENT OF ORCHIDS.

The aim of the grower must now be to keep all plants that usually rest at this season quite dormant, and these, of course, comprise a large number of species. In the resting season, as with the growing season, a deal of difference exists between the treatment of various kinds. Phalænopsids have by now quite finished growing, and must be kept as quiet as possible. Any plants carrying their flowers or forming scapes will need more water than others having none. Some plants may still be showing a little activity at the root, and these, too, must be humoured a little. All that is required for the others is an atmosphere sufficiently moist to prevent too rapid evaporation from the foliage and enough water at the root to keep the leaves plump. Not a drop of water should touch the leaves now. Plants growing in suspended baskets are, of course, not very likely to be wetted overhead, but those on the stage may be when damping down. If they can be raised a little higher, this will obviate the danger to a certain extent and the plants will benefit by the increased light. Never allow the temperature to drop below 60 degs. where the Moth Orchids are grown if this can be avoided, or probably some of the leaves will become loosened at the axils, and all such will drop in the spring. If the Sphagnum about them has grown too luxuriantly during the summer months and appears to hold more moisture than is advisable, this must be trimmed back a little. The same may be said of some other Orchids, such as the heat-loving Oncidiums, as O. Papilio, O. Krameri-anum, O. Jonesianum, Scuticaria Steeli, or any others of a true epiphytal nature. The small-growing Angræcums are somewhat similar to Phalænopsids in their requirements, but A. eburneum and A. virens are just breaking into flower and must be kept moist. Large pieces of the former are, in fact, quite as active at the roots as they have been at any time through the summer and are watered almost as frequently. Notwithstanding the brilliant season, Catasetums have not done well with me, several plants having smaller pseudo-bulbs than last year, and in no case is much improvement apparent. These may be kept quite dry now, a decided period of dry rest being necessary. The same with Thunias and Calanthes. These may be potted in order to save time later in the season, but they must be kept warm and dry all the same.

Cœlogyne cristata has finished up well and is showing for bloom. Here a little moisture is obviously needed, no Orchid more rapidly showing the result of too dry treatment than this. The last formed pseudo-bulbs should never shrivel; all the nutriment contained in them is required, and if any of it is allowed to waste, the result will soon be apparent in poor flowers and weak growths. There are other species in the genus that require, perhaps, less water, especially in spring, when the young growth is just starting, but in no case must the pseudo-bulbs shrivel. Epidendrum bicornutum is a difficult subject to deal with at this time of year. Moisture it must have, and in considerable quantity, nor must it be kept cool, yet it is necessary to its well-being that the growths remain dormant. Each grower must, to a certain extent, take his own course with plants of this description, but I may say in regard to it that moist atmospheric conditions with comparatively dry roots are more to its taste than the opposite, and less likely to encourage thrips, its inveterate enemy. Miltonia vexillaria is now in active growth, and the temperature for this Orchid must not fall much below 55 degs. on the coolest nights. It is important that it receive no check from any cause, whether it is dryness of the atmosphere, draughts, or the attacks of insects. Keep the glass clear above, and if any plants are in a doubtful condition at the roots, repot into sweet open material without delay.

Among Cattleyas, the early-flowering section, as represented by C. Percivaliana and C. Trianæ, will need more moisture than the summer-flowering kinds, which are nearly all at rest. Lælia anceps has been fine this season and many more flowers have yet to open. L. superbiens is pushing up its immense spikes and must be kept moist, the same applying to sheathing plants of L. purpurata and L. grandis tenebrosa and others. Maxillarias and Lycastes are pushing up flower-spikes strongly, and the quietest time for these useful plants may now be said to have passed. In the cool-house Disa grandiflora is growing away rapidly and must be kept moist at the root. It may also be syringed overhead with chilled water daily, and all the air possible allowed by day and on warm nights when the atmosphere is moist and mild. What a grand grower D. Veitchi is, and also easy of propagation. It is one of the very best of its class, and as it is fairly cheap, this pretty hybrid may be tried even where D. grandiflora fails. A surfacing of Sphagnum Moss over the compost helps to keep the roots moist, but care is necessary that no slugs or other insects are introduced therewith. Any of the Pleiones that have finished flowering, such as P. Lagenaria or P. maculata, should be repotted without delay, for if they commence to make new roots it is difficult to avoid injury to these in shaking out and replanting. Fix them firmly in their new compost and give little or no water until they commence rooting. Continue to watch for the spikes of the various Odontoglots now pushing up and keep them well in sight, wrapping a little cotton wool around the base of each if slugs are troublesome. A little warmth must be kept on the pipes, this allowing the house to be freely ventilated in suitable weather, and all cleaning operations must be pushed on rapidly.

Season for certain Orchids to flower *(E. A. P.)*.—Sophronites grandiflora and Cypripedium villosum bloom in January; Cœlogyne cristata (Chatsworth variety) in February; Dendrobium Findleyanum, D. nobile, Cymbidium eburneum, Acineta Barkeri in March. Where Odontoglossum crispum is grown in quantity flowers may be had at all seasons, but the chief blooming period is during the spring months. Odontoglossum citrosmum, Maxillaria Harrisonæ, Dendrobium Jamesianum, D. infundibulum, flower in May; Epidendrum fragrans in September; Oncidium longipes (Janieriense) in October; Lælia Dayana, Pilumna fragrans, Vanda Amesiana, V. Kimballiana, Maxillaria marginata, and Cypripedium Charlesworthi, in

Pansies of looser growth, with Box-edging. From a photograph by Mrs. Martin.

November; Cypripedium insigne, C. venustum, Lælia anceps, and L. autumnalis, in December. The genus "Cypripedium" is that which is commonly called the Lady-slipper Orchid.

Removing Royal Fern *(Royal)*.—No time is more suitable for the work than in spring, when growth is commencing.

INDOOR PLANTS.

RHODODENDRON VEITCHIANUM.

WHITE-FLOWERED Rhododendrons, both original species and hybrids raised therefrom, are very numerous, and some of them greatly resemble each other, but R. Veitchianum is not likely to be confounded with any of the others. This Rhododendron is a native of Moulmein, from whence it was introduced by the firm whose name it bears, and was first flowered by them about forty years ago. R. Veitchianum is very apt to be thin and straggling during its earlier stages, but as it grows up these undesirable features gradually disappear, so that when large and in a healthy condition it forms a handsome shrub, whose leaves are dark green on the upper surface and glaucous beneath. The flowers are borne, as a rule, three or four together in a terminal cluster. They are large, each 4 inches

Rhododendron Veitchianum lævigatum.

or more across, and, with the exception of a patch of pale yellow on the upper part of the interior of the bloom, are altogether pure white. A particularly noticeable feature, in which this Rhododendron differs from any other, is that the edges of the petals are very much crisped. This character varies greatly in different individuals when they are raised in quantity from seed, which ripens readily even on small plants. While nearly all the plants of R. Veitchianum have this crisped character, there is one form in which it is far less noticeable than in any of the others. This is the variety lævigatum, which is herewith illustrated, its freedom of blooming being well shown. The plant is more branching and compact in growth than is usually to be found in small specimens of R. Veitchianum, but this is not a constant feature of lævigatum, as some individuals are when young just as straggling as those of the type. Veitch's Rhododendron succeeds best in a slightly higher temperature than that required by the bulk of the Himalayan species. It is not a particularly vigorous rooting kind, and large specimens can be kept in health for years in comparatively small pots or tubs.

As might be expected in the case of such a fine free-flowering species, R. Veitchianum has been employed by the hybridist in the production of new varieties, but in this respect it has not played so conspicuous a part as some of the others. It was a happy thought to mate this with the little Himalayan R. ciliatum, so well known for its compact habit and great profusion of bloom. The result of this union is to be found in the variety exoniense, a compact, freely-branched bush, with foliage a good deal like that of Veitchianum, but smaller. The young leaves are, however, slightly hairy. The flowers of this are about 3 inches in diameter and white, faintly tinged on the exterior with pink. This variety was raised by Mr. Robert Veitch, of Exeter, and about fifteen years ago it attracted a good deal of attention, while it is now grown in most collections of this class of plants. A second variety—Forsterianum—impressed me greatly the first time I saw it in bloom, the striking feature being the large size of its blossoms. This was raised by M. Otto Forster in Austria, the parents being R. Veitchianum and R. Edgeworthi. The plant is of rather tall growth, but the blossoms are magnificent, the colour being pure white, except a small lemon blotch in the centre, while they are also deliciously scented, as in all other varieties claiming parentage from R. Edgeworthi. A few years ago I raised a quantity of R. Veitchianum from seed produced only by the very crisped forms, but found that the progeny showed a marked difference in this respect, a few having the edges of the petals almost smooth, and while most of them were moderately crisped, there were not many in which that character was as pronounced as in the case of the seed-bearing plants. H.

SUMMER AT MID-WINTER.

I HAVE advocated more than once in these columns the culture of greenhouse flowers specially suited for winter blooming, but as it is a subject that admits of repetition, I venture again to address the readers of GARDENING.

These notes are intended for those amateurs who possess a certain amount of outdoor garden which supplies flowers from March to October, but who yet have only a limited accommodation for greenhouse flowers. People who own two or three glasshouses and a stove will have no need of my advice, for they can grow a far larger variety than I can do with my one house, measuring 15 feet by 10 feet, and my half-dozen or more cold-frames. But to those whose circumstances are similar to my own I would counsel the culture of strictly winter-blooming plants, and those mainly of annual duration.

The principal object of gardening, in my opinion, is to obtain flowers enough to make our living-rooms gay at all seasons of the year. In spring, summer, and autumn those who own a garden should never lack a profusion of blooms for cutting, and it is therefore obvious that the months to which we should devote our attention under glass range only from October to March; and it is to enforce this opinion that these lines are written. Valuable as are such plants as Fancy Pelargoniums, Deutzias, Bouvardias, Fuchsias, Tree-Carnations, Spiræas, Azaleas, etc., they are not for us. Their bloom comes too late under the conditions we can offer. As the month of January is the one which is ordinarily barest of flowers, we should direct our energies to that month, and choose plants that can be persuaded to bloom in or near it. Some will open in December, some in February, but all at a time which makes them precious. But to begin with October. From the middle of this month onward Chrysanthemums are the main flowers, and I have room for about fifty plants in my little greenhouse. But there are other things also blooming: Zonal Pelargoniums, a few Gloxinias, some Begonias, Achimenes, Petunias, Stocks, etc., not one of which occupied an inch of precious room on the greenhouse stages last winter. If they had they would not be here. The Begonias and other tuberous-rooted things in their pots were on their sides under the stage; the Petunias were sown in the spring, and so were the Stocks, and half-a-dozen other things. Margaret Carnations have been recently potted up to continue their blooming under glass; and what with many outdoor flowers which still remain, in addition to all these, I have more than enough to make the drawing-room bright So much for October.

November sees many of those already mentioned for last month, with others in addition. Roman Hyacinths are flowering, Christmas Roses are well in, there are heaps of Violets, both from frames and in the open—Marie Louise, Count Brazza's White, and that glorious single the Princess of Wales. We are still helped by Roses, Anemones, and other things from outdoors, and the flower famine is not yet.

Nor is it to be feared in December, for then Cyclamens begin to show bloom; the bulk of the Zonal Pelargoniums (which have been propagated solely with a view to winter blooming) give two or three vasefuls a week of their gay blossoms. Cinerarias are well out by Christmas, and so are the first Freesias, Primulas, Narcissus (paper-white and double Roman), Duc van Thol Tulips, Calla Lilies, and a pretty little Fuchsia-like Cactus, which has been permitted to survive its relatives because of its winter-blooming habit. At Christmas, in fact, I can muster well over a score of pots and vases of growing and cut flowers, all good of their kind, and plenty of them.

All these or others like them will still be flowering in January, and Christmas Roses still abound. Of Violets a few are forthcoming; the Primulas, Pelargoniums, and Cinerarias being arranged for succession will give us all we want of them; and before the month comes to an end the glorious triumph of winter gardening is upon us in the hosts of bulbs which are coaxed to come before their right time, and to succeed each other for the next two months. The single sweet Jonquils are boxed closely together for cutting; so are Narcissus scoticus, N. poeticus ornatus, N. Figaro, N. Stella, N. Orange Phœnix, and others that may have been forthcoming at potting time, and it should be noticed that most of them

are now exceedingly cheap to buy. Tulips of many sorts, and Hyacinths—*not* named varieties—bought by colour are also there, and for ordinary greenhouse purposes the cheapest Hyacinths are as good as the most expensive. Crocuses are coming on in pans, and so are Scillas and Chionodoxas, with mossy Saxifrage pricked in over the bulbs to hide their sheaths. Most of the other bulbs will be taken from the soil just as they come into bloom, their roots washed, and the growing plants transferred in masses to large ornamental pots, in which they will be planted thickly in wet sand, to make a good show indoors. So things will go on until spring gives us again its treasures of the open ground.

Thus, to have a variety and succession of flowers for cutting in the winter months from a small greenhouse, we must mainly rely, as I have pointed out, on plants of annual duration and of soft-wooded nature. There is not room for everything, and those which give the best results should alone be grown. Hard-wooded things which bloom at the wrong time, and increase in size every year until they end by taking far more than their right share of room, must be discarded if, as I say, the results are to be good in every way. It may seem a grievous thing to part with them, and to give ourselves the additional labour exacted by annuals, but unless economy of space is no object it must be done if we are to have summer at mid-winter. I have grown both hard and soft-wooded plants—perennial and annual—and in a small greenhouse I am convinced of the far greater value of the latter over the former. It is no exaggeration to say that I find it as easy to fill my rooms with flowers in January as in June, and what could one wish for more? If any readers of Gardening should care for cultural directions for plants suitable for winter blooming I should be happy to tell them what I know on the subject. It is not a great deal, but it suffices to give me more flowers almost than I require.

Lady Amateur, *Berks.*

THE KITCHEN GARDEN.

GOOD EARLY POTATOES.

It often happens that amateurs are in difficulties about selecting the best Potatoes, and the trouble is not lessened by perusal of catalogues, owing to their long lists, and all of them noted for quality and crop. My note will refer to early varieties. The kind illustrated, Snowdrop, is certainly one of the best all-round Potatoes grown. It is an early White Kidney of sterling merit, both as to quality and productiveness. It can be lifted for use when quite young. This makes it more valuable. Of course, Snowdrop is not quite so early as some, being a larger tuber; but, on the other hand, it is a much heavier cropper than the Ashleaf varieties, and keeps well, though early, and this latter should cause amateurs to grow it for early supplies. Many who study quality in Potatoes do not care for the Ashleaf section, as they have a close yellow flesh in a young state; and it is here that Snowdrop is appreciated, as it is quite white and equal in shape to the best Ashleaf. It has a medium haulm, and is good in most soils; indeed, this latter quality makes it doubly valuable.

Another Potato not unlike Snowdrop, as regards earliness, crop, and table quality, is a newer variety called English Beauty. This is an early variety of great merit and specially good for amateurs, as it crops well and is so early that it may be lifted early in June, and the tubers are large and boil floury. This latter is a cross between Myatt's Prolific, one of the best Ashleaf varieties both for crop and flavour, and Beauty of Hebron, an American variety, a great cropper, tubers of good shape and quality, thus one of the best for light soils.

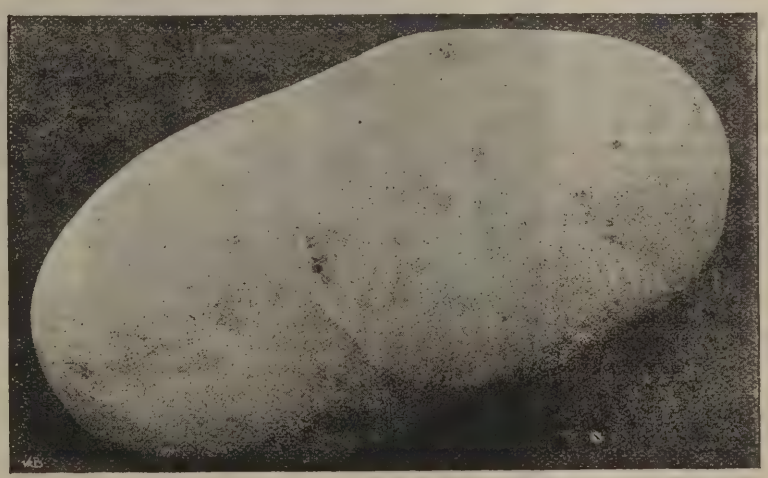
I am aware some of my readers may object to grow any of the American kinds, owing to their becoming diseased, but these varieties should be lifted early and never planted in heavy clay or wet land. They do splendidly in a dry, hot summer, such as last season, and their weight of crop and quality also make them valuable. Indeed, for sale few kinds are better, as they give weight and quality combined. Early Puritan is a grand cropper, white flesh. The early tubers lift wonderfully well, keeping well after lifting—a great gain, indeed, in well-drained soils. I class Early Puritan as the most profitable tuber for early work. There are others from the same source, named Prosperous, which has done well this year, but it is full early to advise upon its culture, as one year's trial is not sufficient. This is a vigorous grower and a heavy cropper.

The well-known American Rose is now eclipsed by Puritan and Beauty of Hebron. Both are superior, and not so subject to disease. Anyone who does not like these varieties may grow Snowdrop or English Beauty, while both crop as heavily as these latter kinds. A list of good Potatoes for early use would be incomplete without reference to Early Laxton, a beautiful early tuber, earlier than Myatt's, and of equal quality. It is a splendid tuber, raised by the late Mr. Laxton, of Bedford, who did so much to improve vegetables and fruit. This is probably one of the earliest Potatoes grown, with very dwarf haulm. It is an excellent variety for small gardens, as it can be planted close, and forces well under glass.

Sharpe's Victor is a specially good early Potato. It does not crop so heavily as the American kinds, but is remarkably early. This variety when planted in March, or say February, in a sheltered border, may be lifted in May. I have not described any of the Ashleaf varieties other than Myatt's, one of the oldest. These I must briefly refer to later, and in a note on the best kinds no one can omit the round varieties. Ringleader is a grand cropper, with white flesh, and, in my opinion, far superior to Sharpe's Victor for quality and crop. This, Laxton's, and English Beauty are probably the earliest Potatoes in cultivation. Sutton's A1, a new variety, is likely to oust many of the older early kinds when it becomes better known. This is a round kind, and very early, whilst it is of splendid quality. Harbinger is also a grand early variety of the best quality, and though not so early as A1 and Ringleader it is a sure cropper.

Of the Ashleafs there are many. Veitch's still holds its own as one of the best, and is a good cropper, and of superb quality. I have noted Myatt's, which does well in all soils. In this note amateurs may think my selection too large, but many like one kind of Potato, and condemn others.

W.



Snowdrop Potato: From a photograph by Mr. Parren, Northgate-street, Canterbury.

MUSHROOMS IN PLENTY.

With a brisk demand the making up of Mushroom-beds ought to be as continuous as possible, as the supplies are seldom overdone and the crop is a little precarious as to time of turning in, and no grower can with any certainty guarantee from any one bed a supply in a given time, especially when that time is reduced so low as from six to eight weeks. For example, each bed that I have made since August has taken exactly nine weeks from the time of spawning until I have commenced to cut, but these beds have been either in a cellar without artificial heat or in a house where 50 degs. is the maximum temperature when the weather is at all cold. This slowness, however, is not a thing to be regretted, as crops are good and the Mushrooms extra fleshy—better, in fact, than they would have been if given more heat. Another thing which should incite all private growers to only allowing a short interval between the making up of beds is that beds will occasionally turn out failures, and such should be provided for. Of course we now and then read of growers who have never had a failure during a period lasting over ever so many years, but I fear that such cases are very exceptional indeed, and young growers should never allow themselves to fall into the state of false security which such statements are calculated to engender.

Good supplies of Mushrooms can be had in most places without the assistance of an elaborately fitted-up Mushroom-house, and there are but few places which can boast of a heated greenhouse or two where room could not be found for, and winter Mushrooms grown on, beds in cosy corners in sheds or other such places, through or below which the hot-water mains may pass and give off heat enough to keep a growing temperature around such beds, which must, of course, be kept covered to prevent the surface from getting too dry. I often regret the loss of heat which is so common in most places from having the main hot-water pipes rigidly bricked in instead of simply covering them with something easily moved, so that the heat they give off may be utilised to advantage in the forcing season, and for my own part I am never content until I can command all such sources of heat and use them to assist the supplies from the forcing quarters proper. The oldest Mushroom-beds will now be somewhat spent, and should, if at all dry on the surface, get a good watering, sufficient to thoroughly damp the soil casing, but not to soak far into the manure. For this watering I advise, where possible, the use of stable drainings used in a clear state and well diluted with clear water, but if this is not available, a good handful of salt in a big can of water will have a similar effect—that is, it will lead to the production of a good second crop. This will, however, hardly be a satisfactory one unless the method adopted by the best growers of taking out the whole of the Mushroom and the hard substance underneath it when gathering and filling up the holes so made with fresh soil has been followed, as the old stumps and roots lead to decay when left in the beds, while their removal imparts fresh vigour to the spawn remaining. Whatever water is used should be comfortably warm and be put on gradually and evenly, and not allowed to run over the surface or to soak in in undue proportion on the lower parts of the beds. Dryness of the atmosphere surrounding Mushrooms is bad, but should not be counteracted by the daily use of the syringe on the beds, which is only a make-shift method for counteracting indifferent treatment, and most in vogue by those who advocate a high

temperature for the Mushroom-house and maintain such by overheating the pipes. A slight damping down of the floors now and then, combined with a low temperature, rarely exceeding 50 degs., will usually keep the atmosphere at its best. T.

NEW AND IMPROVED VEGETABLES.

A perusal of the different catalogues to hand is most interesting. There is, however, a great drawback in having so many varieties of one thing, but how is this to be avoided? If we take Peas we shall find that too many names are given to the so-called new or improved forms, when in reality there is no improvement in them. It would be interesting to know how many names the Duke of Albany Pea goes under. I should say this has at least a dozen or more. There have been selections and re-selections for years, and this is nothing more than one might expect, for Peas, like most other things readily cross-fertilised, soon degenerate, and to save them from reverting back it is necessary to frequently make selections of the best. Peas in hot climates soon go back to the original, so quickly do they degenerate. The number of seeds that a pod can be induced to produce, combined with free-cropping habit and first-class quality, are characteristics to to be encouraged before any real improvement can be made.

French Beans have also been improved both in size of pod and flavour, and in some instances appearance also as regards the fleshiness of their pods. Most persons who have taken an interest in the improvement of vegetables know how difficult it is to get the true character of a Bean or Pea fixed. From this it is evident that a great amount of trouble has to be taken before a flower or vegetable can be sent out as new or improved. It would be difficult to say how many of these so-called new kinds are really genuine, and unless a person is well acquainted with the older ones it would be impossible for him to discern the difference. Potatoes degenerate very rapidly, unless it be the Ashleaf varieties, as none seem to have withstood test so long as these. It is true that new varieties of Potatoes are sent out every year, but all are not improvements; in fact, many have very soon to take a back place. Magnum Bonum is not what it was eighteen or twenty years ago, neither is Schoolmaster and many others, all of which in due time degenerate; therefore, if the standard of excellence is to be kept up, encouragement must be given to the raisers of new and improved kinds. How best to accomplish this I will leave to others to determine, but if some means could be devised whereby such things could be tested before they are sent out much annoyance would be saved. At the present time we have no institution capable of grappling with so vast an undertaking. It is only by growing such things side by side for at least two years in succession that any true test can be made. Seedsmen are to be congratulated on their energy and perseverance, for no doubt they are put to considerable expense in purchasing what to them appears to be an improvement which often no doubt in reality is only a well-grown sample. Not so many years ago it would have been considered impossible to grow Onions to the size and weight they are brought to at the present day. Size, however, is not everything, even in an Onion, as we want keeping qualities as well. Carrots have been improved considerably, and the same may be said of Cauliflowers. It would, however, be far better if the number of varieties of Broccoli were reduced, as it is puzzling to know which to select. Of Turnips, no midseason or late variety that has come under my notice is equal to the Purple-top Stone. H.

Weight of Marrows.—I have great pleasure in giving the particulars of dimensions and weights of Marrows as asked for by your correspondent "O. F." The largest one on the right of the photograph (see Gardening, Dec. 11th) weighed 60 lb., was 33 inches long by 42½ inches in circumference; the next largest weighed 47 lb, and was 26½ inches long and 36 inches in circumference; the smallest green weighing 18 lb., but I did not measure it.—R. Filkins, *The Gardens, Kevington, St. Mary Cray.*

THE HOPS AS CLIMBERS.

In the accompanying illustration we see the beauty of the common Hop (Humulus Lupulus), when covering an arch in the garden. This plant is, as is well known, a perennial, and until the discovery of the Japanese species (H. japonicus) was supposed to be the only representative of the family. The Japan Hop is of very quick growth, and makes a dense covering for trellis, verandah, or wall. Its foliage resembles that of the common Hop, but is more deeply cut, and being of a brighter shade of green it presents a fresher and lighter appearance. Seeds may be sown in the open ground. It is said to be singularly free from the insect blight which troubles the ordinary Hop.

Archway covered with the Hop in the garden of Sir William Bruce, Bart., at Vyèra, Ascot. From a photograph by Miss Baron, Cranbourne Corner, Ascot.

VARIEGATED ADAM'S NEEDLES (YUCCAS).

The three forms of the Aloe-leaved variegated Yucca known as Y. variegata, Y. quadricolor, and Y. Stokesi are amongst the best and most enduring of fine-foliaged greenhouse plants. The two latter species are of comparatively dwarf habit, and are many years before they get too large even for a small house. They will succeed well in either peat or loam made sufficiently porous by the addition of sharp sand. They may be increased from suckers, which the plants at times—but not always—throw up from the root. If these be severed in spring from the parent plants they will generally be found to have some roots. They should be placed singly in pots just large enough to hold them, and kept, if possible, in a little warmth until they have commenced growth and get established. Any old specimens that have become naked and bare at the bottom should have their heads taken off early in the spring of the year, removing a few of the bottom leaves, inserting in pots sufficiently large to hold them in a mixture of half sand and loam, keeping them a little confined until they have rooted, but not too moist for fear of causing them to rot. If the portion of stem remaining be cut into pieces, each about 1 inch in length, and then be put half their depth in sandy soil in pots, placed in a little warmth and kept just moist, they will root through the winter. The stump left will break up from the bottom, or the stool after heading down may be allowed to remain, when, if the roots receive just enough water to keep the soil slightly moist, it will break out young growths, which, when they have made half-a-dozen leaves each, may be taken off with a heel and struck singly. Yucca filamentosa variegata is a very distinct and beautiful plant, and although hardy in some parts of the kingdom, is never so handsome when grown out-of-doors as when in a pot under glass, for the leaves in the open air are short and erect, whereas, when cultivated indoors, they attain double the length and curve in an elegant manner, the plant altogether growing much larger than when in the open air. Though long in this country, through the great demand there has been for it, it is anything but plentiful, a circumstance in some measure attributable to the majority of people being ignorant as to the best method of propagating it. Anyone possessing a stout plant early in April should then take it out of the pot, shake away the whole of the soil, and then remove all the strongest leaves, cutting them clean away from the underground stem. The thicker roots should then be cut up into pieces 1 inch in length, and be inserted 1 inch apart in pots drained and filled with a mixture of half sand and loam, or sand and peat, dibbling them in so as to leave nothing above the surface of the soil except the extreme upper end. They should then be gently watered and at once placed in a moderate hot-bed, or in any house or pit where they will be kept a little warm. In the course of a couple of months they will commence growth, forming small crowns, at the same time making root fibres. They must be kept on growing through the autumn, when they should be moved singly into small pots, or if there be not the means of keeping them during the winter in a temperature of 50 degs. or 60 degs. they had better not be potted until spring. In the course of the ensuing summer they will make good plants. The old parent plant thus partially deprived of its roots should immediately be placed in the same or a smaller pot, and put where it will get a little warmth till re-established. B. H.

A gay greenhouse all the year — I was very much interested in reading "North-west Cheshire's" recent article in Gardening Illustrated, as I am quite an amateur at gardening and have a similar greenhouse, and should like to have flowers another year during the winter months. Would "Cheshire" let me know how he manages Freesias, as I had fifty this year, but they are not doing at all well, and seem so very weak?—M. E. C.

HYBRID NARCISSI.

'F late years many charming Narcissi have been aised. The greatest stride, perhaps, of all, or t least the most noticeable, is the widening and eepening, or more correctly, perhaps, intensi-ying, that already indescribably intense hue we all orange-scarlet, which is some day to give s a Scarlet Daffodil. To-day, however, we may est abundantly content with the novelties as hey appear, and in particular all such as are enuine and in some way or other improvements n existing or commercial kinds. For the reatest gains, and therefore improvements, and his from more than one standpoint, we must urn to the hybrids the Rev. G. H. Engleheart as raised. In one particular direction—*e.g.*, he numerous hybrids having either poetarum nd ornatus for the parents, or, again, ornatus nd recurvus, the progeny is in many instances f the greatest value, either from a colour point f view or the size and urity of the hybrids, ven if intermediate in heir time of flowering. lost valuable of all, erhaps, are the seed-ngs resulting from the ommingling of the first wo—a happy thought, ideed, when we re-ember the vigour, reedom of flowering, nd rapidly increasing owers of ornatus, and o these qualities has ow been added in-reased size both in rown and perianth, ogether with a liberal ifusion of the richly-oloured crown so much dmired in the variety oetarum. Where this atter and ornatus are he parents, we see in he seedling flowers of ondrous purity and rilliance that will one ay be welcome in our ardens. In selecting rnatus and poetarum, he aim of the raiser as, I believe, been to etain or improve the etal of the former, and t the same time secure he intense red eye of he latter. Not only as this resulted beyond ll expectation, but ith blossoms largely ncreased in size, and ith all the purity and olidity of petal the ost sanguine could esire, these varieties ill one day render the ow popular ornatus nall and even insig-ificant by comparison. large number of the edlings from these osses are as yet not amed. Some of the ery finest, however, have received distinctive ames.

Some very interesting hybrids have resulted y crossing ornatus with the late-flowering ecurvus, particularly those flowers that are but ne counterpart of recurvus in every detail xcept that they come fully a fortnight earlier nto flower, thus forming a closer connecting nk between early and late poeticus varieties, nd thereby filling up the gap that had hitherto xisted. These should prove valuable kinds for ne future if good and free flowering. Two ears ago came that noble bicolor Ellen Will-iott, perhaps the greatest acquisition of all, a ower possessing size, substance, with superb nish and faultless form. A very distinct kind alled

NAIAD is the outcome of crossing poeticus rnatus, I believe, with N. triandrus, the ybrid being of exceptional merit and distinct, ith two and three large flowers on each scape. n this instance the segments are white and cup aintly lemon-tinted. J.

ARRANGING A GARDEN FOR PERMANENT EFFECT.

(IN REPLY TO "MIDLANDS.")

To begin with, I must explain, for the benefit of others, that "Midlands" has a lawn with four beds on it, two of which are 18 feet by 6 feet, one 14 feet by 4 feet, and another much smaller one. Round the lawn are two borders, one 45 feet by 6 feet, and one 60 feet by 3 feet. At the end of it are some railings, and at the back of the borders is a wire-netting fence.

As regards the wire fence: On one side behind the border (No. 7), which is 60 feet by 3 feet, this fence has an open space and view at its other side. I should plant the following Roses in the border at the foot of it: Blairi No. 2 and Charles Lawson, which are both Hybrid Bourbon Roses, Duke of Edinboro' and Magna Charta, which are Hybrid Perpetual Roses, Rosa rugosa (Japanese Rose), Mme. George Bruant, the Tea Rose, Mme. Berard, and Lord Penzance's Hybrid Sweet Briars, Annie of Gierstein, and the Rose Brawardine, and the Rose called Polyantha grandiflora, which in the catalogues of Rose growers will come under the heading of "Various Species." If the fence was mine, I should plant two of each of these Roses, 3 feet apart, side by side, and then two others side by side, all down the 60 feet. I named ten Roses, and by thus putting two side by side there would be twenty Roses in all—the number required for 60 feet of fencing if the Roses are always 3 feet plant from plant. In the border in front of this fence plant two rows of Hybrid Perpetual Roses, lists of the best kinds of which are often being given in GARDENING, unless "Midlands" preferred a great mass of one colour to a collection of Hybrid Perpetual Roses, and if he preferred the mass of colour I should fill the bed with one of these two Roses—La France or Miss Jeanne Dickson. The former blooms much longer than the latter, and it is a sweeter Rose, and a very good one for planting thus in a mass; but Miss Jeanne Dickson is a fine Rose, of a brighter rose-pink than La France, and during its blooming season flowers more profusely. It is also a much stronger grower than La France, and without that coarse growth which we find in Roses of the Baroness Rothschild type.

This bed I should underplant by putting groups of bulbs of Narcissus between each two Rose-trees down both the rows of them. I plant all my Hybrid Perpetual Rose borders with Daffodils, and for several years have thus combined in the same bed a collection of Roses with one of Daffodils. But I must warn "Midlands" that if he wants a bright effect with Narcissi he must select either the white-winged bicolor varieties or those which come under the heading of Incomparabilis, Barri, Leedsi, Nelsoni, Burbidgei, and Poeticus. These last-mentioned have all more or less star-shaped flowers, and will bloom almost at the same time. The bicolor ones flower earlier, and other groups of Narcissi which I have not mentioned flower before the bicolor group and after them, and some of them almost at the same time; but for a novice it will be best to select either the bicolor group or a collection from those other groups I have named. If the bicolor group is selected, let P. M. Barr, Emperor, Maximus, Sir Watkin, be added to it. They are four of the best Daffodils I know, and their season of flowering and growth make them in every way suitable to be planted in the same bed as the bicolor varieties.

A seedling Narcissus at Warley Place. From a photograph by Miss Willmot.

Now we pass on to border No. 8 on "Midlands'" list. It is 45 feet long and 6 feet wide. Like border No. 7, it has a wire fence behind it, and behind that a Larch coppice. The border faces south, the Larch coppice coming close up to the back of it. I should have a background of Rhododendrons 3 feet from the fence. There would for many years be space for such plants as German Flag Irises and Tufted Pansies in front of the Rhododendrons, and groups of Phloxes, Delphiniums, and Lilies between the Rhododendrons, and for the time being it should be planted with these, taking care they do not encroach upon or overshadow the shrubs. Parts of the outer fringe of the border would remain unintruded upon by those permanent occupants for years, therefore it should be made gay, and it would be best to make it so in a permanent way. Flag Irises and Pansies, and amongst them the late-flowering Cottage and Darwin Tulips, the low-growing varieties of Lilium Thunbergianum, which are so hardy and so vivid in their colouring, Scillias, Spanish Irises, Gladioli, Chionodoxa, would all be effective and suitable for the filling in of this border; but with the exception of a group of higher-growing plants between the Rhododendrons, I should avoid tall plants or rank growth for the front of this bed.

There are some iron railings between the garden and the road which runs close by it on the side which faces north-east. Just in front of that I should plant the common Laurel, because it grows more quickly than anything else into a thick, dense hedge, which I should allow to grow to a height of 7 feet or

8 feet. Keep it clipped and flat at the sides and top.

In this garden there are four beds on a lawn between the house and the borders I have already described. One of these beds is 18 feet by 6 feet, and this bed, if it were mine, I should fill with Phloxes (the late-flowering ones) and Davuricum Lilies in groups. A mass of scarlet will ensue in June, and an equal mass of rose-red-crimson, mauve, and white in August and September. Having thus planted this bed I should completely fill the soil which is not actually occupied by these plants with violet Crocuses and white English Scillas. This will result in the bed having the appearance in February of being full of Crocuses, and in April and May when the Crocuses are over the Scillas will hold their own, and in their turn appear as if they were almost the sole occupants of the bed.

The second bed on this lawn is the same size, 18 feet by 6 feet. I should plant white perennial Lupins and Flame-flowers (Tritomas or Kniphofias). This bed I should underplant with white Arabis and scarlet Van Thol Tulips. If it is thus planted there will be a scarlet bed in April, a white one in May, a white one again in June and perhaps part of July, with a splendid effect of scarlet again for a long time in the autumn.

Bed No. 3 is 14 feet by 4 feet. In it I should plant early-flowering single Pæonies. I should select Arietina Northern Glory, Arietina cretica, Arietina Crown Princess, Corallina, Decora Elatior, Decora Pallasi, Emodi, Officinalis blanda, Officinalis rosea, and Wittmanniana. Amongst these and alternately with them I should then plant Anemone japonica Lady Ardilaun, and having done this I should fill all the remaining soil with Galtonias and the blue Hyacinth called Charles Dickens. The Hyacinths will give a bright blue effect in April, the Pæonies with flowers in May (though they will not overtop the Hyacinth blooms when the Hyacinths are in flower), and in July and August the Galtonias will shoot up their long spikes of white bloom, and before they are well over will be succeeded by the White Anemones, which will flower on for a long time into the autumn. The Pæonies must not be cut down when they have flowered, but as soon as their flowering season is over tie their leaves and stems fairly close together.

There is now left in "Midlands'" front garden a small bed, in which I should put Wallflowers in the spring, and either scarlet bedding Begonias or John Gibbon "Geraniums" in the summer, and a trellis upon which I should grow Vitis Coignetiæ, which is not only hardy and a quick grower, but has the most handsome foliage of any creeper I have yet seen.

"Midlands" has two borders in his kitchen garden 60 feet by 4 feet, and in one of these I should combine a good collection of Bracteatum and Orientale Poppies (both of which kinds are, of course, perennial) with a further collection of late-flowering Phloxes and Narcissus (choosing the Trumpet kinds for this bed if the star-shaped ones were selected for the Rose-bed in the flower garden, or *vice-versâ*).

In the other bed, 60 feet by 4 feet, a really good collection of late-flowering Pæonies might be grown, with good Perennial Sunflowers, Coreopsis, Helianthuses, and Heleniums, and a collection of spring-flowering Crocuses. The Pæonies and Helianthuses, etc., might be planted in the same way as the Phloxes and Poppies. The Crocus-bulbs might be put in between them in groups.

Border No. 4 and border No. 5 I should fill with Michaelmas Daisies (Perennial Asters), of which there are many varied and beautiful named varieties. And for early summer effect in this bed plant clumps of Siberian Irises at the back of the border, and the earlier-flowering Flag Irises (Germanica group) to the front, putting some Iris florentina amongst these latter, as they flower at the same time. I should not underplant this border with bulbs.

In border No. 3, which is 27 feet by 3 feet, combine a collection of Irises amœna, aphylla, neglecta, and pallida with a collection of Tea Roses.

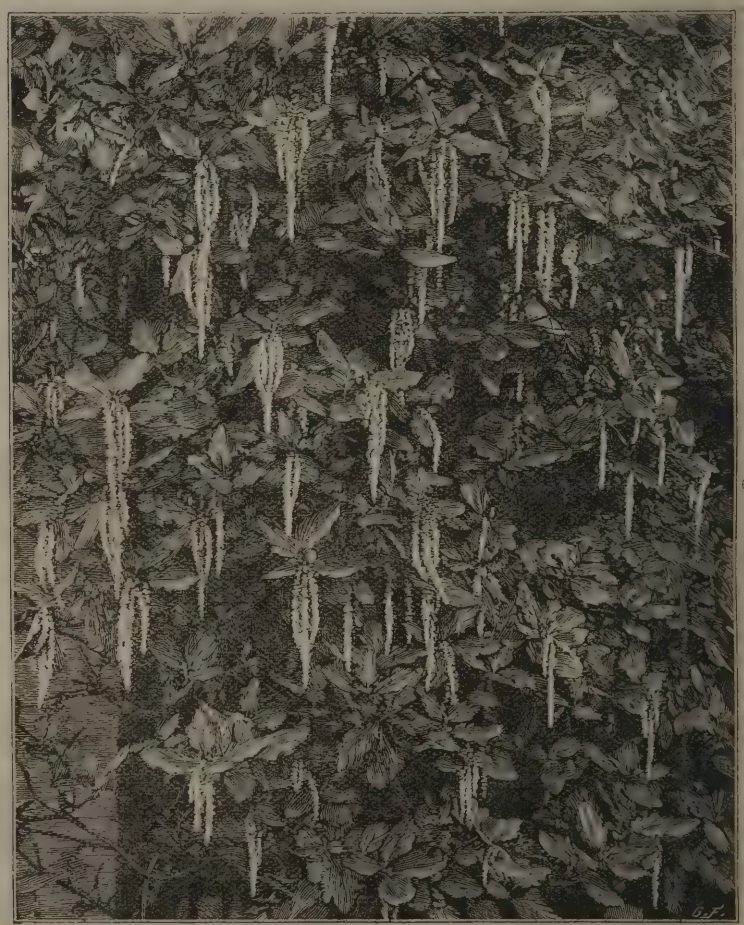
Border No. 6 is 24 feet by 4 feet, and I should put a collection of double and single Pyrethrums and Montbretias into it in the same way, and at the same distance apart as the Pæonies, etc. For spring put in clumps of Scillas and Chionodoxas.

As to these Pæonies, Irises, etc., I have in recent numbers of GARDENING mentioned those named varieties which I admire most and consider the best growers and freest bloomers. I can but repeat what I have often said before, that all borders must be well dug, well manured, and have leaf-mould added to them before planting, and be well mulched with leaf-mould and manure every autumn if the best result is required from them. MRS. JOCELYN.

TREES AND SHRUBS.

GARRYA ELLIPTICA.

THIS is deserving of more extended cultivation than it at present seems to receive, as at this season it is very attractive. For cutting to place in tall vases the sprigs or branches are very useful for the decoration of rooms, either alone or in conjunction with other blooms, as they afford the necessary greenery, and the catkins hanging so gracefully produce a striking effect.



A winter-flowering shrub (Garrya elliptica).

Garrya elliptica does well as a shrub, but it does best against a wall, as there it gets shelter and the flowers do not get so much injured if bad weather sets in. The foliage and general growth of the plant resemble those of the Evergreen Oak, except that the leaves are shorter and broader. The way to treat it when on walls is to prune annually, so as to keep the branches in and secure young breast-wood, as on this the flowers are formed. The time to prune is immediately the flowers are over, as then the plants quickly break and make their growth, which if well ripened will produce a profusion of catkins.

The Weeping Aspen (Populus tremula var. pendula).—It is not often that one sees any appreciative mention of the Weeping Aspen as a flowering tree, but at the latter end of February or early in March (according to the season) there is nothing more striking among hardy trees and shrubs than this tree in full blossom. Of course, its flowers are of too sober a hue to give it the attraction of showy colour, yet their grey-brown tints and the graceful tassel-like catkins in which they are produced have a well-marked beauty of their own. The catkins are perfectly cylindrical, from 3 inches to 4 inches long, and at the time mentioned hang in hundreds from the pendulous branches. They are borne in such profusion, indeed, as to frequently cripple the tree, especially where it grows in dry, sandy soil. The catkins are so light and flexible that every breath of air sets them in motion, and the tree has, when in flower, almost the same restless appearance that has given it its proverbial character when in full leaf. It is, as a rule, grafted 8 feet or 10 feet high on standards of the ordinary upright Aspen, but it would be worth while getting it on its own roots by means of layers or cuttings, although, unfortunately, it does not root with the freedom of most Poplars. It is, no doubt, owing to its being grafted that its frequent early decay is due, especially when stocks of species other than P. tremula are used.

Garden—planting shrubs (*J. Arthur*).—Thanks for rough plan. The common Holly would make a fine hedge near the road. The English Yew and Thuja Menzesi would also answer well. For the front of the house the following shrubs can be well recommended. They are hardy, ornamental, and of easy culture. Amongst evergreens Olearia Haasti and Berberis Darwini are conspicuous. The first-named flowers in autumn, while the Berberis carries a large quantity of yellow blossoms in spring. Kalmia latifolia, Choisya ternata, and Escallonia Philippiana are choice, free-flowering shrubs. Yuccas, Veronicas, Cytisus albus, and Raphiolepis ovata, would answer your purpose admirably. Among the deciduous section the following are good: Spiræas, Hydrangea paniculata grandiflora, Weigelas, Forsythias, Daphne Mezereum and its varieties, the Japanese Snowball-tree (Viburnum plicatum), Cydonia japonica, and the Winter Sweet (Chimonanthus fragrans). The plants here mentioned are of good habit, very free flowering, and easily managed. The plot of ground on the S.W. side of the house would d

for a tennis-court, if large enough; if not, plant one or two graceful conifers on the outskirts, such as Retinospora filifera and Thujopsis borealis. Also a small selection of choice flowering shrubs, of which the following are good examples: Cerasus, Almonds, Thorns, and Magnolias. It would be very unwise to raise a bank of earth against the hedge, as the latter requires light and air just as much as all other tree life. If you do make a bank, it must be some little distance away from the hedge. On the vacant walls you cannot do better than plant Pear Doyenné du Comice. Peaches and Nectarines would do well in the same position.

Chimonanthus fragrans (*Miss Heywood Jones*).—A great mistake made in the culture of this favourite winter-flowering shrub is that it is pruned at the wrong season of the year. As the flowers are borne on the summer shoots pruning should be attended to in spring, the object being to encourage as much young growth as possible. Keep the plants well supplied with water at the roots in early spring and summer, and if you have a syringe use it freely amongst the top growth.

Copper Beech (*Snowdrop*).—The Copper Beech is not a very difficult plant to grow in ordinary soils and positions, but as your soil is composed largely of white sand, and the plant appears to have been badly treated at the time of planting, we should recommend you to lift it and replant it in a loamy soil.

Hollies (*A. C.*).—With the exception of Ilex Aquifolium fructu luteo, we cannot call to mind any other green-leaved Holly which bears yellow berries. There is a variegated form named I. A. aurea media picta, which rarely ever fails to carry an abundant crop of yellowish berries every autumn. An article on Hollies appeared in our issue of December 25, 1897, p. 621.

FRUIT.

WELL-FLAVOURED PEACHES.

Many amateurs grow Peaches in pots who could not devote a house to trees planted out, but my notes, though necessary brief, will treat also of the best-flavoured Peaches for open walls. As shown in the illustration, the Peach fruits well when grown in pots; but it is useless for amateurs to attempt its culture if the trees are left to chance. Few fruits are more profitable when well grown, and I have noted the value of pot-trees for amateurs who wish to make the most of a house. The trees can be placed in the open for a good portion of the year, and the house used for other plants. On the other hand, from April or May until July pot-trees need more attention than those in borders, and as that season is a critical time, it may be well to guard against failures. Peach-trees in pots are often grown for their quick fruiting when young, continuing to bear freely for years. As regards the preparation of the trees for fruiting, much depends upon the space at command.

Amateurs may wish to know what is the best or easiest mode of culture. I would not advise pot-trees if there is a want of labour at the season named, as with a few hours drought on a hot day the whole crop may be lost. There is in such cases a greater certainty of planted-out trees succeeding, and though in any case it is useless to grow the Peach or Nectarine without due attention to details, it is less risky with trees in borders if they are not daily attended to. The Peach fruits so freely in any case, whether in pots or planted out, that it is necessary to reduce the crop to quite one half in its earlier stages. Many trees go wrong because they are allowed to become crowded. I have explained that young trees fruit readily, but, on the other hand, in most cases it is well to purchase what are termed established trees. These are prepared by pruning them into shape, and they are in condition to fruit the first season of growth in their new quarters. They are not costly, and their size, shape, and healthy fruiting condition well repay for purchasers' outlay. Now or at any time until March is a good time to buy fruiting trees, and it is not necessary to purchase in pots, as they may be potted on arrival, but pot as firmly as possible; avoid rank manures, and let the compost be good loam—say three parts—the other old mortar-rubble or wood-ashes. Manures encourage rank growth, which casts the buds or fruit, and requires so much moisture. Avoid large pots at the start, 9 inches to 12 inches being ample. Do not force hard the first year, or allow too much fruit to mature. Trees in pots should also be protected against sudden extremes of weather, as too much wet soddens and decays the fibrous roots, and frost also injures, so that when in the open the pots should be plunged and the wet thrown off in the winter. There should be little pruning at this season, as the pinching needed whilst under glass, and the removal of old fruiting wood as soon as the fruit is removed, will bring the trees into proper condition.

Pot-trees should not be too much forced, the best results being obtained by growing them more naturally, and the fruits are better flavoured and larger. I have scarcely touched upon borders or trees planted out, but this mode of growth is more known. For this latter purpose there is no lack of variety, and for open-air culture a good selection is at command. The grower must in this latter case be guided by the means at command, soil and position being of primary importance. With the introduction of Peaches from America of late years quite a month's gain in earliness has been obtained. This is fortunate, as now we may gather Peaches in the open from July to October, a period of four months, and in many cases fruits of the best quality and large in size. The amateur cannot be expected to know the best-flavoured fruits, and I will describe them. On the other hand, size does not signify the best quality. Of late years we have been well favoured, as the hot sunshine has brought out the good qualities of Peaches, which are often condemned in our variable climate. It will be found for open walls the best varieties are the mid-season fruits, and some of the better known still hold their own. For earliness or pot-culture one of the newer American kinds,

Early Alexandra, still holds its own. It is a very early fruit, in season early in July. We have in a good season had this variety ripe the first week in July on a south wall, and it does well with pot-culture. If forced too hard at times it drops its buds, and the crop is lost. In pruning these precocious varieties leave more spray or small wood, as this will set a crop when the stronger fails. This variety is well flavoured, brisk, and a grand colour. Another excellent early Peach, a day or two in advance of the one named, and a grand forcer, is

Amsden June, also an American fruit; this lacks the good flavour of a mid-season Peach, but its earliness, size, and colour make it valuable.

Hale's Early, a fine fruit, is in season early in August. It is probably one of the best in its season, of good quality, high colour, large, melting, and of a pleasing shape. It rarely fails as a pot or border tree, and is one of the best for cold soils or a northern locality.

A pyramidal Peach-tree in fruit in a pot.

Early Grosse Mignonne is likewise one of the best-flavoured Peaches grown. It is of fine colour and in season early in August; it follows closely on Hale's Early. It rarely fails to finish a grand crop, but this variety must not be confounded with the ordinary Grosse Mignonne, which is quite distinct, is not a good cropper when forced, or a good pot-tree in comparison with the true earlier kind.

Goshawk is another American variety, very large, a late August fruit of grand flavour, pale colour. A good pot and forcing variety, vigorous in the open, also cropping heavily.

Royal George is well known as one of our oldest and best Peaches. It is not only a most reliable cropper, but one of the best flavoured, being in season early in September. It is a large, melting fruit, forces well in any form, and is not particular as to soil or locality; it is one of the most reliable.

Dymond is specially fine in every way, both as regards quality, crop, forcing, and size. It should be in all collections. Where size and quality are needed, the tree in the open is one of the hardiest, and it never fails to finish a fine crop of large fruit, but needs severe thinning.

Stirling Castle.—This is as invaluable as Royal George, and a splendid pot variety or for open walls, being in season the middle of September.

Bellegarde is a reliable fruit for late September, and with this I may mention Barrington, which is similar to it in quality and season. Both are good in any form and of fine quality, season considered.

Sea Eagle is a good autumn fruit of pale colour but high quality. It is in season late in September. An excellent pot or border-tree and very prolific, sets well, and is a large fruit.

The Nectarine Peach is not grown nearly as much as its merits deserve. This is late, but of good flavour, melting, and rich. It is good into October, and should be in all collections for its quality and cropping.

W.

Apple Hoary Morning.—I am inclined to think that this Apple is a very shy bearer, that perhaps being the reason why even the largest trade growers are omitting it from their lists. When first sent out it used to be exhibited in the great Kentish and Sussex collections at the Palace and other shows, but now-a-days one seldom meets with it. Some eight or nine years ago I planted Hoary Morning as a cordon in a light, well-drained soil, but until this season it has never once shown a single bloom-bud, much less a fruit. I find, however, that there are now a few stout bloom-buds, so I may get a few fruits from it next autumn. Had the tree grown grossly I should not have wondered at its continued barrenness, but as the reverse of this is the case and plenty of spurs

have been formed, though there are no bloom-buds, I think the fault must lie in the variety. —J.

CORDON PEARS.

As a large grower of cordon Pear-trees, the note in Gardening, Jan. 1st, page 640, naturally interested me, and I can endorse most of what it contains. To those who are contemplating planting Pears, and who want to see some return as quickly as possible, I know of no form of trees I can more heartily recommend; but they require careful treatment in order to keep them fruitful and in good health. They certainly will not bear the rough treatment so often given to espaliers and bush-trees. Most of the varieties should be worked on the Quince or double grafted. If worked on the Pear-stock, it will necessitate very hard pruning both at root and branch, and this will soon paralyse the tree. But there are exceptions, some of which are mentioned in the note referred to—viz, Beurré d'Anjou, Doyenné du Comice, Beurré Bachelier, and Winter Nelis should certainly be worked on a vigorous stock and not pruned too severely. Five years ago I planted a wall, 125 yards in length, with cordon Pears, with the exception of a little space at one end of it, which is devoted to Peaches and five Plums. I made my wants known to two of the leading nurserymen in England, both of whom are renowned for their cordon trees. The trees came in April, some of them with flowers on them. The weather was very dry and hot for the time of year, but the trees were most carefully packed and in first-class condition. They had masses of roots, and for the most part worked on the Quince-stock, but, unfortunately, Winter Nelis, Doyenné du Comice, Beurré d'Anjou, and one or two other varieties were also worked on this stock, and they have since been replaced with trees on the "Pear or free-stock." The other trees grew away vigorously, not one dying; but I should say that as soon as received they were unpacked and plunged into a large tank of water, where they were left for twenty-four hours. The wall is from 9 feet to 14 feet in height and faces due south, and the splendid crops of fruit these trees have borne have been admired by many gardeners. But, as I said above, they must have liberal treatment. These trees are surface-dressed every autumn or winter with the following compost:—Blood, wood-ashes, loam, and bone-meal, well mixed together, and they pay for it. I may say that in the same year I also planted a lot of espaliers, but it was only during the past season that I have gathered anything like a full crop from them. There is one exception I must take to in "E.'s" note—viz., Olivier de Serres. This, I find, does first rate, and the fruit is of the finest quality and size. We are now using it, which is rather earlier than usual. Anyone having only a limited space of wall to fill cannot do better than plant cordon Pears, not with a host of varieties, for this, in my opinion, is a mistake. A dozen good kinds are enough for almost any large garden. I can speak with experience on this point, for I made the too common mistake some years ago of planting too many kinds, and am now replacing them with well tried sorts. I can recommend the following for this neighbourhood: Jargonelle, Williams' Bon Chrétien, Marie Louise, Doyenné du Comice (one of the finest Pears in cultivation), Louise Bonne of Jersey, Josephine de Malines, Glou Morceau, Olivier de Serres, Thompson's (a fine Pear), Winter Nelis, and, if a sensational Pear is wanted, plant Pitmaston Duchesse, but I cannot say anything in praise of its flavour. Thomas Arnold.

The Gardens, Cirencester House.

A Clianthus in bloom outdoors in January.—As illustrating the mildness of the season, local papers here have been rejoicing over wild Strawberries picked by the dozen on Christmas Day; but a fact which deserves more prominent mention is, I think, that at Beeson, a hamlet near the shores of Start Bay, I saw yesterday (January 4), against a cottage wall facing south-east, a Clianthus 8 feet in height and in full bloom. It has received no protection, and though I have known the plant for years I never saw it in bloom at this time of the year. Besides the foregoing, I could have picked a bouquet of Fuchsias, Anemones, Pansies, Salvias, Stocks, &c.—F. G. Harris, *Kingsbridge, South Devon.*

CHRYSANTHEMUMS.

PROPAGATING AND STOPPING CHRYSANTHEMUMS.

I wish to know (a) the best time to strike the following varieties, (b) which to top and when, (c) which buds to retain, (d) and the sorts which require special feeding? I wish to grow them for exhibition blooms and propose to grow three blooms on each plant. I know this is rather a long list, but, as I have been a reader of your paper for some years, I shall be obliged if you will afford the space to reply to my question fully.—Anxious.

*** Propagate each of your varieties without delay, securing the three best and healthiest-looking plants from the stock. Carefully observe the details of culture given against each variety, and you cannot very well fail if you give the necessary attention during successive seasons.

Names.	When to stop.	Which bud to retain.	Feeding required.
Viviand Morel	Natural break	Late crown	Liberal
La Triomphante	Natural break	Late crown	Plenty
Charles Davis	Natural break	Late crown	Liberal
Gloriosum	May 12	First crown	Liberal
Wm. Holmes	Natural break	Terminal	Moderate
Col. W. B. Smith	Natural break	Second crown	Moderate
Sunflower	Natural break	First crown	Moderate
Enfant des deux Mondes	End March	Second crown	Moderate
Louis Boehmer	End March	Second crown	Moderate
Mrs. Dr. Ward	End March	Second crown	Moderate
Hairy Wonder	April 10	Second crown	Moderate
Beauty of Truro	This variety not known		
Lady Selborne	Natural break	Terminal	Moderate
Gloire du Rocher	April 6	Second crown	Liberal
Lord Brooke	April 15	First crown	Liberal
Souvenir de Petite Amie	Natural break	Second crown	Moderate
Florence Davis	April 6	Second crown	Moderate
Wm. Tricker	April 10	Second crown	Liberal
Baron Hirsch	Natural break	Late crown	Little
Elaine	April 15	Second crown	Moderate
Mlle. Thérèse Rey	Natural break	First crown	Moderate
Louise	April 10	Second crown	Moderate
Mme. Carnot	End April	First crown	Moderate
James Salter	Natural break	Terminal	Moderate
G. C. Schwabe	April 10	Second crown	Moderate
M. Pankoucke	Natural break, pinch resulting shoots mid-June	First crown	Liberal
Mme. Edward Rey	April 10	Second crown	Liberal
Lady T. Lawrence	April 15	First crown	Liberal
John Seward	May 7	First crown	Moderate
Wilfred Marshall	End April	Second crown	Liberal
Deuil de Jules Ferry	April 10	Second crown	Moderate
Graphic	May 7	First crown	Liberal
International	April 6	Second crown	Liberal
Good Gracious	May 7	First crown	Liberal
Mrs. H. Weeks	April 6	First crown	Moderate
Golden Gate	April 10	First crown	Liberal
Amos Perry	First week April	Second crown	Liberal
Com. Blusset	Natural break	First crown	Moderate
Eda Prass	End March	Second crown	Moderate
Thos. Wilkins	Natural break	Second crown	Liberal
Primrose League	First week April	Second crown	Liberal
Waban	First week April	Second crown	Liberal
C. H. Payne	Natural break	First break	Moderate
Australian Gold	April 10	Late crown	Moderate
Arona	Natural break	Second crown	Moderate
Alice M. Love	Natural break	Second crown	Little
Dorothy Seward	April 10	First crown	Liberal
Edith Tabor	Natural break	First crown	Moderate
Emily Silsbury	Natural break	Second crown	Moderate
H. Woolman	Natural break	First crown	Liberal
Lago Maggiore	April 10	Second crown	Moderate
Mrs. H. Briscoe Ironside	Natural break	First crown	Moderate
Mrs. John Shrimpton	April 12	First crown	Liberal
Mr. A. G. Hubbuck	April 15	First crown	Liberal
Directeur Tisseraud	End March	Second crown	Moderate
Mons. Chenon de Leche	Natural break	Retain buds end August	Liberal
Mutual Friend	Natural break	First crown	Liberal
Phœbus	April 10	Second crown	Liberal
J. Agate	April 6	Second crown	Moderate
Wm. Seward	April 15	Second crown	Moderate
Miss Dorothea Shea	April 6	Second crown	Moderate
Bonnie Dundee	April 6	Second crown	Moderate
Pride of Madford	Natural break	First crown	Moderate
Pride of Swanley	Natural break	First crown	Liberal
J. W. McHattie	End March	Second crown	Moderate
Rose Wynne	April 6	Second crown	Moderate
Niveum	April 21	First crown	Liberal
Mme. Ad. Chatin	Natural break	First crown	Moderate
Surpasse Gambetti	Natural break	First crown	Moderate
Lady Byron	April 10	Second crown	Liberal
Exmouth Yellow	April 15	First crown	Moderate
Mme. E. Capitant	Natural break	First crown	Moderate
Bellini	April 10	Second crown	Liberal
Miss M. Goschen	Natural break	First crown	Moderate
Mrs. C. E. Shea	April 15	First crown	Liberal
Miss M. Godfrey	April 10	Second crown	Moderate
Maggie Shea	April 15	Second crown	Moderate
President Carnot	April 15	First crown	Moderate
Reine d'Angleterre	Natural break	Second crown	Moderate
Philadelphia	April 15	First crown	Liberal
M. Demay Paillandier	April 3	Second crown	Liberal
D. B. Crane	Natural break	Late crown-bud	Moderate
Chamechande	April 15	First crown	Moderate
Viscomte Roger de Chezelle	End March	Second crown	Liberal
C. W. Richardson	April 20	First crown	Liberal
Wood's Pet	April 3	Second crown	Moderate
Mme. Marius Ricoud	Natural break	First crown	Moderate
General Roberts	April 10	Second crown	Moderate
L'Amethiste	End April	First crown	Moderate
Mrs. J. Wright	April 10	Second crown	Moderate

[We give this reply so fully because we feel sure other readers will benefit by the information given.]

Chrysanthemums—eighteen sorts of easy culture for amateurs (*R. M.*).—You ask us to exclude white sorts, as you have a good white one. This is not sufficient in a selection of this number, and on this account we have included two others. The following are all Japanese sorts, of medium height, and produce large blooms at end of October and early November quite easily: Lady Hanham, rosy-buff; Viviand Morel, silvery-mauve; Chas. Davis, bronzy-yellow; Mons. Chenon de Leche, rosy-buff, shaded yellow; Louise, flesh-pink;

Australian Gold, pale yellow; Emily Silsbury, white; Souvenir de Petite Amie, white; Lady Randolph, claret-crimson; Mme. Ernest Capitante, dark old rose; Mons. Chas. Molin, reddish-orange; Pallanza, rich golden-yellow; Phœbus, clear yellow; Reine d'Angleterre, rosy-mauve; W. H. Lincoln, bright yellow; William Seward, deep crimson; William Tricker, delicate rose; and Milano, cherry-carmine. Get your plants rooted as early as possible, and retain second crown-buds. The second crown-buds are those which appear in the points of the shoots. In the second series of buds, after the first break has been made—*i.e.*, the third lot of buds appearing in the life of a plant as follows: 1st bud (when break is made), 2nd bud (1st crown), 3rd bud (2nd crown), the two latter appearing successively after the break is made.

CHRYSANTHEMUM ETOILE DE LYON.

In order that W. F. Dark (p 615, GARDENING) may experience no disappointment with respect to his supposed white sport of this variety, it is well to point out that where the flowers expand so late in the year they lose nearly or quite all the pink tinge which distinguishes them in a normal condition. This is especially the case where little or no disbudding is done—the more flowers left the purer they come. I have had plants of Etoile de Lyon in bloom at Christmas, the larger flowers being faintly flushed with pink, whilst the generality were pure enough to be classed with white flowers. Cuttings taken from branches that have carried these white blooms will produce pink ones the following season—that is, if allowed to flower at the usual season. Your correspondent is not the only one who has been deceived in this way, this bleaching of the flowers in early winter having been mistaken for a fixed variation in colour. It is, of course, possible—though, under the circumstances, by no means probable—that a white sport has at length been obtained, and I advise W. F. Dark to take cuttings and grow them on, allowing them to bloom in November. If the flowers come white at that season the sport will be fixed. Etoile de Lyon is a valuable Chrysanthemum for late blooming, and its merits for this purpose have never, I think, been quite appreciated. It is of vigorous growth, a very easy kind to grow, giving a lot of bloom under rough-and-ready treatment. It succeeds very well when planted out and lifted in the autumn. I have frequently kept plants of this variety a second year, cutting them down in May and shifting into larger pots in July. Plants managed in this way will give a quantity of bloom during December; in fact, up to the New Year, if they remain in the open until the end of the first week in October, or ten days or a fortnight longer with a little protection. By striking cuttings in April one may have nice little specimens in 6-inch pots, carrying about a dozen good blooms. BYFLEET.

Chrysanthemums—October flowering (*W. Pickworth*).—Your selection of October flowering sorts is a good one, but may be improved upon. We should prefer instead Mlle. Lacroix, Emily Silsbury, Queen of the Earlies, Souvenir de Petite Amie, and Lady Selborne, among the whites. Of the yellow sorts, you cannot well improve upon Mr. Charles E. Shea, Clinton Chalfant, and Ivy Stark. If you grow Mme. la Comtesse Foucher de Cariel (rich orange-yellow), as you propose, you must disbud it, or the result will be very disappointing. This variety should be grown freely, when it produces an enormous crop of blossoms. Annie Clibran (soft rose-pink), Ambroise Thomas (reddish-bronze), and Mons. W. Holmes are each excellent October sorts, and you might supplement your list with that of Mrs. A. J. Parker (light pink-shaded salmon). We should prefer to let the plants grow naturally, and select crown-buds when they appear if you want an early October display. By letting the plants grow on to the terminal buds you would be a few weeks later with the display and secure far prettier flowers.

Chrysanthemums for market (*Fern*).—To grow Chrysanthemums for market in a cut state it is very important that only those sorts should be grown that develop their blossoms freely on long footstalks of medium size, and of good, distinct, and lasting colours. There are many varieties which come within this category, and we are pleased to mention their names. When growing these plants for market it is useless to allow them to develop blooms of exhibition standard. For ordinary purposes blooms of medium size are far the best, as so many uses can be found for those of this size. To make the cultivation of the Chrysanthemum for market purposes a profitable venture it is well to have a supply of flowers from September until December, or even later, as either the early or the late supplies really make the bulk of the profit during some seasons. What may be a success one season may not necessarily be so another season. Novelty in colour, and in form too, often enables a grower to make a success, so that each season novelties should be looked after. The following Japanese sorts should meet your requirements. Early and semi-early sorts.—White: Mme. C. Desgrange, Lady Fitzwygram, Mychett White, Queen of the Earlies, and Barbara Forbes. Yellow: George Wermig, Mrs. Burrell, Orange Child, Clinton Chalfont, and Ryecroft Glory, bronzy-yellow; other colours worthy of attention are Harvest Home, crimson and golden-yellow; Vice-President Hardy, orange-scarlet, yellow reverse; William Holmes, rich crimson; Ambroise Thomas, reddish-bronze; Mme. la Comtesse Foucher de Cariel, rich orange-yellow; Edie Wright, rosy-purple shading to pink; Mme. Casimer Perier, white, suffused pink; Roi des Précocés, rich crimson; Notaire Groz, silvery-mauve; Mlle. Lacroix, white; and Mr. C. E. Shea, yellow. Mid-season sorts might be well represented by the following whites: Souvenir de Petite Amie, Emily Silsbury, and Mlle. M. A. de Galbert. Yellow: Phœbus, W. H. Lincoln, and Kentish Yellow. Bronze and orange by Mons. Chas. Molin, Source d'Or, Mons. Georges Biron, and Thomas Wilkins. Pink and rose by Viviand Morel, Reine d'Angleterre, and Helen Bloodgood. Crimson and rich shades of colouring by John Shrimpton, G. W. Childs, and William Seward. Late sorts are best represented by Niveum, white; L. Canning, white; Golden Dart, yellow; Janette Sheahan, yellow, tinted bronze; King of Plumes, yellow; Golden Gate, tawny-yellow; Pride of Ryecroft, pale-yellow; Tuxedo, terra-cotta; and Mme. Felix Perrin, soft rose. We have given you a somewhat lengthy list, not knowing your requirements, but if there are too many for your purpose, you can reduce the number by having fewer of the different colours represented.

GARDEN PESTS.

CURE FOR ONION GRUB.

THE dreaded Onion grub works sad havoc in many kitchen gardens, a fair crop being hard to secure. One found the best results from the free use of soot worked into the ground when preparing it in winter, and also by well-sprinkling the surface of the ground in spring after the seed was sown and previous to giving the surface the final raking. A gardener in the North of England, whose Onion crops suffered for many years from the ravages of this insidious pest, has at last found a perfect remedy, and is now able to grow heavy crops of clean, sound bulbs. He got the recipe from a very old practical gardener whose soil was of a heavy retentive character, and in which the Onion crop always suffered from mouldiness or canker as well as from the grub. The remedy lay in the use of charcoal dust, purchased at a nominal figure from the charcoal burners, being the refuse from the bottom of the pit after the charcoal is taken out. This is spread to the thickness of about half an inch on the top of the Onion plot, after being manured and dug and scuffled in with the point of a five-tined fork, so as to mix the top soil and charcoal well together. Nothing more is done beyond attending to the crop in the usual way during the summer. The gardener referred to has practised it for six years, and has excellent crops of bulbs and no attack either from the maggot or mould. When he first tried the experiment he divided his Onion plot into two parts, one of which he dressed as above described, while the other half was left in the usual way, with the result that on the dressed half he had a good crop of sound Onions, and on the undressed portion a grub-infested, cankered crop. The following year he decided to try the remedy on a still larger scale, and therefore had the whole of a quarter prepared for Onions and divided into eight beds of equal size. Four of these were dressed with charcoal dust, the remaining four were not. The result was the same as before, the beds to which the dust was applied producing good clean Onions, while the other four were badly affected. The same gardener informed me that the use of charcoal had enabled him to overcome clubbing in Cabbages and Cauliflowers. At one time early Cauliflowers with him were out of the question, but after planting his autumn-raised stock of plants on ground which had been dressed with charcoal dust for the Onion crop the previous winter, he grew capital Cauliflowers, and yet had no attack of clubbing. I think the charcoal remedy worthy of a trial by gardeners who are troubled with grub and canker in their Onions. J.

Ferns eaten off (*Gypsy*).—Your Ferns were probably eaten off by the Black Vine-weevil (Otiorhynchus sulcatus), which feeds on the Fern-fronds and various other plants; the white worms were probably the grubs of the weevils. Of course, without seeing the insects I cannot be quite sure as to what they are. As to the grubs, I am afraid there is nothing to be done but pick them out from among the roots. Any insecticide that would kill them would injure the Ferns. The weevils only feed at night; they are nearly black, and not quite ½-inch long, or they may be the clay-coloured weevil, which is rather smaller than the other, and, as its name implies, of the colour of clay. Both kinds only feed at night, and hide themselves very carefully during the day. Lay the pots of Ferns on their sides on a white cloth while it is quite light, and after dark throw a bright light on them suddenly. If this does not make them fall on the cloth, search the plants well.—G. S. S.

Fly on Marguerite-roots (*Bristol Reader*).—It is not very easy to understand what you mean when you speak of a fly "which resembles a maggot," but from the context in your letter I suppose you mean one of the aphides which feed on the roots of plants, and which are often found on the roots of Marguerite Daisies. I should take the plants out of their pots and stand them in a bucket, in which should be placed one of the following mixtures: The extract from 6 oz. of Quassia-chips, 4 oz. of soft-soap, well mixed in 4 gallons of water; or ¼ pint of crude carbolic acid in 2½ gallons of water; or merely immerse the roots in plain water at a temperature of 130 degs. Fahr.—G. S. S.

ÆSCHYNANTHUSES.

THERE are about a dozen species of Æschynanthus in cultivation, and they are among the most serviceable of basket-plants for the stove. They are easily kept in health, easily propagated, and when well grown they flower freely at almost any season of the year. They are mostly natives of India and Malaya, where they grow in humid tropical forests, generally upon the trunks of trees along with Orchids and Ferns. The best of them were introduced by Messrs. Veitch, through their collector Thomas Lobb, about fifty years ago. They are not, however, so generally known as they deserve to be. We have grown them for the last eighteen years, and find them most useful as decorative plants, in addition to the interest they have for the botanist. With the exception of Æ. Hildebrandi, they require a tropical temperature all the year round, plenty of moisture, and a little shade. They do well suspended from the roof of a warm-house containing a mixed collection of stove plants, or in a tropical fernery or Orchid-house. They all thrive in baskets made either of wire or teak. These should be lined with thin slices cut from a peat turf, inside which should be placed a mixture of peat, leaf-mould, sand, and pieces of charcoal. Plants raised from spring-struck cuttings should be planted in this, and as they grow the stems of the slender species may be pegged about the sides of the basket. They should be dipped in water once a day, and when growing vigorously a little weak liquid-manure should be given.

They sometimes ripen seeds, which may be sown in the same way as those of Gloxinias. Æ. Hildebrandi requires the same kind of treatment as the others, except that it thrives in a greenhouse temperature, such a position as the roof of the cool Orchid-house being congenial to it.

Æschynanthus cordifolius was introduced from Borneo by Lobb about 1859. It has slender stems 2 feet long, fleshy, dark green leaves 2 inches long, and flowers in clusters at the end and in the leaf axils of the branches; the calyx is ½ inch long, broad, hairy, green; the corolla is 1½ inches long, tubular, wide-mouthed, hairy, and coloured deep red, with linear blotches of black and orange-yellow in the throat.

Æ. fulgens.—Introduced by Lobb from Moulmein in 1855. Stems stout and sometimes erect, so that the plant assumes a bush-like habit; leaves 3 inches or more long, fleshy, wavy; flowers in large terminal umbels; calyx bell-shaped, ½ inch long, with short triangular lobes, green; corolla club-shaped, 3 inches long, coloured bright scarlet and yellow, with a few linear blotches of black-purple.

Æ. grandiflorus was introduced from India by the Duke of Devonshire, and flowered at Chatsworth about 1840. It is the sturdiest of all the species, the stems becoming quite woody. I have seen good bushes of it bearing large numbers of flowers. The leaves are fleshy, the flowers are in large terminal clusters, the calyx smooth, green, ½ inch long, the corolla hairy, about 3 inches long, broadly tubular, constricted at the mouth, coloured scarlet and yellow, with black linear blotches.

Æ. Hildebrandi.—This pretty little plant was introduced to Kew in 1894. It is a veritable alpine, according to Mr. Hildebrand, of the Shan States, Burmah, who sent seeds and plants of it collected on the high hills in that country, where it forms dense tufts on the trunks of trees in very moist situations, and when in flower it looks like a cushion of scarlet velvet. It is quite at home in a cool greenhouse, its crowded, erect stems growing to a height of about 4 inches, clothed with green ovate fleshy leaves each 1 inch long and bearing a terminal cluster of four or more tubular flowers 1 inch long, coloured bright scarlet and crimson. It is easily propagated by division.

Æ. Lobbianus.—This was named in compliment to Lobb, who introduced it from Java in 1845. It is the best known, and perhaps, taken altogether, the best of all the species. The stems are elegant, drooping, and purple, the leaves bright green, and about 1 inch long; the flowers are in terminal corymbs, the calyx bell-shaped, 1 inch long, hairy, coloured dark purple, the corolla 2 inches long, tubular, curved, and coloured rich scarlet, with yellow markings in the throat. No collection of stove plants, Ferns, or Orchids should be without this beautiful basket-plant.

Æ. longiflorus was introduced from Java by Lobb in 1846. It is like Æ. speciosus in general characters, differing in its broader leaves and the deep blood-crimson colour of its flowers, which are 3 inches long, curved, and borne in terminal umbels.

Æ. obconicus is comparatively new. The stems are slender, trailing, or climbing, and hairy; leaves 2 inches long, bright green; flowers in pairs in the leaf axils; the calyx is singular in form, being broadly bell-shaped with recurved margin, the colour being deep crimson; the corolla is short with spreading lobes, coloured scarlet and yellow.

Æ. pulcher.—This was introduced along with Æ. Lobbianus, which it resembles, differing chiefly in its broader leaves, shorter greenish calyx and longer corolla, which is coloured rich scarlet and yellow. This plant is sometimes called Æ. Boschianus.

Æ. speciosus.—Another of Mr. Lobb's fine introductions from Java. The stems become woody and attain a length of about 2 feet, and they may be trained upright to stakes or allowed to hang from a basket. Very strong stems will produce as many as twenty flowers in an umbel.

Æ. tricolor was introduced from Borneo in 1857. It has slender drooping hairy stems, slightly hairy leaves each an inch long, and flowers in terminal clusters of two or three; the calyx is saucer-shaped and bright purple, the corolla an inch long, very irregular, with large lobes coloured scarlet with orange and black streaks. W.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2547—**Dwarf Nicotiana affinis.**—Can any reader of Gardening tell me where to get seed of a dwarf form of Nicotiana affinis, described as being exactly like the well-known form, but only 1 foot high?—M. P. Forster.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2548—**Heating small greenhouse** *(D. M.).*—We do not believe in heating greenhouses by flues. They are too parching and by no means so uniform as hot-water pipes.

2549—**Daffodils, etc., after forcing** *(Cornwall).*—You may plant out the Narcissus, but Tuberoses and Roman Hyacinths are seldom of any future use after forcing.

2550—**Creeper for London** *(A. C. P., Potter's Bar).*—We would recommend a Ceanothus or Rose Aimée Vibert (white). But unless you have some top ventilation, and especially if the recess faces the sun, you are not very likely to succeed. Grow in pots or a small box. The Passion-flowers might also be tried.

2551—**Removing fronds and leaves from Ferns** *(British Ferns, R D.).*—Leave old fronds and leaves as a protection to the crowns. That is the only reason why they should not be removed. The fronds form a natural protection, and in spring may be taken away.

2552—**Taking "Geranium" cuttings** *(Chiswick)*—Take off the young growths of your "Geraniums" in February. There is no gain in slitting the base of these, in fact, it often tends to early decay at that point. We would pot on the autumn-struck plants about the end of February. Your temperature is very suitable.

2553—**Treatment of "Geraniums"** *(Dummy).*—A temperature varying from 50 degs. to 60 degs. is very suitable for an ordinary greenhouse. Why not cut off the top 4 inches or 5 inches of your "Geraniums" and root these? Do it as soon as you have heat; you will thus increase stock and secure a better shaped plant upon the old stems.

2554—**Plants for greenhouse** *(Breck).*—You might try bulbs, potting these during August and September; also Zonal Pelargoniums that have been checked from flowering through the summer months. Cyclamen, Primulas, alpine Auriculas, and Genista fragrans are also suitable, but you will need a temperature of 45 degs. to 55 degs during winter.

2555—**Plants for cool frame** *(B. C.).*—In the first place, you cannot grow Smilax, Begonias, etc., in an unheated frame entirely; nor is it a very suitable structure for several of the subjects you name. Set the frame upon a raised bed of 18 inches or so, if to be unheated, and stand the pots upon a layer of sifted ashes. If heated, you will need 2 feet or more depth, and must arrange to have the bed at least a foot larger all round than your frame.

2556—**Green-fly in greenhouse** *(Cornwall).*—Fumigation is by far the best way in a house of mixed subjects. You cannot have used it rightly, if it failed to kill. At the same time, there is great danger in over-fumigation. You do not say size of your house, so we can only advise you to procure some sheets of McDougall's insecticide, kept by all florists. These contain full instructions, which, if carefully followed, will kill the aphides without injury to your plants.

2557—**Celosia plumosa grandiflora** *(W. W.).*—Like most other greenhouse annuals, Celosias will do in the open beds during an ordinarily warm summer. Sow seed in a temperature of 65 degs. early in April, pot on carefully, using a compost of turfy-loam and leaf-soil in equal proportions, and plant out as soon as we seem safe from frosts. It is most important to avoid frost, and not to plant out while the soil is still cold and wet. A little prepared compost is a great help, and well repays for the trouble.

2558—**Potting Lilium auratum for greenhouse** *(A Subscriber).*—Pot in March in well-drained pots of light compost, filling the pot only about two-thirds and barely covering the bulb. As they progress add pieces of turfy loam and well-decayed cow-manure. The roots will revel in this. Plenty of water must be given while in full growth. For outdoor culture, pot up in the same manner, keep rather cool, and turn out about mid-June or as soon as frosts seem gone.

2559—**Kitchen grate and greenhouse** *(Combination).*—To enable a kitchen grate to heat a greenhouse, the grate used should be one of the closed kitchener form, as in that way the fire-heat is so much more effectually utilised. The back and one side of the grate should be an ordinary cast-iron boiler, connected by pipes with the cold-water cistern and a closed iron cistern fixed several feet above the grate. From this receptacle a small steam-pipe should lead to the top cistern. Then from it should flow a 2-inch pipe, feeding a 4-inch pipe in the greenhouse, whilst the return should be contracted into a 2-inch pipe, and be carried into the bottom of the boiler direct. Of course, for the latter purpose the boiler must be a little below the return pipe level. Such an arrangement would, we think, give you a good heat. If one pipe were not enough, then have two flows and one return.

2560—**Moles in garden** *(Oxford).*—You are evidently confronted with a great plague of moles in your garden, and so long as these pests have the run undisturbed of the adjoining ground, and there breed wholesale, it is impossible for you to do much to repress them so long as they have the free access to your garden. You may catch a few with traps, or a professional catcher may be much more successful; but with a perfect warren close by it would be indeed difficult to free your garden of the trouble. Can you open a trench 2 feet deep all round the outside of your garden close to the fence, whatever it may be, and fix all round in the trench ½-inch wire-netting, as that would be, apart from a buried wall of concrete or other hard material, the best means of excluding the moles? Then you might manage, by trapping or watching them at work in their runs and throwing them out with a fork, to soon succeed in destroying them.

2561—**Rabbits in garden** *(Ibid).*—The need for wire-mesh of fair height to exclude rabbits from a garden surrounded by an open space is that these creatures will often leap to a height of 2 feet, especially when hard driven by hunger or fear. If you think 3-feet wire-mesh buried 6 inches in the ground to be too expensive, at least have 2½ feet depth, burying 3 inches only. Of course, it is desirable to bury the lower edge, and very firmly, too, to prevent the rabbits from crawling in under. You may both trap and shoot the creatures, but so very often it has happened that great mischief has been done before the rabbits are caught. If you can keep them out absolutely, so much the better. All the same, should any depredator get into the garden the gun should be promptly brought into use.

2562—**Summer cut-flowers for market** *(A. W.).*—It is rather difficult to give you a satisfactory reply. So much depends upon locality, soil, and other matters, that we can only give you a list of outside flowers likely to sell well, and also to grow satisfactorily: Carnations, Clove Pinks, Lilies, Aquilegias, Pyrethrums, Cornflowers, Wallflowers, Zinnias, Sweet Sultan, Gaillardia, Coreopsis, Campanulas, Dahlias, Pentstemons, Primroses, Stocks, Japanese Anemones, China Asters, and summer-flowering Chrysanthemums. These are a few of the different flowers which find a ready sale in the market, but everything depends upon the cost of production—whether you can make it pay you.

2563—**Outdoor cutting flowers** *(Fern).*—Both of annuals and herbaceous plants there is immense variety. Of the former, blue Cornbottle, yellow Sweet Sultan, several annual Chrysanthemums, Sweet Peas in great variety, Asters, Marguerite Carnations, branching Ten-week Stocks, Mignonette, Scabious, Candytufts, Indian and Chinese Dianthuses, Marigolds, Iceland Poppies, Calliopsis and Coreopsis, Gypsophila paniculata, Sunflowers, etc. And then of herbaceous or ordinary perennials: Violets, Pinks, Carnations, Doronicums, Sunflowers, Giant Daisies, Phloxes, Blue Thistles, Perennial Asters, Achillea The Pearl, Anemone japonica, Columbines, Coreopsis grandiflorum, Erigerons, Senecio pulcher, Gaillardia grandiflora, Iris in variety, Daffodils in variety, Everlasting Peas, White Mallow, various Œnotheras, and, indeed, myriads of other things. Besides, there are Roses blooming over a long season, Dahlias, especially the Cactus and Pompon forms, Pelargoniums, especially double Ivy-leaf varieties, Pæonies, Pyrethrums; indeed, there seems to be no limitation. Those who purpose embarking in flower culture for market sale should not embarrass themselves with too many kinds. Grow plenty of those they elect to have, and do them well. Also, they should look to have a succession extending over a long season. We find we have omitted early or autumn-blooming Chrysanthemums, of which large quantities of some half-dozen colours should always be grown.

2564—**Tomatoes and Cucumbers** *(Amateur).*—You will find very full instructions respecting Tomatoes in "Tomato Culture," by W. Iggulden, post free, 1s. 1½d.; address to the author, Frome, Somerset. We know of no book specially devoted to Cucumber culture; but these need very similar treatment as to soil, limitation of room for roots, training up under glass, thinning the shoots, and other matters that Tomatoes want, but having rather more heat and a damper, closer atmosphere. However, later put any questions as to matters on which you wish for information.

2565—**Forcing-pit** *(Joan).*—Your lean-to pit of 30 feet long and 6 feet wide should prove very useful, especially if the flue running through it works well, and gives a good warmth. You want some stout cross-pieces of wood placed some 6 inches above the flue to carry boards or even wattle hurdles. Over these should be laid turves—Grass downwards—and upon these placed some coarse turfy compost; or, if you prefer, first 12 inches depth of sweet leaves, and on those the soil. If you grow Cucumbers only, good turfy loam that is well-decayed is needed, put up in form of mounds along the centre, 3 feet apart; and when well warmed you could put out the plants into each mound. After these throw roots through the mounds you would have to add fresh soil, and finally give a layer of a few inches all over the leaves. You will find it needful for these tender plants to keep up a temperature of from 65 degs. at night to 75 degs. in the day. You could cover up the glass at night with mats. Cucumbers do not want too much root-room, but it is difficult to avoid giving

them plenty when planted out in this way in pits. You should have strong young plants ready to put out as soon as you have the pit ready and the soil is well warmed. With respect to Tomatoes, get seed of any good variety sown at once, and raise plants to put out that are 9 inches high, stout, and well leaved, and each plant singly in a 3-inch pot. The inner bed should be made up as before (with leaves); but it would be better to have some boxes, 12 inches wide and as deep, placed along the front of the pit just inside. Have them filled with good turfy soil, and then put out your plants into them at 12 inches apart. Some wires or laths should be fastened—one to each plant—across the frame, about 6 inches below the glass, and to these the plants be trained, keeping all side-shoots hard pinched. Such plants should, carefully tended, carry heavy crops during the season.

2566—**Pot-Strawberry-plants** (*Query 2*).—Your general treatment of your pot-Strawberries seems to be all right, and is such as is customary. Mildew is rather characteristic to some varieties, indicating that too much feeding and too damp an atmosphere is objectionable. Syringing is not needed, as the air of a close Strawberry-house is usually moist enough. Any manures, whether dry, to wash in, or in liquid form, should be given moderately, and not after the fruits begin to colour. When used later the fruits are apt to be very watery and ill flavoured. V. Hericart de Thury, though one of the best for pot forcing, never carries large fruits. Two or three are of fair size, but the rest are small. Thinning the produce of each plant down to about eight is good practice. Royal Sovereign and President always give finer fruits. Keep the plants as close to the glass as you can. Later, when the sun attains power, some air must be given, and more water is needed. If mildew appears again coat the pipes with sulphur paste and water; then fire up, and close the house for the night.

2567—**Utilising a greenhouse** (*Constant Reader*).—In your unheated greenhouse, lean-to, 10 feet wide, you will find that if you utilise the front for Tomatoes, what will thrive on the back wall will largely depend on how high you carry up your Tomato-plants. A Vine would hardly do there, as some little heat is desirable to produce good Grapes, even on a roof. A Peach-tree and a Nectarine-tree might do very well in the 20-feet run, as fruits would ripen well on the wall, especially on the upper portion. If you grow Tomatoes in pots or boxes, stood close along the front of the house, the plants being trained up to 6 feet high, that would leave 4 feet to admit sunshine to the back trees, which would do very well. Ere you would want to house the Chrysanthemums the Tomatoes should be over and the fruits on the trees gathered. Good varieties are Peach Royal George and Nectarine Elruge.

2568—**Marguerite Carnations** (*F. L.*).—This section of the Carnation tribe differs from others commonly grown, because they have a very marked annual habit in them. Hence, if seed be sown in the spring under glass, say, in February or March, in a shallow pan, it soon germinates. The seedling plants grow rapidly, and are soon ready to prick off thinly into other pans or else into shallow boxes. Or they may be put singly into quite small pots and grown on in a frame. Early in May, if ready, the plants may be put out into the borders, there to bloom. A similar sowing made in April, the plants being early in June put out into a cool border, will give plenty of sturdy ones to lift with balls of soil into 6-inch pots in September, and in these, if put into a warm greenhouse, they will bloom profusely all the winter. Seedlings give about 80 per cent. of double flowers in various colours, all very sweetly perfumed.

2569—**Seakale** (*Oxford*).—Seakale is perfectly hardy, and needs no covering up to protect from frost As you may not lift the roots, but must blanch the crowns where growing, do not cover them direct with manure of any sort, as the Kale will taste of it when cooked, and will come much discoloured. If you will not have Seakale-pots, the best course will be to heap over the crowns fine ashes in ridges or mounds 9 inches high, or else sand; or, failing both, then the soil, well broken up loose. Over any of these may be laid long litter to help exclude air. If ashes be used, much may be removed after the cutting is done. It is a good plan to cut the stems close to the ground; then, after all the heads are cut, to spread about the litter, add a dressing of manure and fork it in deeply before new crowns are made. That is the best you can do with your permanent Seakale.

2570—**Potatoes for exhibition** (*Welsh Amateur*)—The book to which you refer, "The Potato in Field and Garden," is by W. J. Malden, and may be obtained of the *Mark Lane Express* Office, 150, Strand, London, price 3s. 6d. This essay, however, hardly touches on the subject of exhibiting. It is really more of an agricultural character. As to the back numbers of this paper or the *Garden* furnishing the information you desire, it may be difficult to say, but in a week or two we will insert a paper specially dealing with the subject, which you can look for. There is yet ample time, as planting cannot take place for some time yet.

2571—**Heating vineries** (*Rusticus*).—As the hot water has to travel 40 feet underground from the boiler until it reaches your houses, it seems so very obvious that there must be immense waste of heat under such conditions, although matters would probably be worse were the pipes above ground, as then the air would usually be colder than the soil, which, once warmed, would not cool so easily. It seems unfortunate that your boiler is so far away. Were the furnace about halfway along the the range of houses close behind, and two sets of flows and returns heated one half the range each, then a boiler one half the size would do the work of heating far better and at one half the cost. Whether there is any defect in the setting of your boiler it is not possible for us to say, but the range is not extensive. We should prefer also a continuous flow in the pipes, without the intervention of a valve-box, if practicable.

2572—**Lean-to pit** (*A. J. S.*).—Before attempting to force Asparagus roots in your heated lean-to pit, the question is: Have you plenty of stout old ones to put into it, and enough for succession? If so, put on to the bottom of the pit a few inches of garden soil. On to that lay your Asparagus roots as close as they can very well be crowded. Fill in fine soil about the roots; then more, covering the crowns 4 inches or 5 inches. Give a good watering, and then apply warmth gently at first, making it rather stronger after a few days. Still, a temperature of from 50 degs. to 60 degs. should suffice. The pit must be well covered with mats or litter to keep in the warmth and exclude light. If you fill one-half the pit at once and the other half three weeks later, you will get a good succession. The roots after forcing are useless.

2573—**Fruit-tree roots** (*Mrs. W.*)—All tree roots have the same functions, but strong, coarse roots invariably tend to produce wood growth most freely, whilst fibrous or small roots tend to fruit production. The object of root-pruning is by making clean cuts through these coarse, wood-making roots to prevent that former production. Being severed, they commence to throw out small fibrous roots, and thus trees hitherto barren soon commence to produce fruit. Every small fibrous root in the pruning process should be carefully preserved, and in refilling the soil be kept rather near the surface than buried deep.

2574—**Black Currant buds** (*J. P.*).—We have closely examined your Black Currant buds sent with a magnifying glass, and have found no evidence of white mite or any other trouble. The buds are all hard, fully closed, and seem to be in perfect health. They are rounder than is ordinarily seen on most varieties; but evidently yours is one that produces rather round than dark-pointed buds. When the white mite is present then the buds are broad and much opened. It is then quite easy to see the mite nestling between the scales.

2575—**Heating an outside Vine-border** (*M. M.*).—You have just started heating your vinery, which has an outside border, and you wish to heat that border also? That is not practicable or desirable. With the present weather, the soil should not be at all cold, and it should be remembered that, except when hard frozen, roots are always active, as those of your Vines are in the border; but taking advantage of mild weather, and especially after the sun may have been shining on the border for a few hours, cover up 6 inches deep with dry leaves, laying hurdles over to keep them together, or else long straw-litter, Fern, or Heather. That will serve to box in the warmth now in the soil. To place on the border a thick body of manure which would heat for a week or two, and then suddenly become cold, wet, sodden, would but be doing more harm than good. Cover up the Vine-stems.

2576—**Malmaison Carnation** (*Malmaison*)—The fact of your using more heat than was the case formerly, when good flowers resulted, should surely point out your error. Sixty degs. in the day and 45 degs. to 50 degs. at night is ample. All Carnations object to hard forcing, and if one wishes to have them earlier it is merely a question of early layers or pipings. Do not keep the house too damp, or spot and decay will set in. Do not syringe overhead, but avoid a dry, parching atmosphere. Such mild weather as we have had, with the exception of Christmas week, will make ventilation a necessity.

2577—**Dahlias** (*S. Fletcher*).—You will obtain the best results by starting the old plants in heat in March. Cover the tubers in a bed of light soil up to the crown, and give a light watering occasionally with luke-warm water. When the young growths are a few inches in length, they should be taken off with a heel of the old wood attached, and inserted singly in small pots, and plunged in a hot-bed. Water overhead with a fine rose water-pot now and again. It will be necessary to shade them from the sun for a time, and, when rooted, they should be hardened off and potted on in good fibrous loam.

2578—**Tomatoes in cool-house** (*Amateur*).—Provided the plants are not started too early, any variety of Tomato will do well in a cool-house. Equally any variety, no matter what its general character, cannot be induced to grow in a cool-house until the temperature is naturally raised by sun-heat. If you sow seed in a pot or pots early in February, stand them in a box a little deeper than the pots, and cover over with a large pane of glass. Growth will be quicker and stronger than if the pots were not so protected. Growth would be slow, but it would be sure, and the plants would come sturdy. Get them into small pots singly when 3 inches in height. For the fruiting-pots or boxes the best soil is good decayed turfy-loam three-parts, the rest being old hot-bed manure and leaf-soil. Failing this, use the best garden soil with the same manure, and some sand added. Good varieties are, of ribbed fruits, Magnum Bonum and Conqueror, both heavy croppers; or, if smooth fruits, Challenger, Polegate, Duke of York, or Ham Green Favourite; all good croppers and of excellent quality.

2579—**Palms, Kentias, Cactus, etc.** (*Flint*).—Aspidistra lurida variegata frequently produces leaves of the normal type—viz., green. Over-luxuriance is often the main cause. We seldom see a large-sized plant well variegated. One of the best manures for the Palms, etc., you name is obtained by dissolving an ounce of guano in a gallon of water, and applying once a week. The Cactus No. 1 appears to be a variety of Phyllocactus; No. 2, an Echinocactus. We cannot give names of florists' varieties from so small a portion. Both flower, and enjoy a warm, dry position, fully exposed to sun. Many varieties of No. 1 are specially showy, having flowers 6 inches across. A sandy loam, with a little powdered brick and charcoal, makes a suitable compost.

2580—**Growing Roses, Grapes, etc.** (*A New Reader*).—In our last volume we gave several illustrated articles upon amateur propagation, and have always endeavoured to have subjects treated in as simple a way as possible, and you will, we trust, find what you need in future issues. Your house is small for Grapes and Roses combined; nor would you be likely to succeed with Grapes without some degree of artificial heat. Roses in pots, Zonal and Ivy-leaved Pelargoniums, Fuchsias, Abutilons, Hyacinths, Narcissus, and Tulips, also Cinerarias and dwarf-growing Chrysanthemums, are all suitable for your house; but it would be doubly useful if heated by one of the small stoves advertised in these pages. By perusing our articles from time to time you will find each subject treated upon in due season.

2581—**Garden manures** (*J. R. H.*).—We are obliged for your reference to book on artificial manures; but, all the same, it is so very difficult to recommend any that are absolutely reliable when those who profess to experiment with these manures on various crops for the purpose of forming definite conclusions present very contradictory results, and some others write books to boom certain special manures. What reliance can be placed in them? Nothing in horticulture has been so unreliable as treatises on manuring. We do not advise the specific manuring of any crop with any one particular manurial element. Soils differ so much, so also do crop requirements, and the best average results have usually been obtained when superphosphate and potash in equal proportions are applied at the time of sowing and planting, and nitrate of soda or sulphate of ammonia after growth has commenced. Deep culture, some animal manure, and good summer cultivation then give good crops.

2582—**Earthworms** (*Henry*). — Ordinary earthworms are, as a rule, serviceable in soil, as they do much to draw into it vegetable matter, and also pass soil through their bodies, excreting it later, and thus rendering it more fertile. But you seem to be afflicted with an excessive number of worms, and would like to destroy some of them. The best thing you can do is to give all your garden at night, when the weather is dull and quiet, a smothering of fresh slacked lime. That may kill many of the worms at once, and if the lime be next day forked in, it will help to sweeten the soil. The free presence of these worms rather indicates sourness of soil and too much of vegetable humus or matter that needs liberating, so that it can be utilised by crops. A good dressing of fresh soot applied later will also do good. You must not hope to destroy all the worms, but you may many. Use fresh lime freely about green crops at night The worms and slugs will soon retreat. No harm will be done to your Vine-roots.

2583—**Joss Lily after flowering.**—I should be glad if you could tell me if I can make use of the bulbs of the Joss-flower (Narcissus Tazetta) for flowering next year, and, if so, what is the best method to follow? I have them growing both in pots and in water.—O. C. W.

*** *The bulbs are valueless, so throw them away.*

2584—**Christmas Roses.** — "Mrs. R." has had Christmas Roses under lights for ten years. At first they did very well, but now there are hardly any flowers, and these are very bad. Should she break up and move the plants? It is a warm soil in a kitchen garden.

*** *We think it would be better if you gave your plants a liberal supply of liquid-manure when early spring growth is being made. The Hellebores are not very partial to disturbance.*

2585—**Hymenocallis macrostephana.** — The above plant is not down in the catalogues of the leading English horticulturists, as far as I can make out. Would you kindly say if you know it and where it can be obtained?—W. W.

*** *This is a stove bulbous plant, growing about 2 feet high. It flowers in umbels of six to eight blossoms, is sweet-scented, the tube 3 inches long and pale green; the rest of the blossom is white. Any large firm would supply you. It was introduced in 1879.*

2586—**Flowers in a hall heated by a coke stove.**—The flue of my stove runs up the chimney. The hall is large. Would you kindly say if such flowers as Indian Rhododendrons and Orchids would do there for a week or ten days in the winter when they are in blossom?—W. W.

*** *There is no reason why plants in flower should not stand a reasonable time in your heated hall; but you must be careful if frost sets in, and keep the fire going a little longer at night.*

2587—**Greenhouse flowers for winter.**—Will you please help me through your journal? I have two greenhouses (intermediate). What can I grow for good cut-blooms from November to February? This last year I have grown Chrysanthemums, but I find that they occupy nearly all my ground for standing out during the summer, which is a consideration, seeing that I have only a small piece, the rest of it being covered by the houses. I grow during the summer Stephanotis, Dipladenias, Tuberoses, Hoya carnosa, and a few Orchids, but am at a loss during the winter if I do not grow Chrysanthemums. Therefore I should be much obliged if you will aid me through your paper?—DERBY.

*** *We can recommend nothing better than Chrysanthemums during winter. You might include Narcissus, Tulips, and other bulbs, such as Freesias; but these would not give you the quantity of flower secured from well-grown Chrysanthemums, especially at the dates you name. You could have a brilliant display with the finer varieties of Zonal Pelargoniums, concerning which several notes have recently appeared.*

2588—**Clematis Jackmani.**—"C. S. H." is anxious to know what he should do with his Clematis Jackmani? He has several plants growing on the house, one year old, which flowered until November. Should he leave them, or cut them down? Or should they be heavily pruned, and when? They are growing with Rose-trees, which are well manured.

*** *This Clematis is practically a herbaceous perennial. Cut down now, and place a little ashes and soot over and around the crown. This is to keep slugs away—pests which eat the eyes of young growth with avidity and often do much damage. It is a capital companion to climbing Roses, and the same treatment as regards manure will suit both.*

2589—**Greenhouse collection for show.**—With reference to former query on above subject, to which you replied that I did not give sufficient data, I now copy from the schedule: "Collection of hot and greenhouse plants in pots. Date of show, third week in July. Cultivation and variety to be taken into consideration." I have an ordinary greenhouse (heated) and small Fern-house, but no stove. Could you kindly give me some idea of what plants to stage, exclusive of Zonal Pelargoniums, Fuchsias, Cannas, and Ferns? I also wish to compete in a class for flowers in pots—"'Geraniums'—best six foliage." Please give recommendation for these?—BE.

*** *Besides those you name you will find these good: Francoa ramosa, Tuberous-rooted Begonias, Gloxinias, Hydrangeas, Cypripedium insigne, Pandanus Veitchi, Aralias, Seaforthias, Caladiums (especially C. argyrites), the last and Isolepis gracilis being most useful for the edges. Do not forget Ferns in variety, which are so very numerous we cannot name them here. You would do well to look at various collections and make notes for future use. The following are nine good foliaged Zonal Pelargoniums—grow all, as it is unlikely, if confined to six only, you will get all in first-rate form at the same*

date—Mr. Henry Cox, Mrs. Walters, Prince of Wales, Sir R. Napier, Enchantress, Mrs. Miller, Eva Fish, Zulu, and Boule de Neige.

2590—**Sowing Smilax-seed**—Would you kindly tell me when Smilax-seed should be sown? Also the best kind of soil to use, and what treatment to give the plants? —BLUE TIT.

*** *Sow in March in a temperature of 65 degs. to 70 degs., using a light and loamy compost. They like plenty of water when in full growth, and thrive well when turned out into boxes or borders of prepared compost, training the long, slender growths to strings or wires.*

2591—**Charcoal for potting soil.**—In reading GARDENING every week, I see that charcoal is recommended to be mixed with the potting soil for soft-wooded plants. I find charcoal rather expensive. Would coke breeze, which is the dust, answer the purpose of giving colour, as I want something to give colour? Any information from you or your readers will greatly oblige—A READER FROM THE START OF GARDENING ILLUSTRATED.

*** *Coke breeze will not answer the purpose of charcoal and has no beneficial properties. Charcoal is so indestructible that one can make use of it over and over again, and, of course, this much reduces its expense.*

2592—**Lilium auratum.**—What sized pot should these bulbs be planted in, and how deep in the pot should they be, as roots grow out of the flower-stem an inch or so above the top of the bulbs? What kind of soil is the best? —M. K. A.

*** *This depends upon the size of bulbs. If a large one, an 8-inch pot is not too much. Give good drainage, and use a coarse compost of loam, leaf-soil, and well-decayed cow-manure. If the pot is two-thirds full at first it will be ample, and will allow of more compost being placed around the stem as new roots form. They will need a lot of water while in full growth, and weak liquid-manure may be given to advantage.*

2593—**Moss on lawn.**—I have a lawn well dressed, on which grows a lot of Moss during the autumn. I have tried manure, thinking the soil poor. I have also used soot and lime, and still the Moss grows. Can you recommend anything to prevent it? Is lawn-sand any good?—J. W.

*** *If well manured, Moss should not thrive upon a properly drained lawn. Yours is probably overshaded by trees and robbed by their roots. Give a few dressings of fresh loam, with a little lime, and dredge this in. Four or five slight dressings would probably do a great deal of good. In the meantime, rake off as much Moss as possible.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*M. D.*—The name of the leaf is Aspidistra lurida. You have probably kept the plant too wet at the root. Stagnant moisture is certainly harmful, as it rots the roots. It would be as well to ascertain the condition of the soil.——*F. D.*—1, Pilumna fragrans; 2, Cypripedium Spicerianum.——*F. O.*—1, Small Navel Orange—not grown sufficiently; 2, Pilea muscosa; 3, Panicum variegatum; 4, Tradescantia zebrina; 5, Eulalia japonica; 6, Aspidistra lurida variegata.——*G. W.*—1, Daphne indica; 2, Garrya elliptica.——*P. Deal.*—1, Adiantum macrophyllum; 2, A. concinnum latum; 3, A. decorum; 4, Phlebodium aureum; 5, Justicia probably, but difficult to tell from a poor leaf; 6, Too poor. Please send better specimen; 7, Begonia Dregei; 8, Dracæna Lindeni; 9, Iris Pseud-acorus variegatus—variegated variety of our Water Flag; 10, Kindly send in flower.——*T. N. F.*—The larger flower is Cattleya labiata; the other, Odontoglossum Rossi majus.——*H. J.*—1, Acacia dealbata; 2, Rhyncospermum jasminoides; 3, One of the Sempervivums; 4, Epiphyllum truncatum. ——*Lavender.*—No. 1 is a Datura, but we cannot say for certain which variety, as the flower was crushed; 2, Taxus baccata; 3, Thuja Lobbi; 4, Retinospora obtusa; 5, Thujopsis dolabrata variegata; 6, Cotoneaster Simmonsi.——*A. J. R., Linceln.*—Abies pectinata (Common Silver Fir). It is a native of the mountains of middle Europe, and has been cultivated in British gardens since about the year 1600.——*A. D.*—Cacalia (Kleinia) articulata (the Candle-plant).——*T. C. Amateur*—We are very pleased to help you. No. 1 is Dracæna gracilis. Your plant is in a bad state of health, and as it is 4 feet high, we have no doubt it is bare of leaves at the bottom. There are several things which might cause the points of the leaves to die as the specimen sent. Yours is probably old age, want of sufficient water, and moisture being allowed to hang at the tip for a long time. It is of little value when in this condition, and we would cast it away, or hand over to a friend with a heated structure. 2, A Lily; probably the African Blue Lily (Agapanthus umbellatus). Keep it fairly moist, and, if we have named it correctly, you will have a good show of pale blue flowers next summer. A cool-house will do for this. 3 is an Echinocactus. Yours is only grown for its quaint appearance. Do not cut it, and keep rather dry. 4 is a Phyllocactus, and needs the same treatment as No. 3, although so very much stronger in growth. This makes a good window plant. Propagate by rooting side growths in a very sandy compost, and scarcely ever watering. July is a good time. Keep it in the sun as much as possible. 5, Crassula coccinea, a scarlet and orange blossom. Requires heat—50 degs. to 60 degs is suitable. Propagate by points of growth in summer in the same way as No. 4, but in a greenhouse. 6 is one of the Sedums, we cannot say precisely which. Treatment and propagation same as No. 5.——*M. C.*—The flowering shoot is Veronica speciosa; the other plant, Andromeda polifolia.

Name of fruit.—*J. G. H.*—Crimson Quoining.

Catalogues received.—Messrs. J. Laing and Sons, Forest-hill, London, S.E.—*Vegetable and Flower Seeds, Begonias, etc.*——S. F. Richmond, Chrysanthemum Nurseries, Ossett.—*Chrysanthemums*——W. J. Godfrey, Exmouth, Devon.—*Choice Chrysanthemums.*——Messrs. Chas. Sharpe and Co., Sleaford.—*Standard Seeds.*——Messrs. J. R. Pearson and Sons, Chilwell Nurseries, Notts. —*Garden Seeds, Chrysanthemum Catalogue.*——Mr. W. Welsh, Rush Green, Romford, Essex.—*Seeds.*——H. H. Groff, Simcoe, Ontario, Canada.—*Cannas, Gladioli, Clivias.*——Messrs. Toogood and Sons, Southampton.—*Garden Seeds.*——Messrs. Fidler and Sons.—*Seeds and Seed Potatoes.*——Messrs. Wm. Paul and Sons, Waltham Cross, Herts.—*Seeds.*——Messrs. R. Veitch and Sons, 54, High-street, Exeter.—*Seeds.*——Messrs. Wm. Samson and Co., Portland-street, Kilmarnock.—*Seeds.*——Messrs. Sutton and Sons, Reading.—*My Garden Diary, 1898.*——Messrs. Armitage Bros., Ltd., Notts.—*Seed Annual.*——John Forbes, Hawick, N.B.—*Seed Catalogue.*——R. Sydenham, Tenby-street, Birmingham.—*Special Price List for 1898.*——Messrs. Barr and Sons, 12 and 13, King-street, Covent-garden, London.—*Seed Guide.*——Messrs. Olibran and Son, Market-street, Manchester.—*Garden Seeds.*——Mr. R. Sydenham, Tenby-street, Birmingham.—*Vegetable and Flower Seeds*——Mr. W. Bull, King's-road, Chelsea, London.—*Seeds.*——Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.—*Vegetable and Flower Seeds.*

LAW.

Servant's claim for damages for wrongful dismissal.—A gentleman engaged by correspondence myself and wife, myself as gardener and to be generally useful and my wife as plain cook, at the yearly joint wage of £30, with board and lodgings and as he told me I was to bring no furniture, I broke up my home. He sent me £1 for travelling expenses, and on December 8th we went, as arranged. He received us cordially. In the morning, after the master had his breakfast, he sent for me and told me that I was not suitable, and that he had ordered a fly to take myself and wife to the station, and he gave me 20s. for expenses, but refused any explanation. I asked for 30s. for wages, but he refused to give anything more. Can I claim damages?—A. F.

*** Yes; you may claim a month's wages in lieu of notice, and, as your master gave you £1 to defray your expenses away, you may recover the balance of 30s. from him in the county court, and he will have no defence.

A gardener's apprentice (*Anxious Gardener*).—It seems doubtful whether John was bound to serve as an apprentice and to be taught the trade of a gardener, or whether he simply entered into an agreement to serve at a quarterly wage. On the facts stated it almost seems that the contract (if there was one) to teach was not fulfilled, but that did not give John the right to go away on his own business in his master's time. John was told that if he continued to do this he would have to clear out, and so he cleared out, and on these facts I think John has no claim against his master, although it is possible the gardener or his master may have a claim against John.—K. C. T.

A gardener's notice.—Last March I accepted a permanent situation as a gardener at a weekly wage, with cottage in the gardens. On Sunday, December 19th last, my master gave me notice to leave on Saturday week, January 1st. Is the notice legal, or am I entitled to a month's notice? The wages are paid on a Sunday.—P. J. B.

*** You are entitled to a month's notice, if there was no express contract for some shorter notice; and if your master has already compelled you to quit, you may recover three weeks' wages in the county court. The fact that wages are paid on Sundays is of no consequence, neither is it of real moment that you are engaged at weekly wages.

Rent payable in advance.—Two years ago I took an allotment garden and paid half a year's rent in advance. We had no written agreement nor any verbal one, except as to the rent. I paid rent in advance for the next three half years, but was unable to pay the last rent in advance, and the landlord then posted at the entrance to the gardens notice that the garden occupied by "G." was to let. Subsequently I tendered him the rent, which at first he declined to receive, but ultimately accepted. Will you tell me: (1) Can he legally demand the rent in advance? (2) If the rent be not paid, can he legally re-let the garden? (3) If so, what is the legal way to do it? (4) What notice should be given by either side to determine the tenancy? —G.

*** (1) Rent cannot be demanded in advance unless there has been a contract to pay it in advance. A verbal contract is sufficient, if it can be proved; and the fact that you paid rent in advance during four half years is conclusive proof that you entered into such a contract. (2 and 3) Strictly speaking, the landlord cannot re-let the land until the tenancy is determined. He may, of course, offer it, and actually let it, but you can still keep possession, and may treat the new tenant as a trespasser. Non-payment of rent does not of itself put an end to a verbal tenancy. In many cases a landlord does re-let the land and the tenant acquiesces; sometimes because he does not know his rights, and sometimes because he is glad to be saved any further trouble, as if he continued in occupation the landlord could distrain as soon as there was anything to distrain. (4) If you took the land by the half year, half a year's notice terminating with either half year is necessary. If you took the land as a private garden, but on a yearly tenancy, half a year's notice, expiring with a year of tenancy, must be given; but if you took it on a year's tenancy, and occupy it as a market garden or as an agricultural holding, a year's notice is necessary.

Market garden held on lease.—Four years ago I took a piece of land on a lease for the term of nine years, and, with the written consent of the landlord, erected some glass-houses. I now want to remove from the holding and either let or sell my greenhouses. How will the Market Gardeners' Compensation Act affect my tenancy, if I remain and continue to use the glasshouses for market garden purposes only?—ENQUIRER.

*** Should you continue in occupation until the expiration of your lease you will be able to claim from your landlord under the Act in question compensation for fruit-trees and fruit-bushes permanently set out, for Strawberry-beds and for Asparagus-beds, and other vegetable crops, and for the erection or enlargement of buildings for the purpose of your trade as a market gardener. You will be able to remove fruit-trees and fruit-bushes planted by you, but not permanently set out. If you wish to quit the holding you had best arrange with your landlord to take the holding off your hands, but if he refuses, you may either assign the lease or sub-let the place.—K. C. T.

Concreting floor of greenhouse.—I intend to concrete the floor of a greenhouse, 12 feet by 8 feet. Would you kindly give me the quantities and materials I shall require? I have prepared the floor for the reception of the concrete with broken brick, rubbish, etc. As the house stands now it is a tenant's fixture. Would laying down the floor in the manner intended give the landlord any claim on it?—IGNORAMUS.

*** We do not profess any knowledge of Irish statute law, but it may be said that if the greenhouse stands in a private garden the concrete floor will be a landlord's fixture, although the character of the greenhouse itself will not be altered, and it will remain a tenant's fixture if it is now one. For a floor of 96 square feet you will require about five bushels of cement and about two cubic yards of broken brick, rubble, sharp gravel, etc. I gather you have plenty of this on hand, but all dust and ashes should be removed, and the pieces should be of varying size and as angular as possible. You will find it to your advantage to employ a bricklayer rather than do the work yourself. The last inch should be a layer of sharp sand and cement, mixed in equal quantities, and smoothed perfectly level.—K. C. T.

BEES.

ENEMIES OF HIVE.

WEAK colonies of Bees often suffer much from the ravages of the larvæ of the wax-moth, which will in some instances work through the combs, pollen, and brood, consuming these, and leaving a dirty silken film in all directions, to the utter ruin of the stock. On obtaining admittance to a hive the wax-moth deposits a large number of eggs in every available crack or crevice, and sometimes on the combs not covered by Bees. The worm attains its full growth in about three weeks, when it seeks a secure place within the hive wherein to spin its cocoon—by-and-bye to emerge a perfect-winged moth. The indications of the presence of larvæ in the hive are fragments of wax upon the floor-board, mixed with little black specks. Upon a search being made the larvæ is mostly found between the quilt and the tops of the frames—in the case of skeps between the edges and the floor-board. All old combs should be melted down as soon as

done with, for if left about or allowed to remain in unused hives they are very liable to be taken possession of and destroyed by the wax-moth and its larvæ, to the increase of one of the worst of Bee pests. During the winter months the Blue Titmouse is at times very busy about the hives in search of Bees. Taking his station upon the alighting board of a hive he will tap with his beak till a Bee appears in answer to the knock, when he is immediately snapped up and carried off to a convenient spot, such as the roof of a neighbouring hive, to be consumed after the removal of his head, wings, and sting by his captor. Where these little birds prove troublesome about an apiary, it is a good precaution against their depredations to place pieces of wire-netting of small mesh upon the alighting board, which will prevent them getting near enough to tap at the entrance. Mice will, at times, take up their quarters in hives, and destroy a quantity of comb, besides robbing the Bees of their stores; they can, however, be excluded if the entrances be contracted. If but ⅜ inch high mice will be excluded, unless they gnaw their way through, although they rarely attempt this in the case of wooden hives—it is usually the old-fashioned straw skep with a large entrance that these little pests use as a winter retreat. Dampness is a deadly enemy to Bees, and all causes of dampness should be removed as soon as discovered. Roofs and coverings of hives should be examined from time to time, and damp quilts exchanged for dry ones. Foul brood is, however, the worst enemy the Bee-keeper has to contend with, for, being infectious and spreading so rapidly, a whole neighbourhood may become infested in one season, while great perseverance and constant attention is required to eradicate it. A colony attacked by this disease rapidly dwindles and dies out from its inability to rear brood. Bees of other stocks pilfer the honey, and so the infection is spread. Being of a fungoid origin, it is necessary to destroy the germs, or arrest their growth, which may be done by the use of salicylic acid, and every possible endeavour should be made to stamp out thoroughly a disease of so formidable a character. All hives from which Bees have died of foul brood should, before being again used, be thoroughly scalded and cleansed, and washed well over with salicylic solution, made in the following proportions: Salicylic acid, 1 ounce; soda borax, 1 ounce; water, 4 pints. The safer plan is to destroy all combs, and to well wash the frames, and furnish them with foundations for future use. To check the propagation of foul brood by preventing the development of any germs of the disease which may be present, it is well to thoroughly scald and cleanse all hives, frames, and floor-boards before using them a second time, painting them over with the salicylic solution. Colonies found to be suffering from dysentery should be provided with a fresh, clean hive, the soiled combs exchanged for unsoiled ones containing sealed stores, and candy supplied, taking care to leave all dry and warmly packed.

POULTRY.

Poultry questions (*S. W.*).—I am sorry to have been so long replying to your queries; but the delay has been unavoidable. You are quite right in supposing that I consider it necessary—in order to procure an abundance of eggs—to start with two pure breeds, and to begin again each year, rather than to breed from the cross. Supposing you take the Wyandotte hen and the Andalusian cock, you may rest assured (1) that the eggs from the cross-bred pullets will not be white, but more or less tinted. (2) If you want really strong chickens, I should only advise some ten hens or so with the one cock. (3) The strongest and largest chickens are bred from hens more than one year old; but, supposing you can procure strong birds of either sex hatched from March to April, 1897, you ought to be able to get really good chickens in March and April, 1898. (4) There are, as you say, several varieties of Wyandottes, but the white is often considered the best all-round kind. I do not go so far as this, because I look upon laying qualities as a matter of strain rather than breed. You should satisfy yourself on this point before you buy. (5) No, I do not recommend the sitting hens to be kept by themselves when laying, unless it is necessary for other reasons. During sitting, of course, they should not be in places frequented by the laying stock. For sitters, you cannot do better than breed from Cochin hens crossed by an Indian Game or a Dorking cock. (6) Wright's "Practical Poultry Keeper," published by Cassell, is a useful work; but, in these days, if you wish to become posted up in the breeding, etc., of any particular breed of Fowls, it is best to procure a copy of the works specially devoted to such breeds. These can be got through the fancy press; but you must remember that the object of such publication is to promote the welfare of poultry from the exhibitor's standpoint. We, in GARDENING, take the utility standpoint.—DOULTING.

Hens not laying (*W. B. Henderson*).—Your query, too, has been forced to stand aside. No cause for your failure to obtain eggs can be assigned, unless the birds are bred from stock belonging to bad laying strains. All the pullets related to the Game or Dorking breeds I should look upon as bad layers, and I am not at all surprised to hear that they have disappointed you. The Leghorns should have done better; but did they, owing to their being so early hatched, lay in the summer, and then passed through an autumnal moult? My Leghorns—May hatched pullets—were on the nest in November. You cannot rely upon table breeds being good layers, nor exhibition strains of good laying breeds, because egg-production is not encouraged in such cases. All that you can do is to give meat scraps—liver, etc.—twice a week, and wait. There is really no recipe for obtaining winter eggs from unwilling hens.—D.

Diarrhœa in sitting hens (*Popsy*).—It is not an uncommon thing for hens to be affected in this way when they are sitting; and I consider the cause to be some error in feeding, or allowing too much water. When your hens are set you should feed once a day only—use hard corn, such as Indian Corn or Barley—but not wheat. Give them some grit, also allow them access to water; but take care they do not have too much. I take it your hens are otherwise healthy. Please write again if the trouble continues.—DOULTING.

Hens not laying (*Stanhope*).—Your wet run is against good laying, either in the winter or summer. Nothing is so injurious to Fowls as wet, and this applies either to their feet and legs, or to their backs. I am sure it will pay to drain fowl-yards, wherever there is a good outfall for the water. The simplest way is to use the ordinary drain-pipes. These would be laid just below the surface, and the rain would then be carried off as it falls. If your yard smells badly it would seem that the sanitary conditions are not so good as they might be, and the ground should be dug over. I am not partial to cinders—they are unsightly, and do no good. I do not wonder at your 1896 hens taking a rest. They are not old, it is true, but such Fowls cannot be depended upon to lay from November to February, inclusive.—DOULTING.

Ailing Fowls (*A. H. Lewis*).—I should like you to give some further particulars respecting your stock and the runs. Do the birds waste at all before they drop off—that is, are they in poor condition when they are picked up? Again, are they overcrowded, and are the runs kept in perfect order as regards cleanliness? Is diarrhœa present? The symptoms at present point to some lung or liver disorder, and if the latter, it would appear to be hereditary.—DOULTING.

Profit from poultry (*A. H. B.*).—I really dare not venture to say how much I consider could be obtained in the shape of profit from poultry-keeping on four acres of land, provided the concern were really well managed, because my figures would be at once accepted by many who would like to secure such a profit, but who are no more capable of working such a business than I am of flying to the moon. As you may have gathered from my notes, I believe it to be possible, wherever good layers are kept, for the hen's food to represent only about one half the value of the eggs she produces in the course of the year. This would leave a good margin for profit after interest on capital invested and labour had been paid for. Chicken-raising, too, might be made a very profitable undertaking if those markets between December and July alone are catered for. At other seasons chickens are too often a complete drag. Stock Ducks are expensive birds to keep, and soon run away with an enormous amount of food. Aylesbury Ducks, to my thinking, are the best, but if you cater for the Christmas market the Rouens would perhaps be preferred. I should add that it would be a mistake to stock four acres of land with laying stock if only three pens were to be made. You want at least ten times that number. The great mistake made by the bulk of our poultry-keepers is that of keeping too many Fowls in one lot. Four lots of 25 each will lay quite double the eggs which would be forthcoming from a lot of 100. This seems difficult to account for, but I fancy the explanation lies in the fact that the 100 birds spend the whole of their time upon the space which would be well stocked with one-fourth the number, and this means overcrowding.—DOULTING.

Lame Leghorn cock (*S. S.*).—I should say your cock must be suffering from rheumatism. It is most unusual for a bird of this breed to go wrong in his feet or legs. Your best plan is to well foment with warm water, and then thoroughly rub in some Elliman's embrocation.—DOULTING.

BIRDS.

Breeding Linnet Mules (*J. V.*).—The yearling Linnet should be paired with a two-year-old hen Canary. The cock Linnet is, as a rule, very attentive in the rearing of the young, and results from pairing with a hen Canary are usually very satisfactory, the offspring proving good songsters, their harmony generally being very melodious. Keep the birds apart in separate cages till the middle of April, when they may be put together in the breeding cage and supplied with materials for building. No; a Linnet should not have white legs. You say your bird is "one of this year's breeding"; if it was bred in confinement it is probably a Mule, and if so it will not breed with the Canary. It is very rarely that Linnets breed among their own species in a state of captivity.

Birds—correction.—In the article on "Birds," January 1, p. 646, instead of "no gesture of impatience or note of complaint is seen or heard from it," read "no gesture of impatience is seen, no note of complaint is heard from it."

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GARDEN AND PLANT PHOTOGRAPHS' 1898.

THE EDITOR of THE GARDEN and GARDENING ILLUSTRATED announces Photographic Competition for the season of 1898.

LIST OF PRIZES.

Class 1.—COUNTRY HOUSES AND FLOWER GARDENS.—A prize of TEN GUINEAS, and a SECOND PRIZE OF FIVE GUINEAS, for the best series of not less than twelve photographs of country houses and their flower gardens, particularly those showing the beauty of the house in relation to the garden and the home landscape. Picturesque farm and manor-house gardens may be included in this class.

Class 2.—SMALL GARDENS.—A prize of FIVE GUINEAS, and a SECOND PRIZE of THREE GUINEAS, for the best ten photographs of picturesque small gardens, including town and villa gardens, rectory, farmhouse, or cottage, or any other kinds of small garden.

Class 3.—FLOWERS AND SHRUBS OF THE OPEN AIR.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, to the sender of the best series of not less than twelve photographs of the above. These may include wild plants or bushes, or any plant, flower, or shrub grown in the open air, including also half hardy plants put out for the summer, and either single specimens or groups, or the effects resulting therefrom, in beds or borders. Shoots also of rare or beautiful plants photographed in the house may be included in this class.

Class 4.—INDOOR FLOWERS AND PLANTS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF

THREE GUINEAS, for the best series of indoor plants—greenhouse, stove plants, Orchids, or any other plant not of the open air—either single shoots, plants, or specimens, or the effects resulting from good grouping or other arrangements of such plants separately or in association with others. Ferns or groups of Ferns in houses may be included in this class.

Class 5.—FERNERIES AND ROCK GARDENS, ETC.—A prize of SIX GUINEAS, and a SECOND PRIZE OF THREE GUINEAS, for the best ten views of ferneries, rock, water, bog gardens, old orchards. This may include picturesque groups of native plants, climbers, trees, also woodland and park groups of trees, or other picturesque effects.

Class 6.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS, and a SECOND PRIZE OF £2 10s., for the best collection of not less than twelve photographs of garden fruits; Grapes, Peaches, Apples, Pears, Plums, Cherries, or any other fruit grown in Britain, to be shown singly or on the branches, not crowded on dishes. No prize will be awarded to photographs of fruits which are too small to distinctly show the form, or in which, owing to crowding, the form cannot be seen.

Class 7.—BEST VEGETABLES. — A prize of FIVE GUINEAS and a SECOND PRIZE OF TWO GUINEAS for not less than twelve photographs of the best kinds of garden vegetables. Here, again, overcrowding, as in dishes at shows, should be avoided. The aim should be to show well the form of each kind and as far as may be life-size. The object of this is to get good representations of the best garden vegetables under the old names, though we do not want to exclude real novelties when they are such.

Class 8.—VASES, CUT FLOWERS, TABLE DECORATIONS, ETC.—A prize of FIVE GUINEAS for not less than twelve photographs of arrangements of flowers or plants in vases, table decorations, and cut flowers. Merit to be in graceful effect.

Class 9.—GARDEN STRUCTURES OF GOOD DESIGN.—A prize of FIVE GUINEAS for not less than twelve photographs of seats, bowers, summer-houses, loggia, pergola, stone and other seats good of form, fountains, garden houses, wrought iron garden gates of good form, bridges, boat-houses, flower-bed "baskets," garden sun-dials. This class may include any structure of garden, pleasure ground, or park use.

All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give ample time to prepare good photographs the competition will be kept open until November 15th, 1898.

WHAT TO AVOID.—*Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. The subjects should not be overcrowded. The following are the rules to be observed by all competitors :—*

FIRST.—*The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none the copyright of which is open to question must be sent. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly. Platinotypes and bromide printing and red or brown-tinted photographs should not be sent. Those on albumenized paper are preferred for engraving. All photographs should be properly toned.*

SECOND.—*The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.*

THIRD.—*All communications relating to the competition must be addressed to the Editor, 37, Southampton-street, Covent-garden, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." Unsuccessful competitors who wish their photographs returned must enclose sufficient postage stamps for that purpose.*

THE WRITER OF THIS LETTER

is Mr. L. Caselton, 15, King George Street, Greenwich, London, S.E. He says:

"I have been for years a martyr to a very bad form of headache, which attacked me nearly every day, sometimes quite prostrating me. I was advised to give up drinking tea entirely, and take Cocoa as a beverage. I decided to try Dr. Tibbles' Vi-Cocoa, which I commenced taking some two months ago, and I am glad to say that since then I have been quite free from my dread enemy, headache. I feel confident that this result was brought by Dr. Tibbles' Vi-Cocoa, for I had tried numerous remedies without any success. I find nothing pick me up so quickly as a cup of Dr. Tibbles' Vi-Cocoa after I have had a stiff day's work in school. I shall be glad to testify personally to anyone what a real boon your excellent food beverage has proved to me."

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GARDENING ILLUSTRATED.

No. 985.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JANUARY 22, 1898

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CHRYSANTHEMUMS.

Chrysanthemums—late "crown"-buds (*E. H. S. E. V. W.*).—When a "late crown-bud" is advised to be retained, it is generally meant to refer to any bud later than the first "crown"-bud. Varieties differ very much in their manner of growth, some producing only the first "crown"-bud and then the terminal-bud. Others also develop two, three, and sometimes more "crown"-buds before the terminal ones are seen. So that you see a late "crown"-bud may be either a second "crown"-bud or one even later. However, late "crown"-buds are generally recommended for sorts which develop satisfactory blooms from buds retained during the latter half of August, and often the last few days of that month. On this account any buds appearing within the time specified above should always be retained, or you may not obtain a bloom fit for exhibition if this operation be deferred. Late "crown"-buds are often recommended because blooms developed from first crowns are sometimes very coarse and of bad colour, whereas by deferring the retaining of the buds, neat flowers of good colour more often follow this treatment, although they may be somewhat smaller.

Chrysanthemums—various buds (*Ignorant*).—It is not unusual for the break-bud to produce a bloom, although there are instances where, if the bud be not removed, the bud will perfect a blossom in some of the more vigorous growing sorts. As the lateral growths make progress, and after the break-bud has been produced, these naturally rob the bud of the necessary sap or plant life, and consequently these buds, if not removed, shrivel and dry up. You are quite right regarding the first crown-buds. These form in the points of the shoots taken up from the first break—*i.e.*, when the break-bud appeared, and generally from two to three months after the first break. We have given other replies in this issue of Gardening respecting second crown-buds, which really form in the points of the shoots taken up from the growths succeeding the production of the first crown-buds, after such buds have first been removed. All growths after the first "break" are lateral growths. We never speak of lateral buds. Our description of buds is generally, first, the "break"-bud; secondly, the first "crown"-buds; thirdly, the second "crown"-buds; and these in some varieties are continued into higher numbers; and, lastly, the terminal buds—*i.e.*, the termination of the plant's growth. We have often figured these characteristics of the plants. Read other replies bearing on the same matter.

Chrysanthemums—when to stop (*E. H. S. E. V. W.*).—Although the stopping or pinching out of the points of the shoots of Chrysanthemums is often treated in the columns of Gardening Illustrated, it does not as a matter of course follow that to grow these popular flowers satisfactorily this system should be practised by all interested in the cultivation of the plant. The object of this treatment is to induce early or semi-early sorts to blossom later, and also that the late and very late sorts should be assisted to provide an earlier display. The method of culture in which pinching, etc., is carried out enables a grower for exhibition to secure blooms of all his sorts within a given period, so that he may have a wider range of selection when the important day of the exhibition arrives. Again, some of the earlier sorts and a goodly list of the late sorts, too, are invaluable on the exhibition table, and naturally every grower becomes anxious to strengthen his hands in competition to the uttermost. It is for this reason, then, that stopping or pinching is so often advocated. For an ordinary display at home it is more often quite unnecessary to interfere with the usual method of culture, as a mixture of early and late sorts, and the addition of some good mid-season varieties, enable the grower to provide a display of blossoms in a natural way, extending over several months. There are a few instances, perhaps, when it becomes necessary to pinch out the points of the shoots, as it is important with some of those of rather difficult culture to retain the buds in good time (and this should be during the first half of August) if blossoms of a good size and with plenty of florets are to be obtained. However, as your aim is clearly that of distinguishing yourself in the exhibition of the "Autumn Queen," we gladly give you the necessary information. Mons. William Holmes, let this sort break naturally, securing terminal-buds; grow strongly all through the season. Phœbus, if rooted in good time, should give second crown-buds in August without pinching. Mutual Friend, natural break, and first crown-bud. Mme. Carnot, pinch April 15, and retain second crown-buds. Miss Dorothea Shea, pinch April 10, retaining second crown-buds. John Shrimpton, natural break, and second crown-buds. W. H. Lincoln, late crown-buds. Viviand Morel, also late crown-buds, pinching unnecessary. Mrs. W. S. Trafford, natural break and late crown-buds. Baron Hirsch (incurved), natural break, and late August or early September buds. The other varieties are useless for exhibition.

Chrysanthemums suited to the cut-down system (*Doubtful*).—As your object seems to be that of making your plants as dwarf as possible, so that you can house them in your rather low greenhouse, we have selected the following sorts from your list as likely to give good results if subjected to the cut-down system of culture: Elaine, Mons. Bernard, Mme. de Sevin, Comte de Germiny, Golden Emperor, Bronze Jardin des Plantes, Alfred Salter, Mrs. Cannell, Avalanche, Snowstorm, and Etoile de Lyon. The remaining two or three sorts we cannot trace in any recognised specialist's list.

Chrysanthemums—two good Japanese novelties (*Novelty*).—Your request for the two best all-round Japanese Chrysanthemums to be distributed for the first time this spring, and likely to turn out popular, is a somewhat difficult question to answer. Tastes and opinions differ as to the quality represented by novelties, so that it will be difficult to satisfactorily select the two best. We have every confidence in recommending Mary Molyneux, an immense Japanese-incurved, florets prettily curling and incurving, colour inside deep rosy-pink, with a silvery rose-pink reverse; and Mrs. Mease, the pretty pale yellow sport from Mme. Carnot, and the variety which was selected as the best Japanese bloom in the November show of the National Chrysanthemum Society. These two sorts should come well to the front in the leading exhibits next year. Any Chrysanthemum specialist can supply them. Little is known of the sort you name.

Chrysanthemum E. Molyneux (*E. H. S. E. V. W.*).—Any amateur should bring blooms of this handsome variety to a high state of perfection by giving the following system of culture. Root the cuttings in good time; and this should have been done during December, and, as a result, the plant would "break" naturally somewhat early in the season. Grow on three of the strongest shoots from this "break," and these by the last week in June should be going ahead well. At this time pinch out the point of each shoot, growing on the strongest succeeding shoot on each of these. By the second week in August, or middle at latest, crown-buds should be ready for retaining, and such buds invariably develop very fine exhibition flowers.

Chrysanthemum Mrs. H. Weeks with hairy florets (*Enthusiast*).—It is not in the least unusual for blooms of this variety to have hair-like growths upon the florets. They are not very perceptible on blooms resulting from buds retained early, but from those retained somewhat late in August the hirsute appendages are very noticeable and give an additional charm to the flowers. You will, therefore, see that this peculiarity in your blooms is not in the least remarkable.

Chrysanthemums various queries (*E. E.*).—The blooms you sent to us were all to pieces when they arrived, so that it is not possible to name them. No. 1 cannot be Treasure. This is a small-flowering single variety, and the colour is a bright yellow. There is a mistake somewhere. Grow on your seedling another year, and then submit it to a specialist. He will very soon determine its commercial value. Each of the sorts mentioned in your list have been referred to in last week's issue of Gardening, besides earlier issues. We should be disposed to pinch out the points of your plants by the middle of April, if they did not break naturally by that time, and then secure second crown buds. There should be no difficulty in getting handsome flowers for show, providing you do not retain the buds before the middle of August.

Chrysanthemums for bush plants (*Doubtful*).—Of the twenty-nine sorts which you have submitted to us, you will find the following best adapted for making bush plants, and by this it should be understood the plants are to be grown either in a natural manner and flowered freely, or a goodly number of blooms from the slightly disbudded plants. Lady Selborne, Mrs. G. Rundle, William Tricker, Madame C. Audiguier, Fair Maid of Guernsey, James Salter, Dr. Sharpe, Sœur Melanie, Madame J. Laing, J. M. Pigmy, Mons. W. Holmes, Madame Desgrange, and George Glenny. The foregoing sorts should provide you with blossoms from October and until early December.

GARDEN WORK*

Conservatory.

Apart from the permanent plants in the border, such as Camellias, Acacias, and things of like character that will be in flower now, we shall have to draw largely now upon the resources of the forcing-houses. Bulbs, including Narcissus in variety, Hyacinths, Tulips, Freesias, Azaleas, which flowered in previous years, will not require much forcing to bring them into bloom. Lily of the Valley requires a brisk temperature to start them, and then gradually cool down. Solomon's Seal, Dielytra spectabilis, Spiræas in variety, and many kinds of flowering shrubs easily force if properly prepared during the previous summer. Then there are usually some flowering plants which may be obtained from the stove or the cool Orchid-house where Orchids are grown. Poinsettias and Eucharis Lilies may be taken to the conservatory for a time whilst in flower. Liliums Harrisi and longiflorum are throwing up flower-spikes, and will require careful watching to keep down green-fly. The forwardest Hydrangeas may be placed in heat to hasten the flowering. Luculia gratissima, which has done flowering, should be pruned back. Acacias and Camellias in the border will require liberal supplies of water, and some weak stimulant may also be given once a week or so. Cuttings of Tree-Carnations will root now in sandy soil in a close propagating-frame. Both these and Her Majesty and other forced Pinks should be struck early to get strong plants for forcing next season. The cuttings will, of course, be taken from forced plants. Begonias which have gone out of bloom should be cut back and placed in heat to produce cuttings, as the sooner they are propagated the better. Abutilons that were pruned back in summer will now be full of buds and blossoms. One of the brightest things now over an arch or trained up a pillar or wall is Habrothamnus fasciculatis. This should be pruned in summer for winter flowering. Noisette Roses planted out in the borders and trained up under the roof will never be altogether without flowers or buds. Many years ago I had an old plant of Moiret that was very free in blooming; out-of-doors the Roses are pink or nearly so, but under glass in winter the flowers were white, occasionally tinged with pink. Those who have tried this Rose under glass in a roomy house will know its value.

Stove.

Propagation may begin any time when cuttings can be obtained. India-rubber-plants and Dracænas will soon root in a brisk bottom-heat. Old plants of both may be cut up into single joints and plunged in Cocoa-nut-fibre. I have rooted them in damp sawdust; all that is required is plenty of heat and a close atmosphere, and as roots are started the cuttings should be potted singly and plunged again in the bed. Palm-seeds may be sown now and very lightly covered with sandy peat or leaf-mould. As regards repotting anything in this house, young plants may be shifted on. Anything but large specimens may wait till the days get longer. Sow Fern spores in a shady corner and keep close. The days are visibly lengthening, and plants with pots full of roots will require more water. If any of the beautiful Amaryllises are grown, these will now require shaking out and re-potting, using good loam with a little leaf-mould and sand, but the loam must be good. Night temperature 65 degs., with a little air on bright days, with enough moisture in the atmosphere to make it soft and genial. A hot, dry atmosphere is sure to fill the house with insects.

Early Vinery.

Give frequent attention to stopping and tying down young shoots, doing the work tentatively to avoid splintering off the shoots. If the rods are trained at all close stop at one leaf beyond the bunch. Remove all sublaterals below the bunches, and pinch all above to one leaf and permit no further progress. Night temperature now 60 degs, air to be given when the thermometer rises above 70 degs., closing early in the afternoon, so that the thermometer may run up to 85 degs. or so, the house to be damped down at closing time. If Vines are syringed after the leaves unfold it is necessary to be sure about the water; it is safest to use only rain-water of the same temperature as the house.

Early Peach House.

Fertilise the blossoms either with the camel's-hair brush, rabbit's tail, or in some other way. When the pollen is ripe and dry a tap on the trellis will generally dislodge it. Begin disbudding in good time, when the young shoots are 1 inch long, removing those from the top and undersides of the branches first. Do it gradually, so as not to give too much check. If green or black-fly makes its appearance use Tobacco-powder; very often a little powder dusted among the branches will clear off the insects economically. If the trees are permitted to get badly infested it will be better to vaporise. As soon as the blossoms are well set use the syringe regularly twice a day, morning and closing time. Night temperature 50 degs. Ventilate when the thermometer rises above 60 degs. Only small openings will suffice at first, increasing them as the day advances. Keep out cold, especially avoiding cold draughts. See that the inside borders are sufficiently moist.

Early Melons.

If there is a warm span-roofed house at liberty Melons may be started now in a temperature of 65 degs. to 70 degs. at night; they must have a brisk bottom-heat of about 85 degs. Plant in good loam. Stimulants can be given when the fruits are set. Keep the foliage hard by judicious ventilation; do not shade.

Window Gardening.

There has been no frost to injure anything yet, but there is time enough for a severe winter. Better keep the plants in rooms rather dry at the root. Of course, Ferns and plants in bloom must have water when necessary. Scarcely anything will want water more than twice a week for the next month.

Outdoor Garden.

Turf goes down well now in open weather. In repairing tennis-lawns or cricket-grounds only thick, strong turf should be used. Weeds will come out easily now, and a little top-dressing and some White Clover and Grass-seeds sown over the weak places in March will fill and make a good sward by May. Bulbs will soon be working through now, especially Aconites, Snowdrops, and Daffodils. These three bulbs should be planted freely, as they come at a time when flowers are wanted. Pæonies are getting cheaper now, and they are very showy border plants. Break up the ground well, and add some leaf-mould. It takes a year or two to get them established; afterwards they will take care of themselves with an annual top-dressing. If the frost has lifted anything out of the ground, see that it is made firm again. A good deal of harm is done sometimes by frost among newly-planted things. For this reason I like to use a little mulch as soon as frost sets in, if not before, over the roots of plants which are likely to suffer from the lifting power of frost. The charred refuse from the fire-heap passed through a half-inch sieve is excellent mulching material for many things, and the birds are not likely to disturb it. If snow comes, it forms an excellent covering for low-growing plants; but Cedars and heavy-foliaged evergreens should be liberated from its weight.

Fruit Garden.

The pruning and nailing or tying should be in a forward condition now. Peaches may be trained to the walls now. The only trees which should not be pruned yet are Figs on outside walls. These are now covered with something to protect them from frost. Figs ought to do better than they usually do away from the south coast. It is very important to keep in touch with the roots, and this means to have something of an impervious nature under them, either in the shape of a layer of concrete or 9 inches of brick-rubble placed in the bottom of the border, and a mixture of sifted ashes and lime placed on top and watered in, and then rammed down quite firm. On a station of this kind Figs make firm wood and bear freely, and if the roots in the course of years extend beyond the station and strike deep into the earth, they are easily lifted and brought nearer the surface. If any pruning of Orchard-trees remains to be done, give attention at once. Thinning is what these trees require if they were started right at first. Young trees should be headed back till enough breaks have been secured to form a good-sized, well-balanced tree. Nuts may be pruned now. Plenty of male blooms (catkins) must be left to fertilise the little red flowers now opening.

Vegetable Garden.

Prepare sets of Potatoes for planting by laying them out thinly in a light position. The best course, especially as regards the early kinds, is to place them crown upwards in shallow boxes or trays. Get the ground ready for Onions and early Potatoes. Sow enough early Peas and Beans to insure a fair supply. Place traps for mice, for though if the seeds are dressed with red lead the mice will not touch them, it is better to trap the mice and clear them off; if left to roam about they will do mischief somewhere. A good stock of Tomatoes, Cucumbers, and Melons should be raised to meet every requirement, so far as regards warm-houses and pits. There is always work in the forcing department, as at this season early vegetables will be coming on in hot-beds, and warm coverings will be necessary at night, and when a new bed of Asparagus is started in a frame, the mats may remain on till the Grass is coming through, which will be in about three weeks from the time of planting. Forcing Asparagus destroys a great many roots, and provision should be made by annual sowing to meet this demand. Where time is important, seeds sown now in small pots will be ready to plant out when well hardened off in April. The common Asparagus is a very ornamental plant in a young state for small pot work. The plant hawkers in spring take advantage of this, for I often see them mixed with little Ferns on the coster's barrow. Up to the present there has been no frost to hurt anything. Even Lettuces and Cauliflowers that were tied are safe.

E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 18th.—Moved rooted Chrysanthemums to light position in cool-house. We want sturdy plants More cuttings of various kinds are being put in from day to day as the cuttings are ready, especially late-blooming sorts suitable for cutting at Christmas and later. Shifted on young Fuchsias and White Marguerites, giving them a little warmth and keeping them near the glass. Put sticks to early Peas in warm border. Sowed Horn Carrots and Radishes on hot-bed, and planted a hot-bed with early Potatoes.

January 19th.—Sowed a few Brussels Sprouts seeds in a box under glass. Looked over Carrot and other root stores, and rearranged same. Also looked over fruit-room to remove fruits showing symptoms of decay. Planted a warm span-roofed house with Tomatoes. Fertilised blossoms of Strawberries; picked off weak blooms. Shall give weak liquid-manure now twice a week or so. Moved more Strawberries to Strawberry-house. Mustard and Cress is sown in boxes bi-weekly in heat.

January 20th.—Put in cuttings of "Geraniums" of various kinds. Shifted Ivy-leaved Pelargoniums in 5-inch pots. Larger plants in 6-inch pots have been shaken out and repotted in 5-inch pots. Shook out and repotted a good collection of Zonal Pelargoniums intended for spring blooming. These will remain for the present on shelves near the glass in warm greenhouse. All plants are given a little extra warmth, and not so much water till roots begin to work.

January 21st.—Started a few New Dahlias in heat to get cuttings. Rearranged and opened out Show Pelargoniums Shook out and repotted a collection of choice Hybrid Amaryllis, and plunged in mild hot-bed to start the roots. Sowed more Tomatoes, chiefly Freedom and Ham Green. Tied down and stopped shoots in early vinery. Washed Vines in late-house. Grapes have all been cut and bottled in Grape-room.

January 22nd.—Put in more Vine-eyes of different kinds. Put in Fig cuttings, selecting well-ripened young shoots with a heel of old wood at base. Turned over gravel walks running through shrubbery, and that were getting a little mossy, and rolled down firm. Used a little Tobacco-powder on Roses and other things in conservatory. There are only a few pests, and if these are destroyed the trouble may be stayed for some time.

January 23rd.—Moved a lot of Lilium longiflorum to warm-house. Vaporised a house of Arum Lilies just coming into bloom. Green-fly are always more or less troublesome on Arums just as they are throwing up their flowers, and we find vaporising the best remedy for these and white Lilies, which are difficult to keep free from flies unless prompt measures are taken. Potted more roots of Chicory and placed in Mushroom-house. Watered Mushroom-beds with warm liquid-manure.

THE KITCHEN GARDEN.

ARTICHOKES IN WINTER.

As a winter vegetable I do not think the Jerusalem varieties have the best possible culture in many gardens. The plants being strong and requiring much space, they are often relegated to the worst parts of the garden and used as a screen or grown under trees. I am pleased to see the increased liking for the newer white variety, and of this there are two or more kinds, a long tuber and a round one; the latter is the better. Another white one I have grown this season is from 8 inches to 12 inches in length. By some persons this abnormal growth, if it can be termed such, is attributed to the dry season from March to July, when the tubers made little growth, and the heavy rainfall afterwards. I am not inclined to make the weather entirely answerable, as the tubers were long at planting. I think it a distinct variety; at any rate, another season will clear up the matter. The roots in question have only been in this country one season. Flavour is a cardinal point, and this is much superior to that of the old pink variety, and it is equally hardy. The white, oval tuber is a splendid acquisition, and no one should now grow the old form. I have been chary in advocating discarding the old kind till I was sure of the hardiness of the white, but the severe winter of January, 1895, quite assured me on that score, as the stock was left in the soil and not one was injured.

I am aware the Jerusalem Artichoke cannot in any sense be termed a tender plant, but it is well to make sure before discarding an old kind. The new white is well worth a trial by those who are usually indifferent to this vegetable, and I feel sure it will be an acquisition. The new kind is more like Celery or Seakale in flavour. It is superior as regards shape, and there is less waste, the colour also being pleasing compared with that of the old sort when boiled. In shape the tuber more resembles a Potato. Another point deserving of note is its value as a winter vegetable, as many persons can digest a well-served Artichoke who are unable to eat other roots. There are several ways of serving to make them palatable. If we had a few severe winters similar to 1895 we should place more value on these roots.

Artichokes well repay good treatment, and the same remarks are applicable to the small-tubered or Chinese variety (Stachys tuberifera). This is quite hardy, but, unfortunately, it is too small to become a favourite in many gardens. The quality is good, and much may be done to obtain size by planting annually, giving more space and selecting seed tubers. The shoots above ground should also be restricted, so that the plant spreads less. It is also advisable to plant strong tubers and to give manure freely. The ground should be cool and not too much drained. The white kind is worthy of better treatment to secure good shapely tubers. Care in selection of seed tubers will go a long way towards more shapely roots of good quality. Plants grown close together in rich garden soil cannot be expected to give good results, and my reason for advising field culture is to point out that thus a dwarfer plant and better roots are obtainable. I am not in favour of planting small, useless tubers, as if too small they cannot support the necessary growth. Early planting is advisable, and where the plants have to be grown year after year in the same spot, my advice is to trench or double-dig and give a liberal dressing of burnt garden refuse. In heavy land old leaf soil or spent manure, road-scrapings, and similar aids will greatly improve the quality of the tubers.

G.

Onion Trebons.—Those who have not a good Onion soil will find Trebons a capital variety to grow, as it is very hardy and makes

headway in cold, wet seasons, when other Spanish varieties do badly. Moreover, it forms heavy, well-shaped bulbs with a particularly fine neck, and if seed is sown in February in a box in heat and the seedlings hardened off and planted out in April, very large bulbs may be secured. Trebons is an excellent keeper and the flavour is exceptionally mild and pleasant. —J.

TOMATOES.

At this season the amateur is selecting the varieties of Tomatoes for next season's crop. Owing to the great increase in varieties of late years, the task is not an easy one if they have no knowledge of the plants, and are, as it were, just commencing Tomato culture. The variety illustrated, Vick's Criterion, is now old compared with others, but still a remarkably good one, and though it may not be large enough to suit all growers, as it is what is termed a cluster or bunch Tomato, its quality is good, crop also, and the fruits are shapely and of beautiful colour. For many years Criterion was a great favourite. I fear such kinds, those that produce larger fruit, are more favoured, but for home use it is a good variety on account of its quality. No amateur who needs a heavy crop for eating will regret giving it space. When eaten in a raw state as a salad it is excellent, and a free grower. I will briefly note the value of some half-dozen varieties of more recent introduction, all worth attention on account of cropping, colour, and quality. I am aware some of my readers may have failed with them, but at times that is owing to culture, and not variety alone.

With regard to culture, many amateurs have to make various shifts to find room for their plants, and in many cases grow a number of other things in the same house. It is surprising how well they grow Tomatoes under these difficulties. The finest crop I ever saw was grown by an amateur, who had Tomatoes on one side of the house and plants on the other. Both were grown remarkably well, the greenhouse plants being models of health and good shape.

As regards varieties, Ifield Gem is a splendid cropper and a favourite among amateurs. This rarely fails to set freely, and is free from spot if grown in a cool-house. Those who need large Tomatoes cannot do better than give Duke of York a trial. I am very fond of this variety on account of its very heavy crop, free setting, and fair quality. I admit some of the fruits may come too large—I have had them well over 1 lb. weight—but the plant produces a very fine crop of marketable, deep red, and smooth fruit. Conference, a variety raised a few years ago in the Royal Horticultural Society's Gardens, Chiswick, is, in my opinion, one of the best amateurs' Tomatoes grown. Few are equal to it in crop. The fruits are shapely, smooth, and of a beautiful colour, and the quality is excellent. Frogmore is also a choice fruit, bears freely in large clusters, and is just the variety for an amateur who studies quality. Some growers like deep-coloured fruits, and Ham Green is a splendid Tomato for late use. It is not so early as Conference, but a fruit that has held its own for many years, and one of the best in quality grown. Many others could be named, such as Challenger, Earliest of All (the latter a splendid fruit), Eclipse, Abundance, and Early Ruby; indeed, there are many kinds. No one who grows them well will have cause to regret their selection. I have not named one of the most popular Tomatoes of the day—Perfection—which is very handsome, and suitable for exhibition. If there is a fault, Perfection needs more artificial setting or fertilisation than some kinds, a point often overlooked by amateurs. No matter what kind is grown, it is well to give plenty of light to get a sturdy plant.

The Criterion Tomato. From a photograph by Mr. F. Parren, Northgate-street, Canterbury.

I have not noted yellow fruits. They are delicious, and should find more favour. Golden Nugget and Sunbeam cannot be beaten for quality, crop, and, in my opinion, are of more delicate flavour than the red kinds. A few words as to

Culture.—Amateurs who only have mixed houses should sow in March rather than January, as then with longer days and more warmth there is a better plant. It is a good plan to sow a few seeds. I have sown three seeds in a 3-inch pot, and thinned to the strongest when above the soil. Place the pots on a shelf close to the glass, and pot on as soon as the pots are full of roots. Grown thus, there is no trouble of pricking off in their tender stages. Seedlings, when grown in a pan, receive a check when separated, and though it is not so serious for late plants it is for the earliest, to which these notes apply. Plants for summer fruit may readily be raised at the end of February, as it is better to grow quickly—*i.e.*, not to allow the plants to receive a check or get too much pot-bound at the start, as if at all weakened it affects their cropping and health. W.

HERBACEOUS PLANTS AND BULBS IN LINES.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

I think my answer to "W. S." explains why I recommend some borders to be planted in lines. But as for nine years I have grown a certain number of large beds and borders on the exact principle of those I recommended, and I have found that they are most successful in keeping up a prolonged gay effect, I do not quite know why some people, who do not fancy that particular plan themselves, should protest against my articles, or think them against the spirit of the paper, as Mrs. Portman-Dalton and "W. S." have done. I thought the spirit of the paper was to encourage a love of gardening, and that it advocated the use of herbaceous plants instead of ordinary bedding plants, such as "Geraniums" and Calceolarias. And Mrs. Portman-Dalton and "W. S." seem to forget that I did not advocate those borders I mentioned to take the place of all herbaceous borders, but that I called them permanent massed beds.

Mrs. Portman-Dalton says I have advocated a plan which is expensive. I have said several times that it is not so expensive as bedding-out, which needs greenhouse heat in winter, and constant re-potting and other labour. As to my having recommended the most expensive kinds of bulbs, this is incorrect. On the other hand, to plant bulbs is certainly a more expensive plan than to raise annuals, etc., from seed. It is because I felt it was not commonly known that bulbs would thrive well under herbaceous plants, and bear also a good mulching of manure every year, that I have written on the subject at all. Having made the discovery that they would do so, in both a light and heavy soil, I have made my experience known. Only those who have tried my plan, in my way, can have any idea as to whether it is really successful or not.

As to Mrs. Portman-Dalton's idea that Delphiniums and Phloxes must be divided every three years, I do not think a good result is ever obtained from this practice, as in most soils they will go on for many years increasing in beauty if undisturbed. Phloxes will do the same thing in soil of at all a heavy nature if they are mulched yearly. In a light soil where they may need replenishing, cuttings, not divided plants, give the best results. As to using creeping Phloxes or other plants as an underplanting, they do not thrive away from the light; and I must, on my part, strongly protest against the yearly forking Mrs. Portman-Dalton mentions in her article. To all shrubs and plants it is most injurious, as the most valuable roots lie near the surface of the soil. I must also state that the leaves of spring-flowering bulbs have died quite away long before August.

Mrs. Jocelyn.

Sir,—My sympathies are entirely with "W. S." and Mrs. Portman-Dalton. It is to be inferred from Mrs. Jocelyn's answer to "W. S." (p. 650) that, although tacitly acquiescing in his contention that it is impossible to get beauty out of flowers in stiff lines, she advocates the line theory because she writes for

beginners. But surely beginners have as much right to demand beauty in the garden as has the "real gardener," who, we learn in the next paragraph, only arrives at natural effects—another name for picturesque grouping—after years of experience. By all means let the instructions given be as "minute and practical" as possible, the more minute and the more practical the better; but cannot these be applied as readily to the planting of groups as lines? If the line system be correct no better plea for its inculcation can be advanced than that the seeker after information is a beginner, for the beginner's mind is, so far as gardening lore is concerned, virgin soil, receptive and retentive of first impressions, but, from its very inexperience, incapable of discriminating between good and bad. It appears to me, however, that to give this advice is to start the novices off on the wrong road, and one which will necessarily have to be retraced when they realise, as it is to be hoped they will, sooner or later, that in following it they are getting further away from nature and nearer to the artificial. Nature groups her flowers—does not plant them in lines; and I hold, as I hope do the majority of your readers, that, as far as practicable in a well-ordered garden, we should be guided by the methods of that "predominant partner." I am quite at one with Mrs. Jocelyn in her contention that mixed borders which are "confused muddles without any beauty or interest" do infinite harm, but is it necessary that mixed borders should be confused muddles and devoid of beauty? Doubtless such a border, if plants are dotted singly about its surface, produces an effect of paltry triviality that is antagonistic to the reposeful air that should invest the garden; but when the flowers are naturally grouped, its precincts are endowed with a charm that changes with the changing months as the varied breaths of colours come and go.

It may be objected that the mixed border is not sufficiently gay. It certainly admits of that reproach, if reproach it be. At no time is it a blaze of colour from end to end, but it is for that very reason infinitely more beautiful to many. I would not for a moment have it understood that I deprecate the introduction of colour into the garden. I fully recognise its value in masses, but not in lines. A spacious bed of scarlet Begonias framed in a setting of green forms a noble colour scheme, at once striking and harmonious; but encircle the Begonias with a ring of yellow Calceolaria and then by an outer ring of blue Lobelia, and the lines first emphasise themselves on the mind, relegating colour to a secondary place, and this, I conceive, applies equally to small as to large gardens, since beauty is not dependent upon size.

S. W. FITZHERBERT.

SIR,—I venture to write to you on the above, not because I can claim to speak with authority, but because I am one of those for whom Mrs. Jocelyn's articles were chiefly intended. Her critics have either never experienced the difficulties of a beginner, or they have entirely forgotten them. A few years ago I came into possession of a garden, having previously lived almost exclusively in a town, and was entirely ignorant of the habits of plants. The garden was little better than a wilderness when I got it. I started at once to make a mixed border, the size being 30 yards by 3 feet. I did so on the principles advocated by Mrs. Jocelyn's critics; I studiously avoided planting in lines. The result was exactly what Mrs. Jocelyn describes as a "confused muddle without any beauty or interest in it." Accordingly I modified my plan, introducing a certain element of formality of which "planting in lines" formed a part. I do not claim that the border is now an ideal mixed border, but it is vastly better than the old one. I admit that my lines are not nearly so rigid as Mrs. Jocelyn's; they contain a greater variety of plants, and are therefore much more broken up; but they are lines, notwithstanding. There are clumps of Lilies, Delphiniums, Michaelmas Daisies, and Chrysanthemums, but they are all more or less on the back line; clumps of border Carnations, German Iris, Phlox, and Aquilegia more or less on the middle line; clumps of Pink, Gentian, Primula, Auricula, etc., on the front line; with clumps of Darwin Tulips, Narcissus, and other bulbs between the above lines. In order to have an ideal mixed border showing no trace of lines, yet escaping confusion, and providing masses of colour each month fairly well distributed over the border, a certain size is essential, not 8 feet broad, I think. In a border such as I have been describing, 30 yards by 3 feet, I am unable to see how you can gain continuous colour and avoid confusion without having recourse, in some degree, to lines. Certainly neither Mrs. Jocelyn's critics nor "S. W. F." have shown us how to do so.

W. B. STEVENSON.

The Manse, Athelstaneford, Drem., N.B.

*** This discussion must now cease.—ED.

FERNS.

NORTH AMERICAN FERNS IN DEVONSHIRE.

OF the numerous Ferns we owe to North America few, if any, can rival in beauty the Sensitive Fern (Onoclea sensibilis) and Ostrich Fern (Struthiopteris germanica) for size, elegance, and general appearance, as also for usefulness in growing in wet or constantly moist places outside. Both are quite hardy, and if any failure is experienced in their cultivation it is not due to the effects of the cold during the winter, but to the want of moisture, to which both plants are remarkably sensitive while at rest as well as during the period of growth. It may appear strange that Struthiopteris germanica should be given as a North American plant, but, notwithstanding its specific name, the fact remains that, while scantily and rarely found wild in Germany, Austria, Denmark, and Russia, we have it on the authority of Eaton that it is found in enormous quantities growing in low grounds, especially in fine alluvial soil subject to the overflow of rivers from Saskatchewan and Lake Winnipeg to New Brunswick and southwards to Pennsylvania and Illinois. "In these places," says Eaton ("Ferns of North America"), "the barren fronds of the Ostrich Fern, which is one of the finest North America produces, attain 10 feet in length, the grand vase-like circle of foliage of this species being often higher than a man's head and sometimes extending above his utmost reach." Whether, even under the most favourable conditions, it ever attains such dimensions in this country is very doubtful, but a glance at the illustration, which represents a group of this Ostrich Fern in the background, will give an idea of its value as an outside decorative plant. Its barren fronds are narrowed from the middle to the base and terminate in a point at their summit; their numerous stalkless leaflets are of a light green colour and of a soft, papery texture, and they are in exposed places frequently injured by late spring and early autumn frosts. Its fertile fronds, much shorter than the barren ones and much contracted, are produced only late in the summer, disposed in the middle of the crown and perfectly erect; the lobes of their leaflets have their margins much recurved, so that the whole leaflet forms a somewhat articulated, pod-like body.

The Fern shown in the foreground of the illustration is Onoclea sensibilis, of purely North American origin, Eaton saying that it is to this day found growing wild in wet meadows and thickets from New Brunswick to Saskatchewan, extending southward through Dacotah, Kansas, and Arkansas to Louisiana, and eastward to Florida; and that it is, in fact, one of the commonest Ferns of North America, often occupying large patches of land, to the partial exclusion of other plants. Lowe, in his "Ferns, British and Exotic," vol. vi., says that this beautiful Fern is undoubtedly one of the oldest, if not the very oldest, of exotic Ferns introduced into Europe, having been imported from North America in 1699. This is not such a strong grower as the Struthiopteris, yet its barren fronds sometimes attain 3 feet in length, and the main attraction of the plant lies in the pleasing, soft pale colour of the oblong, spear-shaped leaflets, which are wavy or slightly toothed at the margins. The texture is soft and papery, their surfaces are perfectly smooth, and their under-side slightly bluish. Fertile fronds are not very common, and are so unlike the barren ones that no one unacquainted with the plant would suppose them to be related to each other. They stand about half the height of the barren ones, and are perfectly rigid and nearly black when fully developed.

Ferns in Devonshire. Ostrich Fern (Struthiopteris germanica) at the back, with Sensitive Fern (Onoclea sensibilis) in the front.

Both plants require an abundance of water at the roots all the year round, and the soil which they prefer is a compost of three parts of good strong loam and one of leaf-mould. Although they may be increased by spores, propagation is usually effected by the division of the stolons or underground rhizomes, with which both species are provided, and, the plants being of a deciduous nature, this is best performed from October to the middle of March.

S. G.

FRUIT.

GOOD WINTER PEARS.

The value of good winter Pears cannot be over-estimated, either from a private or a market point of view. Of mid-season kinds there are too many, and too much space is devoted to them. It is not unusual to go into a fruit-room in a large garden during October or November (after a good Pear season) and see them rotting in large quantities, simply because the fruits will not keep. Very often one can go into the same room after Christmas and not find a good fruit. We have three times the number of early and mid-season kinds that are wanted, and I would strongly advise those with such a lot of space devoted to their culture to grub up the trees and substitute late kinds. Some may say these are unreliable. Some of them may be, but are not so in all kinds of soil. Under any circumstances they pay far better than early or mid-season fruits.

There are far more Pears worth planting as late kinds than many suppose. Having made a study of several of the best late kinds, I will give a few particulars.

I should not consider any kind fit to go in this list unless it would keep well into December. It is from this time onward that they are the most valuable. The season and situation have much to do with their keeping. Some growers think a warm, moist season is the cause of the fruits not keeping. This is so in a small degree, but not as much as gathering them too early. If asked to name best Pear grown, I should say undoubtedly

Winter Nelis. During the last thirty-five years I have never found this poor in flavour, although I have seen it from all kinds of situations and trees of all descriptions. To obtain the best results it should be given wall space on a west or east aspect. I prefer the trees on the Quince-stock. It is a weak grower, and many condemn it on this account. The tree should be planted in a good free loam from 18 inches to 24 inches deep, and well mulched, during the growing season giving it abundance of water and liquid-manure as the fruit attains size. Well thin the fruits, allowing them to hang on the trees as long as possible, and protect from birds. One will then be favoured with most delicious fruit. The tree, from which the fruits which we took first prize for flavour for recently came, was treated in this way, with a sprinkling of artificial manure dug over the soil three or four times during the season.

The fruit of Winter Nelis keeps. We have had a liberal supply for six weeks, finishing with the close of the year. The fruit is not large, but when well grown quite large enough for dessert. I consider Olivier de Serres the next most reliable kind for flavour. It is not a strong grower, although sufficiently vigorous. I have a tree in this garden in good condition, and like the foregoing kind it needs high culture and well thinning, the fruit being fit for use after Christmas. On a light, warm soil, and the tree highly fed, the fruit produced is of fine size and quality. I have only grown it against a wall. For size, appearance, and flavour I do not know a Pear that can equal it. It needs a warm soil and situation, a west aspect being a good one, as then the fruit is not apt to drop off prematurely. I have often noticed how much more russety the fruit is from some places than others. This roughness denotes high flavour. I have had good fruits of this kind from a tree in North Hants over a period of nine or ten weeks, finishing up at the end of January. This kind will bring high prices when well grown.

Josephine des Malines, I consider, holds the fourth position, and after growing this in six or eight different places I have never found it poor, although sometimes only second-rate. The best fruits I have ever seen were on a bush-tree in Perbeck Isle, and I well remember that those were of splendid flavour, and they kept us supplied with good fruit well into March, being stored in an old outbuilding. If grown on a wall it should be on a warm soil, and east or west aspect. It does well, however, as an espalier or bush, although the fruit is not as large but generally of better flavour.

Easter Beurre.—Where the soil is suitable this is one of the best late Pears. I frequently saw this in excellent condition growing in the sandy soil at Frimley Park, Surrey. The tree was well established, and growing on a south wall. The flavour was delicious. In this garden I have a small standard tree growing against a west wall and planted five years ago. This season it bore thirty-six fruits, which will be in use in January and promise to be high flavoured.

Zephirin Gregoire is a fruit of medium size, and in a warm soil very good from a bush, or against an east wall, and it keeps well.

It is not often one meets with a new late Pear of such high quality as that shown at the meeting of the Royal Horticultural Society on December 14th under the name of Le Lectier. I had the pleasure of tasting it and considered it first rate. If it proves as good everywhere else it should be extensively cultivated.

John Crook.

COE'S GOLDEN DROP PLUM.

This Plum is a general favourite in all gardens, whether large or small. I find that to grow

Plum Coe's Golden Drop. The fruit was 3½ inches deep and 7 inches round. From a photograph by Mr. E. G. Lowe, The Avenue, Trowbridge, Wilts.

Coe's Golden Drop well in bush form or as a standard a little pruning only in the way of thinning out is best. On the other hand, there are many garden soils not suited to the Plum, and no matter how well treated, the trees fail to crop. A heavy wet clay soil is anything but good, and just the reverse is a light sandy medium on gravel, in which trees will not give the best fruits. In this latter soil I admit the trees make plenty of growth but not fertile wood, and the tree is so subject to blight in dry seasons that it is heavily handicapped. To the best soils and mode of growth for this variety I will briefly refer.

In many gardens this variety is not suitable for standard growth, and as some amateurs may not know this Plum thoroughly I will describe it. It is a large oval fruit, golden-yellow, as its name implies, very juicy, rich, and excellent, and one of the latest kinds grown, as by allowing it to hang late on the trees, if on a wall, it may be kept well into November if stored in a cool room and each fruit wrapped in tissue-paper. For late dessert there is no Plum equal to it in quality and keeping. This variety will grow splendidly on a west or east wall for late supplies, and when quite ripe it is sugary and rich, though the skin may be a little shrivelled. The tree is hardy, and a regular bearer, which cannot be said of some other kinds of less merit, but I do not advise growing it as a bush, pyramid, or standard in northern localities, or in unsuitable soils. In the latter, given wall culture, there is a good return, as the soil may be made suitable; indeed, in most gardens this variety is worth more than the usual culture given the Plum, on account of its good qualities and free bearing.

I have alluded to the soil being unsuitable, and if grown on a wall it is easy when planting to give good soil—for instance, with heavy soil to provide ample drainage and lighter materials, such as burnt soil or wood-ashes and old mortar-rubble or road scrapings from limestone roads. The best soil for Plums is a light, or what is termed a friable, loam, and in planting this should be borne in mind. Another point is shelter, which is essential in many gardens to escape frost when in bloom. Severe pruning does not tend to fruitfulness. I find this variety, given a fair amount of freedom—that is, the new wood made each year—should not be cut too hard, but whenever possible cut out old spurs, and then extend the tree. We often see standard Plums fruiting yearly when not much pruned, provided the trees are not crowded. My advice is do not prune too much. If young trees are gross at the start, replant, or what is termed "lifting," and this will promote a sturdier fruitful growth. By all means feed from the surface—that is, do not give young trees too much manure at the start; in fact, none in the soil other than as a mulch at planting, or in dry weather.

W.

NOTES ON RASPBERRIES.

Though this is one of the most popular of garden fruits it does not receive careful attention from amateurs. The most suitable soil is a retentive one, rather moist, as in its wild state the Raspberry is usually found growing near watercourses and in moist positions. Fresh plantations may be made now and old ones renewed. In the first place, thoroughly work the soil by trenching and digging in well-decayed manure, and decide on the method by which the canes are to be grown. In small gardens they are usually planted and trained to a wire trellis; but market growers cultivate only the dwarf kinds that are sufficiently strong to be self-supporting. If the former system be adopted, the canes should be planted close to the surface of the soil at a distance of about a foot apart, and under the latter method put the stools, consisting of five or six shoots, at about 4 feet apart in the rows, with the latter about 5 feet asunder.

Give a surface dressing of farmyard manure after planting out in the spring, particularly if the canes at planting time were at all weakly, cut them back to within a few inches of the ground. This, of course, does away with any prospect of fruit the first season, but the growths made will be so strong that the crop in subsequent seasons will be large enough to repay for the time that is lost. If the canes at the time of planting are of more than average strength they will fruit the first season and also throw up suckers sufficiently strong to carry a crop the next year, but if they are weakly and are allowed to fruit the first season after planting the growth made will be weakly. The medium between the two extremes may be arrived at by cutting back every other cane, by which means fruit is obtained the first season and strong growth will also be made for subsequent crops.

The pruning afterwards consists of going over the canes directly the fruit is over and cutting away all that have borne, together with weak suckers, unless it is desirable to make further plantations, when the latter may be carefully forked up with a few roots attached and transplanted, as advised above. The canes

required for the next season's fruiting may then be carefully tied to the trellis, afterwards cutting the tips of the taller ones off in the spring. Very often Raspberries do not receive any attention in the way of pruning until just before fresh growth is made, but this is undoubtedly a mistake. When a cane has borne its crop of fruit its work is done.

The Raspberry is naturally surface-rooting, and when healthy the soil near the cane is a network of tiny fibres. To cut or disturb these by digging is to ruin the canes; therefore, a spade should never be used close to the stools. At the same time the Raspberry is a gross feeder, requiring plenty of support, which may be given in the shape of mulchings in the autumn and again in the spring, if necessary, of rich farmyard manure. Prior to this operation rake off all leaves, weeds, and rubbish, to bring chrysalides and insect-pests to light. I refer especially to the Raspberry-weevil, a brown-backed, hard insect, closely allied to that which attacks the Vine. It belongs to the family of night-feeding insects, and is of such a hardy character that no insectide has any effect upon it. The insect feeds on the flowers and tiny fruits, often causing great damage, and when its ravages are noticed it is a good plan to go over the canes at night with a light, first stretching a sheet on the ground and shaking the weevils on to it; after this they may be gathered up and destroyed. By following this method and clearing away the surface-rubbish which harbours the chrysalides, the pests may be got rid of. It is useless for the amateur to grow too many varieties, and amongst the most prolific are Carter's Prolific, Northumberland Fillbasket, Superlative (a fine kind), and Beaumoth's Seedling, the latter being a late fruiting variety. H. H.

Cox's Orange Pippin Apple.—Admittedly the best mid-season eating Apple in cultivation, giving good crops, handsome, useful, nice fruit, soft in flesh and rich in flavour, also in proper condition keeping well. How often is asked—Which is the best way to have trees to produce crops? As the tree is not at all a strong grower and needs little pruning, but some occasional thinning chiefly, the low standard pruning growth seems to give the best results. It is the natural habit of the tree to produce somewhat pendulous growth, and all trees having this habit not only crop best as standards, but this pendant habit promotes fruitfulness. When grown as bush fruit-trees the needful shortening of branches serves to keep them more stiff and erect. On standards the growth is more natural. The fruits on the latter form of tree are usually better coloured and more richly flavoured. Cox's Orange Pippin also does well as an espalier, producing in that way fine fruits. The branches are, of course, in this case very rigid, but they are depressed, or horizontal, and that line of growth tends to fruit production. Generally the trees do well for this purpose on the Crab-stock, but if soil be naturally deep, good, and well worked, it is best to have the trees on the broad-leaved Paradise stock, as in that way the roots are kept nearer the surface, are more fibrous, and more easily fed by the aid of manure mulchings or dressings. Too little attention is given to the need for these helps, not only when trees are carrying good crops of fruit, but also the following year, when they are recuperating or forming new fruit-buds.—A. D.

Narcissus poeticus ornatus under glass.—The first blooms of this, the most useful of all the Poet's Narcissi, are now open, and manure, that will maintain a bottom-heat of 80 degs. or so when the temperature is right. Place 2 inches of leaf-mould and sand on the manure and plant the crowns in little tufts, a dozen or so in a tuft, almost, but not quite, touching each other, the tops of the crowns appearing just above the soil. A little Cocoa-nut-fibre may be scattered between the clumps, but I never cover the crowns, as I think it rather interferes with the development of the foliage, and as the frames are matted up till the growth is moving freely, there is no necessity for covering the crowns with fibre or Moss, as is frequently done. The crowns can be just as easily forced in boxes or pots or pans as in the soil of the bed. Of course, they can be forced in a close frame or pit without the hot-bed, but for early work the hot-bed is more genial and the crowns start more freely.

It is a good many years since I first forced Lily of the Valley in hot-bed frames. There were no Berlin or Dutch crowns then. We had to depend upon our supply of English roots, and I have no doubt if the German supply failed we could do very well without it. The Lily of the Valley is a British plant and grows freely in the woods in many places. The largest native bed of Lilies I am acquainted with is in Norfolk, and is several hundreds of acres in extent. The wood is not full of trees. Many parts are quite thin, and in the partial shade of these open spots the Lilies luxuriate and produce very fine spikes, and crowns from these particular spots transplanted for a couple of years to good deep rich sandy soil not too much in the shade will produce good spikes early. They must not be planted in the shade if intended for early forcing, or the crowns will not ripen early enough. It is not so much the size of the crowns as the ripening which gives the advantage for early work. I have always found that exposing the crowns to a low temperature before potting or putting into the frame is a great advantage. It seems to make the rest more perfect. I have never had an opportunity of placing them on ice, but as far as possible they are exposed to all the frost which comes in the autumn before they are started in the forcing place, and if I thought a frost was coming I would delay the starting for a week to give them the benefit of it, feeling sure they would make up the leeway and come away altogether, and the foliage also. In February, of course, Lilies will start anywhere. I have often started them in the Mushroom-house, moving them first to a place under the stage in one of the plant houses where the light is subdued, and afterwards they will bear the full light. Retarded crowns can now be had in June or later, and these, if started as soon as received, soon begin to move. It is wonderful how soon the crowns, when in the right condition and in a suitable temperature, respond to the change. E.

A PICTURESQUE MIXED BORDER.

THE engraving depicts a mixed border at Newton Don, Kelso. The bolder groups consist mostly of Larkspurs, Campanulas, and Foxgloves. When in full bloom the effect is very striking. The border has a southern exposure, and to protect it from the north, hardy shrubs were planted, and amongst these the Foxgloves appeared as if by magic. The Foxgloves represented in the illustration were allowed to grow in all the open spaces, and they flowered splendidly, most of them having four to five spikes, some of them over 7 feet in height. Larkspurs are freely used, the varieties chiefly light and dark blue in colour. Canterbury Bells made a brave display, the flowers a mixture of semi-double and single pink, blue, and white. A softness to the whole was given by the lawn in front, and the effect, especially as seen from a distance, was very fine.

A mixed border with plants boldly grouped.

FORCING LILY OF THE VALLEY.

MILLIONS of the Dutch and Berlin crowns and clumps are forced annually. The early-forced flowers frequently have a washed-out appearance, and, being destitute of foliage, are only useful for cutting. The Berlin crowns are better than the Dutch or Belgian for early forcing, but we cannot always rely upon getting them. I once bought a lot of Berlin crowns which I afterwards discovered had been imported from Germany when very small and afterwards grown to a flowering size in Belgium. To be successful early in the season we want strong, well-ripened crowns; this is more important than having a suitable place to force them in. The latter is necessary, of course, but it is useless unless we have the right sort of crowns. If we have the right sort of crowns, there should be no difficulty in getting the leaves to start as well as the flower-spikes. The best place to force Lily of the Valley for merely cutting is an ordinary hot-bed made of leaves

Growing Gardenias in small pots.—Everyone knows the value of Gardenia flowers when cut. The majority of these are cut from plants either growing in large pots or planted out in a bed of strong soil. It is often felt how useful these would be to place in pots in dwelling-rooms, a purpose for which they are to be recommended. When at Hackwood Park in December I saw a batch of the healthiest plants I have ever seen. They were growing in 5-inch and 6-inch pots, and covered with buds. I was told the cuttings were struck every spring.—J. CROOK.

Asparagus Sprengeri.—I saw it stated recently in GARDENING that Asparagus Sprengeri had not yet seeded in England. It is seeding with me now, if enclosed is rightly named.—H. S.

*** Certainly; the shoots represent A. Sprengeri.

TREES AND SHRUBS.

THE CHINESE PLUM (PRUNUS TRILOBA).

THIS Chinese Plum is one of the most desirable wall shrubs we possess, for when on a south or west aspect it is early in the spring quite a mass of coral-red buds, to be shortly followed by bright pink rosette-like blossoms. Though recommended as a wall-shrub this Prunus is perfectly hardy, but the blooms expand so early in the season that they are liable to be injured by late spring frosts, and consequently the protection of a wall is necessary in order to ensure a display of blossoms. Still for all that it is well worth planting in the open ground, for in the majority of seasons it might reasonably be expected to flower well there. Few subjects, again, are better for forcing early into bloom than this Chinese Plum, and if brought on gradually the flowers last for a considerable time. It is a plant grown to a very limited extent, being, as a rule, met with only in a few of the principal nurseries, though from the beauty of its blossoms one would expect it to be a stock plant. The usual method of propagating this Plum is by grafting on to the Sloe, the suckers of which are very frequently great trouble—so much so that we would prefer a good plant on its own roots before half-a-dozen of these grafted specimens. There is another extremely pretty member of the Plum family with blossoms even more double than those of P. triloba. We allude to P. sinensis flore-pleno, an extremely pretty little shrub, with slender branches that are completely clothed with small rosette-like blossoms. There are of this a couple of distinct forms, one in which the blossoms are pure white, and the other in which they are flushed with pink. It can be forced just as readily as Prunus triloba, or it may be employed for covering very low walls. As in the case of the preceding kind, if grafted on to some vigorous stock the suckers will always prove a nuisance. Plants on their own roots should always be obtained, if possible. The grafting evil is not confined to this Plum alone. Clematises, Lilacs, Roses, Azaleas, Rhododendrons, and other shrubs frequently collapse through this practice, when the death is attributed to some other cause. Those who care for their gardens are, we hope, now realising that failures are not due always to the mere treatment the shrub receives, but to a cause little suspected—that of grafting upon unsuitable stock, or through not getting plants upon their own roots—from layers or cuttings—whichever may be most convenient for the respective subjects. It is better to pay rather more for a strong own-root shrub than a grafted one, which is never happy, and too often fails after fruitless struggles against a lifelong throttling.

The Chinese Plum (Prunus triloba fl.-pl.). From a photograph by Mr. W. H. B. Fletcher, Fairlawn House, Worthing.

AZALEA MOLLIS.

DURING the early spring months of the year this Azalea is very valuable grown in pots for greenhouse or conservatory decoration. It can be had in bloom at the time named with but little trouble, and its flowers are borne in such numbers that the whole plant seems to be a mass of blossom. Little bushes of it bristling with flower-buds are imported yearly in great numbers from Belgium, and, as may be supposed, meet with a ready sale in this country, being suitable or potting and forcing at once. There are now a great number of named varieties belonging to this class of Azalea, but most of those imported are seedlings, and consequently there is generally amongst them a good range of colour in the blossoms, varying from pale yellow to orange, and even to reddish-buff, while others exhibit different shades of a pinkish hue. Directly after flowering this Azalea and its varieties start into growth, so that when their beauty is over they should be kept in a frame till all danger of frost is past. When set out-of-doors they may be treated in different ways.

In the first place they can be plunged in a bed of Cocoa-nut-refuse, spent Hops, ashes, or something in that way, and if attended to with water at the roots during the summer each shoot will in the autumn be terminated with a plump flower-bud ready to expand with the return of spring. When forced in numbers, the better way, however, is to plant them out in a bed of soil prepared for their reception, if the soil be loamy, by the incorporation with it of some peat or some leaf-mould. As they like to be kept rather moist, the bed should, if in a dry and hot spot, be formed somewhat lower than the surrounding ground, and provision should be made if possible for watering it when required. It should be situated in a sunny spot in the garden, as in that case the flower-buds are formed more freely than if shaded. At the approach of winter the plants should be dug up, potted, and placed in a cold-frame till required, when it will be found that their blossoms open just as well as if grown in pots the whole year round, and certainly without requiring anything like the amount of attention. If not required for forcing another year they may, after flowering, be hardened off as above described, and then planted out in a shrubbery. They are as hardy as Hollies, and their beautiful blooms are fully as attractive out-of-doors as when grown under glass, though, in common with all early-flowering plants, cutting winds and late spring frosts are apt to injure them. B. H.

FLOWERING SHRUBS AND PERENNIALS FOR SHADY GARDEN.

(IN REPLY TO "SHAMROCK.")

So much depends on the amount of shade to which the flowering shrubs and herbaceous plants in "Shamrock's" garden will be subjected that it is impossible, offhand, to give an accurate opinion as to their success. Light shade, during a portion of the day, from deciduous trees is rather beneficial than otherwise. Dense shade from evergreens is, on the other hand, so detrimental that it is useless to attempt the culture of flowering subjects under such conditions. The following flowering shrubs are all worthy of culture: Snowy Mespilus (Amelanchier), spring blooming; Fringe-tree (Chionanthus), early summer, white flowers; Mexican Orange Flower (Choisya ternata), white, sweetly-scented flowers, summer blooming. This shrub is hardier than its name implies, and withstands many degrees of frost with impunity. Pepper-bush (Clethra alnifolia), scented, white flowers, summer blooming; Orange Ball-tree (Buddlea globosa), golden flowers, early summer; Berberis Darwini, orange flowers, summer; double Deutzia (D. crenata fl.-pl.), white, summer blooming; Escallonia macrantha, pink, early summer; Pearl-bush (Exochorda grandiflora), large white flowers, May; white Rose of Sharon (Hibiscus syriacus totus albus), August; Lilacs, Jew's Mallow (Kerria japonica), and its double variety, orange, summer, sometimes blooming again in the early winter; Ozothamnus rosmarinifolius, white, summer blooming; Syringa (Philadelphus grandiflorus), white, sweetly scented, early summer; Daisy-bush (Olearia Haasti), white, summer blooming; Pittosporum Tobira, white, sweetly scented, May; Flowering Currants (Ribes), pink, spring; Skimmia fragrans, white, sweetly scented, May; Guelder Rose (Viburnum Opulus), white, spring blooming; Bush Honeysuckle (Weigela), pink and white, spring blooming. The Mountain Laurel (Kalmia latifolia) is a beautiful shrub, bearing clusters of light pink-cupped blossoms in May. This subject, however, must be grown in peat or leaf-mould, as must the lovely Lily of the Valley-tree (Andromeda). Other handsome shrubs, which need a warm climate but which flourish in the south-west of England, are Caryopteris mastacanthus, Abelia, Ceanothus of sorts, Clerodendron trichotomum, Desfontanea spinosa, and Olearia stellulata. As regards herbaceous plants, the taller Campanulas, Coreopsis grandiflora, Caucasian Scabious, Doronicum plantagineum excelsum Harpur-Crewe, Gaillardia grandiflora, German Irises, Lychnis chalcedonica, Pentstemon, herbaceous Phloxes, Poppies in variety, and Lobelia fulgens all do well if only slightly shaded; while of taller subjects the Delphiniums, Golden Rod, White Foxgloves, Hollyhocks, Lupines (both herbaceous and tree), and Monk's-hood (Aconitum Napellus) succeed under similar circumstances. The beautiful Blue Salvia patens, if started under glass, will well repay planting, and some of the Spiræas, such as the herbaceous Goat's-beard Meadow Sweet (S. aruncus), and S. Lindleyana, S. ariæfolia, and S. flagelliformis of the shrubby section, make admirable specimens in partial shade, if given plenty of room. Without doubt, however, no class of plants is so well suited to thrive under these conditions as the family of the Lilies, and a succession of these lovely flowers may be had in bloom from May till September. In the reply to "Blue-bird," page 653, "Sham-

rock" will find full information as to good garden varieties and their periods of blooming.

As regards fast-growing climbers, of the perennials, Solanum jasminoides extends the most rapidly in a warm and sheltered situation. In the south-west it will reach the eaves of a two-storied house in a season, and flowers over a period of six months. It is, however, rather tender, and in colder climates would doubtless often suffer severely from the frost. The Blue Passion-flower, as well as its white variety Constance Elliot, is also a rapid grower, and, with the exception of a month in the spring, when it is changing its leaves, remains green throughout the year.

Clematis montana, when well established, increases fast, and is a charming picture when white with its countless blossoms Of annual climbers Cobæa scandens and the Lophospermum are about the quickest growers, and soon cover a large space with foliage and flower. Of the Virginian Creepers Ampelopsis hederacea and A. Veitchi are both of vigorous growth, but it is apprehended that "Shamrock" is in need of flowering and not flowerless climbers.

S. W. F.

Herbaceous Calceolarias. From a photograph by Mr. E. G. Lowe.

The newer double Chinese Primroses.—A familiar greenhouse flower is the old double white Chinese Primula, and there are also the full double varieties, such as Marchioness of Exeter, which are, however, difficult to grow with success. Another race has almost overshadowed this class. The flowers are less double, but charming in form, very bright and varied in colour, and easily grown. At this season in the nurseries of Messrs. Sutton & Sons, of Reading, we may see houses filled with varieties, in which sturdy habit, fine foliage, and beauty of flower colouring are represented. We think the greatest strides have been amongst the blues, the double blue now being a clear, pretty shade, very unlike the bluish-purple colour which we remember before the fine varieties now in commerce were raised. The single kinds are of the same rich blue colour, which if not a true blue, such as one sees in the Lithospermum, is, however, attractive. Amongst the other noteworthy varieties are the crimson, pink, a pretty colour, scarlet, white, and the Moss-curled leaved. The Carnation-flaked deserves a note, the flowers pure white, flaked pleasingly with purple and carmine. The Moss-curled is a distinct class, in which the leaves are curled or "mossy," as one might say, the flowers varied in their colouring. These double forms are very useful for cutting, as the flowers last longer than those of the single kinds. We hope that they will be grown far more extensively in the future, as variety is required in the plant-house during the winter. No flowers are brighter, freer, or more thoroughly useful than the double Primulas, and in no race are the colours more decided. The plants are readily raised from seed or by cuttings.

INDOOR PLANTS.

HERBACEOUS CALCEOLARIAS.

We do not see these Calceolarias generally grown well in private places, as oftentimes they have to share positions in houses with other subjects quite unsuited to them. Treated in this way they generally fall a prey to green-fly, which is their greatest enemy. The habit of growth, compared to what it was a few years ago, is also much improved by careful selection, as to render this plant much more desirable in every way. To have the plants in full flower by the end of April or early in May, the seed should be sown thinly in large pans about the first week in June, using a compost of half peat and leaf-mould, adding to this a plentiful supply of silver-sand, the whole passed through a fine sieve. By sowing the seed thinly the seedlings do not grow up weakly, a circumstance to be avoided, as a sturdy growth at the start makes all the difference between success and failure in the future. Many cases of failure in obtaining a sufficient number of plants might be traced to allowing the soil to become dry during the germination of the seed. If the soil is moist no water will be required for a time, but when water is required it should be allowed to soak through the bottom of the pan until the whole mass is thoroughly moist, care being taken not to wash the seed off the surface. Thoroughly drain the pan by filling it three-parts full of crocks, and over these place a layer of rough leaves, pressing the soil firmly in the pan, and maintaining an even surface to within half an inch of the rim. Upon this surface sow the seed thinly, gently pressing it down, and covering the whole with white sand, which favours the quick germination of the seed and induces a quick rooting of the plants. Over the surface of the pan place a square of glass, covering the same with Moss, which assists in retaining the moisture in the pan, or a piece of slate, which preserves the moisture better than glass, may be placed over the top of the pan. Place the pan in a cold-frame behind a north wall. The seed will quickly germinate, and as soon as the seedlings appear above the soil admit air by slightly tilting the glass on one side and removing the shading, and if slates have been used, substitute glass. As growth progresses remove the glass entirely, and give a little air to the frame. When the seedlings are large enough to handle, transplant them carefully into other pans about 1 inch apart, using the same kind of soil, with the addition of some loam, sifting all fine as before. Return them to the frame, and keep close for a few days until the roots have taken to the new soil. Gently dew the plants overhead with tepid water, and admit air gradually as growth proceeds.

When the leaves touch each other the plants will be ready for their first shift into pots 2½ inches in diameter, using rather more loam and not sifting the soil so fine; return the plants when potted to the frame. By keeping the frame under a north wall during the summer months shading is dispensed with—an important item in the culture of these plants, as it often happens that when the frame is placed in a sunny position sufficient moisture is not maintained about the plants, and they fall a prey to the green-fly, which, if not quickly eradicated, soon cripples the plants to such an extent that they hardly ever retain that vigour which is essential to success. During the summer months a damp atmosphere within the frame must be preserved, the plants standing upon a thick bed of coal-ashes. As soon as the roots reach the sides of the pots, and before they are in the least pot-bound, shift them to a larger size, according to the size of the plants, until they are in their flowering-pots. Some of these may be 10 inches across if large specimens are required, while they will so vary in size that some will remain in 6-inch pots, in which they are very useful for decoration in various ways. After the first shift the soil may have more turfy loam and a small quantity of horse manure partly decomposed added to the previous mixture, and leaving out some of the peat. For the final potting, which usually takes place in January when the plants are in their winter quarters, the compost should be as follows: One part good fibrous loam of a light character, one part leaf-mould and partly decomposed horse-manure, half a part of peat, some finely ground bones, some charcoal and sand, using all in a rough state, and potting lightly. Do not place the plants deeper in the pots than previously, as sometimes, owing to an excess of moisture, they damp off at the collars.

About the middle of September, or sooner should the weather be cold and dull, the plants will be benefited by a change of quarters—viz., by placing them where they will obtain more light and a little sun. Still resort to shading them if the sun be very strong, and admit air freely to the plants by tilting the lights, gently syringing them overhead every evening. Retain them in this position as far into the month of October as is safe, covering the frames each night in case of an early frost injuring them. When the plants are not considered safe in the frame, or at all liable to lose their foliage by damp, remove them to a cool-house where the temperature is kept so that frost does no harm. Beyond this no fire-heat will be required, beyond an occasional warming of the pipes to dispel damp during foggy or damp weather. Great care should be used in watering them. Never water unless it is required, and, if possible, always use soft or rain water in a tepid state. When the plants are thoroughly established in their flowering-pots some stimulant will be an advantage. Nothing is better than occasional doses of—say, every second time water is required—weak liquid-manure, that from sheep or cow-manure being the best. Early in March the flower-stems will begin to throw up above the foliage; these will require

some support, which is best done by placing to each a small stake. By training the flower-stems in an outward direction those growing from the middle of the plant will have room to develop thoroughly, and thus prolong the display and preserve the colours in their proper character. A light shading should be placed over the glass, as the richer colours quickly lose their brilliancy under a hot sun during the months of April and May.

If the plants are allowed to become pot-bound or dry at the roots they seldom regain their natural vigour. When there are any signs of green-fly on the leaves, smoke the plants with Tobacco in the evening, and again in the morning, as the second application will effectually destroy any that may be left alive from the first dose. After this give the plants a good washing with the syringe, which will leave all sweet and clean. M.

USEFUL FLOWERS FOR WINTER.

The most useful flowers for cutting just now would include Daffodils, single and double, but more of the former than the latter. Roman Hyacinths and the miniature French Hyacinths are useful, and can be had in various colours. Lily of the Valley is not difficult to force when the crowns are of the right sort and well ripened, but there must be plenty of heat to push them out quickly. Azalea Deutsche Perle is one of the most useful things we have, and if the plants are managed properly and kept in good condition they will flower almost naturally at Christmas after being forced one or two seasons. Of course all flowers are wired nowadays. Freesias are charming little flowers for cutting now, and if potted early only require greenhouse treatment to get them into bloom by Christmas, but they should be potted in August and the bulbs must be large and well ripened. There is a very large demand for Daffodils just now, and these also may be had in bloom at Christmas and the new year if potted and boxed early—*i.e.*, as soon as the bulbs can be obtained. My first lot is boxed in August as soon as they come to hand. I never plunge; the work would be too heavy where thousands are grown, neither is it necessary. I generally plunge the first batch of Hyacinths; it keeps the bulbs in an equable condition as to moisture, and the bulbs keep their position better in the pots when plunged. Tulips, red, yellow, and white, are useful, and such kinds as Artus, Yellow Prince, and Immaculata force well and have fairly long stalks—a necessity for cutting. Arum Lilies, Eucharis Lilies, Tea and other Roses, Indian and other Rhododendrons, and the little Red Azalea amœna, come in very useful for cutting now. Double Scarlet "Geraniums" must have a brisk temperature and a very light position to get many flowers. The same treatment will suit Euphorbia jacquiniæflora. Let the plants grow freely and get the wood ripened, and there will be plenty of long scarlet wreaths to cut.

We want flowers that hold their petals and that keep fresh a long time in a cut state. All flowers before being packed are better for being placed in water for a short time before packing. This will be more needed by-and-bye than now. E. H.

The Star Primula.—This is a thoroughly artistic flower, as free as the native Primrose, and as graceful as anything the greenhouse can offer in winter. We recently noticed a houseful of it in Messrs. Sutton's nursery at Reading, and welcome it, because so different from the ordinary Chinese Primula, which is sturdy in its growth and rather formal in its arrangement of flowers. The Star Primula produces slender spikes, considerably over a foot in height, bearing tiers of flowers of distinctly star form, but not weak, the petals individually being broad, though not overlapping or touching, as in the case of the more familiar varieties. The white variety is very beautiful, but there are other colours, pink for example, and the range of colours will probably be considerably extended in the near future. These long stems are naturally of much value for cutting, and a few specimens in bloom, each a pyramid of flowers, are effective.

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ORCHIDS.

DENDROBIUM SPECIOSUM.

The subject of the accompanying illustration, D. speciosum, is a native of Australia, confined chiefly to the neighbourhood of the east coast, where it is known as the "Rock Lily." It was one of the first Australian Dendrobiums introduced into this country, it having been sent to Kew Gardens so long ago as 1823. Its flower racemes are probably the largest yet seen in the genus, often measuring from 20 inches to 30 inches in length when well cultivated. The plant, while in flower, forms a striking object if arranged with other Orchids possessing more showy flowers. D. speciosum is a plant that is often discarded by many growers who are under the impression that it is difficult to get it to bloom satisfactorily. This is anything but correct if it is properly treated; if subjected to the moist, hot, close temperature of the plant, stove, or East Indian-house, it will keep on growing year after year without producing the semblance of a flower. Its flowering season is usually about March. At the present time the plant should be in the ordinary greenhouse, where the temperature is about 50 degs., placing it in the lightest position available, and afford but little water till the flower-stems show, when the plant may be removed to a slightly warmer temperature, and water at the roots should be given oftener. When in full bloom, if placed in its former quarters in the greenhouse, it will keep in beauty for five or six weeks. When the flowers fade give the plant generous growing treatment in the Cattleya-house, or in a house where Vines are in full growth, placing it well up to the roof glass. When the young growths are completed, allow the plant to go to rest with the Vines, affording no water until within a few weeks of its proper flowering season. Anyone having an ordinary warm greenhouse could grow and flower this species as freely as any of the genus if the above directions are closely attended to. W. B.

Flower-spike of Dendrobium speciosum.

Cattleya Trianæ unsatisfactory *(C. Reader).*—Without doubt your plant of Cattleya Trianæ has had too much moisture either at the root or in the atmosphere. Your Cattleyas will not need repotting unless they have overgrown the edges of the pot, or if the compost has become sour or decomposed. The proper time for repotting is when new roots are seen pushing from the base of the current season's flowering growths. Their principal growing season is from March to September.

MILDNESS OF THE WEATHER.

In proof of the exceeding mildness of the present winter, I think a list of the flowers that were in bloom here last week, the first in January, may be of interest. The garden is situated nearly 1,000 feet above sea-level, on the Cotteswold Hills, and is by no means sheltered. The true winter flowers are grouped together on rather an isolated piece of the rock garden, which I term "The Winter Rockery." Here are planted Winter Aconites, Snowdrops, Cyclamen Coum, Violets, Winter Jasmine, Laurustinus, Winter Heliotrope, Erica carnea, both the pink and the white form, the latter especially in a sheet of bloom now, Iris stylosa, and the little diamond flower, is another sheet of bloom; Christmas Roses, and a green-flowering Hellebore, and Hepatica triloba; and in a sheltered nook the yellow Crocus vitellinus, with the little purple flowers of Crocus Imperati just showing, hard by. All these were in bloom last week, and still are, which, with some evergreen plants of varied foliage, such as some of the New Zealand Veronicas, Shortia galacifolia, with its bright red leaves, Spanish Gorse, (Hedera madeiriensis), and a few more, make the rock garden look quite gay. Many Wallflowers are out, and the breadths of Aubrietia, Forget-me-not, and White Arabis have many a stray flower, as also have the Geums, and Potentilla splendens, and the pretty white Scurvy Grass, which, by-the-way, is no Grass at all, but a free-blooming carpet-plant in the bog garden. Many Polyanthuses are in flower, and I picked a good-sized bunch of Periwinkles and Primroses, among which were some very fine-coloured red ones. Double pink Daisies are in full bloom, and Daphne grandiflora and D. Blaagayana are bursting their buds. Gorse has more than its usual sprinkling of winter flowers, and I picked some nice bits for the house. Many little Daisies and a Dandelion or two are peeping out among the Grass. Curiously enough, the three winter-flowering Irises, alata, Histrio, and Histrioides, have not flowered with me this year, nor has Sternbergia lutea. Winter Sweet, alas! I never can bloom. V. S. K.

Hardy flowers in South Wales—a January gathering.—I am sending a Narcissus by this post, and I should be much obliged if you can tell me the name of it in your paper? It was gathered to-day quite in the open, and it is earlier than any other Narcissus I have, and always has been. It is very nearly as early as Snowdrops. This is a sheltered spot, and not more than 300 yards from the sea, and in March our Camellias are in full bloom. I counted 1,000 blooms and more and buds on an alba-plena tree

last March. I enclose you a few other flowers that are out in the open.—John Worthington, *Clyn-y-mel, Fishguard.*

*** The Narcissus is the Polyanthus Narcissus Soleil d'Or. With it came a delightful gathering of hardy flowers. There were Pyrus japonica, Blue Daisy (Agathæa cœlestis), Cape Pondweed (Aponogeton), Polyanthuses, the Banksian Rose, other Roses, Winter Gladiolus (Schizostylis coccinea), Daphne indica, Snowdrops, early Crocuses, and other flowers.

Glory Pea (Clianthus puniceus) from Falmouth.—By Parcels Post I send you a few cuttings from a tree full of flowers of this Clianthus. It shows what a very mild winter it has been here. It has been admired by many. It is, of course, grown outdoors, although, as a rule, a greenhouse plant. It has, however, never been under glass, nor has it been protected in any way. I have also in bloom several Rose-trees; also Raspberries quite ripe. I thought you would be interested, so have sent you a few cuttings of the Clianthus. —R. Fred Gory.

Mild weather in Ireland.—As an example of the extreme mildness of the weather in the county of Tipperary, I may mention that I saw in my garden to-day (Jan. 11th) the following flowers: Roses, Mignonette, Brompton Stocks, Cytisus, Auriculas, Polyanthuses, Violets, Anemones, Veronicas, Jessamine, Berberis, Escallonia, Laurustinus, Solanum jasminoides, Pyrus japonica, and Christmas Roses. There are also, in stone vases in a northern aspect, "Geraniums" and Calceolarias which were put out in May; some of the former are still in flower.—Merlin.

GROWING CYCLAMENS FROM SEED.

As so much has been said lately upon the cultivation of the Cyclamen in Gardening, I thought perhaps a few words upon the treatment I give them may not be out of place.

I usually sow the seed about the second week in January in well cleaned pans, soil consisting of equal parts of loam and well decayed leaf-mould and sand. Sift the whole through an half-inch sieve, placing the coarse part of the soil in the bottom over the crocks, and then about an inch of the fine soil upon the top. The seeds are placed thinly over the surface and covered with a little of the fine soil. After watering, the pans are placed into an intermediate-house for the seed to germinate, and there allowed to grow until ready for the first potting. When the plants have reached this stage they are taken from the house and placed in a pit where there is a little artificial heat, and there grown all through the summer. In my opinion it is at this stage that a great many err in Cyclamen culture.

It is the practice with many to take them from the seed-pan while very young with a tiny bulb having one little root or so, and the leaf in a very rudimentary state of development. In this condition they are placed into single pots when they have not the strength to stand the shift.

If placed thinly in the seed pans they can be let grow and make three or four leaves before being removed. They can be lifted with quite a small ball of roots and placed in single pots, using soil composed of three parts loam, two-parts leaf-mould, and two parts well-rotted manure. Treated in this way the check is reduced to its minimum, and the plants grow away rapidly. Every attention must be paid to watering and shading during the hottest part of the day, with an atmosphere moist and sweet. It is not long before the plants fill the pots with roots. They are then shifted into pots 6 inches in diameter, in soil consisting of two-parts loam, one part leaf-mould, one part well-rotted manure, and sand enough to make the whole porous. It is a great advantage at the potting to mix a few nodules of charcoal with the crocks. It tends to keep the soil sweet, and the plants also draw support from it. After shifting they are kept close for a few days to encourage root-action, after which they are given plenty of air and shaded through the hottest part of the day. Early in the afternoon the blinds are removed, the house closed, and the plants syringed overhead.

The plants receive this treatment until September, when the whole are stood upon inverted pots well up to the glass, with lights open day and night, and the genial September air courses about them freely. This solidifies the growth and prepares them for the dullest months of the year.

When October arrives a little warmth is given through the pipes, with less air, but the plants are kept on the inverted pots throughout the year. As soon as they reach the age of eleven months they are allowed to commence flowering, but up to this age no flowers are allowed to expand on any account. They are removed as soon as the buds show, so that the whole energy of the plant is utilised in growth. Then when they are let flower the quantity they produce through the winter and spring months is astonishing.

With respect to manures for Cyclamens for potting, there is nothing equal to well-decayed horse-manure. I have a strong objection to cow-manure for the Cyclamens, as it always contains a very large quantity of the eggs of different beetles. I have tried the two manures side by side, and have always found that with plants potted in the cow-manure I have invariably lost some through one or another species of grub. As to artificial-manures, there is nothing equal to nitrate of soda for rapid and healthy growth of the Cyclamen. Insects—by far the most troublesome of these are the thrips, which may be kept down either by fumigation or spraying with some insecticide. I prefer for spraying, petroleum thoroughly emulsified.

Some growers practise the dipping of their plants. This I think altogether a wrong proceeding. In the first place, in dipping a plant with leaves the size of those of a Cyclamen one cannot fail to do harm, no matter how carefully the operation is performed. As soon as they become disturbed in their axis upon the crown of the corm, they shown signs of a premature falling off. Another objection to the dipping is that, whatever they are dipped in, a portion always gets down upon the crown of the corm, which proves very detrimental to the young growths.

Barring the fumigation, spraying should be resorted to, and if the insecticide is applied with a spray pump or syringe thinly over the leaves insects are soon dislodged. In fact, it is wise to spray occasionally when clean and in health. It keeps off every kind of insect by destroying whatever may be lurking about in its young state, thus preventing what might become a troublesome pest. In no case is the proverb "prevention is better than cure" more applicable than when used in relation to insects and plants. R. W. Hodder.

Ponsonby, Torquay.

*** With this interesting article was sent a photograph of six splendid exhibition plants grown by Mr. Hodder.

ROSES.

ROSES FOR SHELTERED BORDER.

A border 56 feet long, 6 feet wide, facing west, fairly sheltered, to be planted with Roses. A row of two standards at the back, Roses on their own roots in front. Would three groups of distinct colour look well—pink, yellow, and white, or blush? If so, the name of suitable Roses requested with number required. Each group could be 19 feet by 6 feet. Any advice on the arrangement of this border will be welcome.—X. Y. Z.

*** "X. Y. Z.'s" Rose-border would contain somewhere about 100 Roses. Such a border filled with Teas would be very beautiful. The colour gradations of the Tea Roses are so soft that the mingling of many varieties does not create an unharmonious picture, whereas if brilliant-tinted Hybrid Perpetuals are dotted about among the Teas an inartistic effect is produced. If Hybrid Perpetuals are required it might be well to relegate them to the middle section of the bed, leaving the two ends to be filled with Teas. If this plan be adopted the centre of the Hybrid Perpetual group should consist of the brightest-coloured varieties, such as General Jacqueminot, Duke of Edinburgh, Victor Hugo, Ulrich Brunner, Prince Camille de Rohan, Dupuy Jamain, and Madame Gabriel Luizet, shading off into pinks and whites at the edges with such Roses as Mrs. John Laing, La France, Grace Darling, Viscountess Folkestone, the latter three being Hybrid Teas, Captain Christy, Margaret Dickson, and Gloire Lyonnaise. Of the Tea section the following varieties will be found good: Marie Van Houtte, Madame Lambard, Catherine Mermet, Hon. Edith Gifford, Madame Hoste, The Bride, Francisca Kruger, Madame Charles, Ethel Brownlow, Madame de Watteville, Innocente Pirola, and Ernest Metz, while L'Ideal and Ma Capucine are worthy of a place for their wonderfully-tinted buds, although owing to their semi-single character their beauty is transient. A very lovely Rose of the China section is Laurette Messimy with blossoms of pale rose, suffused with amber. It is very free and blooms well on into the autumn months. During September and October beds of this Rose are beautiful pictures. Tea Roses, with their lengthened period of bloom, are better garden Roses than the so-called Hybrid Perpetuals, which are anything but perpetual in character. The Teas commence to flower in May, wall-plants much earlier, reach the zenith of their beauty in June, and are not flowerless until late autumn, should the weather remain open, whereas, with the Hybrid Perpetuals, the saying "It hastes it wastes, the month of the Roses," holds good—an opulence of beauty for a month, but no long season of attractiveness. "X. Y. Z." would, therefore, be well advised to confine the proposed Rose border to the Tea section, planting, say, ten varieties in groups along the border. This would give a space of about 6 feet square for each variety, the standards in every case being identical with the bush plants at their feet. "X. Y. Z." says that the bush plants are to be "on their own roots." Probably all that is meant by this is that they are to be dwarf plants, in contradistinction to the standards. Roses on their own roots are not to be recommended for furnishing a bed, as this growth is too slow in the earlier stages. Worked plants on the seedling Brier, or, better still, the seedling Sweet Brier, will make as fine bushes in two years as own-root Roses will in double the time, and, if planted so that the junction between the scion and stock is beneath the ground-level, roots will soon be emitted from the scion as well as from the stock, so that the bush eventually becomes an own-root Rose, though starting life as a budded plant.

Here and there at the front of the border, between two groups, a space might be left for a few plants of Laurette Messimy and Ma Capucine, neither of which are strong growers.

From 1 foot 6 inches to 2 feet is far enough apart to plant the Roses. If a greater distance is allowed the bed has an unfurnished appearance, unless the spaces are filled up with herbaceous or other plants—a plan that should on no account be adopted. No plants should be allowed to share the Rose-border with its natural occupants, except such as may be useful for carpeting the bed, and thus showing off the Roses to the best advantage.

Rose-pruning—a warning.—Mr. Foster Melliar, in his useful book of the Rose (p. 69, edition of 1894), advises that in dealing with Maréchal Niel under glass the yearly growth should be cut down, after the blooms have been gathered, to the main horizontal stem, which has been trained as far as the length of the greenhouse will allow; and he presents his readers with two photographs—one showing the Rose in full bloom with a wealth of one season's wood, and a second showing the same tree cut back to the old wood. I write to warn novices of the importance of noticing these remarks, which insist upon the long rods, the season's growth, after flowering, to be cut back gradually, for if this caution be neglected the young rosarian will repeat my sad experience. I followed exactly Mr. Melliar's instructions in planting and in training the two horizontal shoots, from which in due time sprang the strong, fresh rods which covered the roof of the greenhouse, and which, in the early spring of last year, gave an abundant harvest of blossom. The tree was the admiration of my friends. In April last, however, I cut away the whole of the new growth which had carried the crop of Roses, overlooking the necessary caution that this must be done gradually to avoid a violent check to plant life. Alas! from that day to this the amputated Maréchal has sulked.—A Young Rose-grower.

OUTDOOR PLANTS.

JASMINUM NUDIFLORUM.

THERE is no brighter winter flower than this climber, which is now full of colour from its flower-laden leafless shoots. When the shoots are cut and placed in water the buds open well, and last fresh many days, whilst their fragrance is sweet and moderately strong. The plant grows almost anywhere, and should be in every garden, however small. This Jasmine flowers

Flowering-branch of the Winter Jasmine (J. nudiflorum).

on the young wood, and if clipped quite close a good many of the blossoms would be cu away unless the clipping was done immediately after flowering. The best time to prune is early in spring, and then long flowering sprays will be obtained.

THE DOG'S-TOOTH VIOLETS OR ERYTHRONIUMS

ARE a beautiful group of easily-grown bulbous spring flowers. The commoner kinds, E. Dens-canis and its varieties, have long been grown in our gardens, and are well known for the faithful and persistent manner in which they appear year by year, and flower in shrubbery borders or the like with little or no care; indeed, there are no more beautiful things than these on grassy slopes with a warm, sunny exposure; or, again, a very pretty effect is created by planting such things to succeed the Winter Aconite among American plants of shrubby habit, or for a carpet among the hardy Azaleas these things are very pretty and give no trouble. It should, however, be stated that Erythroniums cannot be kept in the dry state out of ground very long without injury or decay. When dividing and replanting are necessary, they may be done during the summer months, replanting the bulbs in their fresh positions without delay. The common Dog's-tooth Violet (E. Dens-canis) is abundant in some gardens, and for naturalising is among the best of early flowers. Most soils, excepting those of a heavy clayey nature, will suit these ordinary kinds, while the several species and varieties of American origin are best suited in sandy loam, or this and peat combined.

ERYTHRONIUM AMERICANUM has blossoms of a golden-yellow, very pretty and decided in colour.

E. GRANDIFLORUM is a handsome kind, the foliage beautifully marbled, and producing pale yellow blossoms which have an orange-coloured base. The flowers are very large, and produced in profusion, often four to eight on a single stem. This plant is best suited in a slightly moist and shady peat bed, or peat and leaves in equal quantity.

E. HARTWEGI and E. HENDERSONI are also choice kinds equally well suited for a like position, and in the same company should also be found

E. SMITHI, a fine variety, bearing white blossoms delicately tinted with lilac. In all these, however, we have characters linking them, as it were, into one chain more or less either in foliage or flower.

E. JOHNSONI will be a decided acquisition as well as an addition to this beautiful race. It is, in fact, a new and decided shade of colour hitherto unknown, and as such will be welcomed by all lovers of rare and beautiful hardy flowers. The scape is said to attain 10 inches to 12 inches high, so that it will prove a handsome plant when well established. The colour is a reddish-pink hue, deeper on the outside, while internally a paler hue prevails, together with a zone of orange-yellow at the base of the petals. It is a native of the coast ranges of Southern Oregon, where it was discovered by Mr. A. J. Johnson, whose name it bears. J.

Hardy annuals for border.—I have in my garden a border, 90 feet long, 3 feet wide, facing south, and sheltered from the north by a 6-feet oak fence, upon which are trained fruit-trees. The soil is sandy gravel. I am anxious to plant this with hardy annuals, which I can raise from seed to be sown in the border. I should greatly appreciate any suggestions you can give me.—M. I.

*** There are many annuals from which "M. I." can choose for beautifying the long border: Clarkia pulchella, blue Cornflower, Coreopsis Drummondi and C. atrosangineum, annual Chrysanthemums, the white and the pink Cosmos bipinnatus, which will grow from 2 feet to 3 feet high, and flower in the autumn; Eschscholtzias, annual Gaillardias, Godetias Duchess of Fife, Lady Albemarle, and Duchess of Albany; Linum grandiflorum coccineum, Love in a Mist (Nigella), French Marigolds, Mignonette, Malope, single Petunias, Limnanthes Douglasi, Princess Alice Stock, Sweet Sultans, and Shirley Poppies. As the soil is light these may be sown at the end of March, while, later on, towards the end of April, Asters, Lobelia, Phlox Drummondi, Salpiglossis, and Zinnia can be sown. The general reason of failure with annuals sown in the open border is that the seed is put in too thickly. This is an absolutely fatal mistake, as the plants immediately exhaust the soil, and therefore perish quickly. The seed should be sown very thinly, and the seedlings thinned out to 6 inches apart as soon as they can be conveniently handled. Further thinnings will be necessary as the plants increase in size, for a better effect is produced by one plant filling a given space than if four or more take up the room that can be amply furnished by one. It is owing to the thoughtless manner in which annuals are too often sown that this method of culture in the open garden has somewhat fallen into disrepute, and that the practice of raising the seed under glass and planting out the seedlings later on has taken its place. Naturally, when the latter plan is adopted, the seedlings are planted at some distance from one another, and therefore are not starved to death or decrepitude. The vigour with which self-sown seedlings grow is proof positive that, given favourable conditions, they will succeed better when sown where they are to flower than under any other method of culture. Last spring a self-sown plant of blue Cornflower sprung up, which eventually reached a height of almost 4 feet, and had a diameter of 3 feet. Naturally, "M. I." must not expect his annuals to come into flower as quickly as those which have been raised in heat and planted out, but if the border is fairly rich, the seed is sown thinly, the seedlings rigorously thinned out, and the plants well watered when necessary, the results should eventually prove satisfactory. The seed should not be sown in straight lines. There should be no lines in flower-gardening, except those that the limits of a bed render unavoidable.—S. W. F.

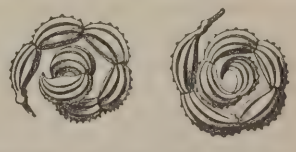
Best Cactus and show Dahlias.—Would you kindly give me, through GARDENING, the names of twelve of the best Cactus and six of the best show Dahlias that would be most profitable for an amateur to grow? Also six of the best Pentstemons that would yield the greatest satisfaction? I mean, of course, named varieties. Do you know of any blue herbaceous or annual that would make a good display along with the white Canterbury Bell? Perhaps about 2 feet to 2½ feet high. I am anxious to get this for the coming summer.—A. B., *Glasgow.*

*** The following varieties are good show Dahlias: Agnes, Canary, and Primrose Dame, yellow; Diadem and John Wyatt, crimson; Alexander Cramond, George Rawlings, and Rev. J. Goodday, maroon; Glow-worm and W. H. Williams, scarlet; and Mrs. West, rose. Of Cactus Dahlias some of the best are: Daffodil and Lady Penzance, yellow; Mrs. A. Peart and Mrs. F. Fell, white; Starfish, Gloriosa, and Mayor Haskins, scarlet; Bridesmaid and Delicata, pink, shaded sulphur; Matchless and Night, maroon; Beauty of Arundel and Cycle, crimson-lake. The following florist's Pentstemons are attractive flowers: Annie Gordon, white, edged carmine; Constance, salmon-rose, white throat; Mauve Queen, mauve, white throat; Mrs. W. H. Martin, crimson-magenta, striped throat; Mrs. Wills, claret, white throat; President Carnot, very large, red, white throat; Racine, violet and brown; and William Piercy, pale salmon-rose. Perhaps the blue Cornflower would suit "A. B.'s" purpose for growing with the Canterbury Bells. It is one of the few really blue flowers of any height flowering at that time. Camassia esculenta would bloom in July, but this would be rather late for the first flowering of the Canterbury Bells. Campanula grandis, the type, has handsome purple flowers and is a June blossomer, and the purple Tradescantia virginica also commences its blooming season in that month.

GARDEN PESTS.

Destroying insects under glass.—Just a year ago I burnt my last tobacco-paper, and purchased a set of lamps and a stock of nicotine, and have never had any trouble with insects since. Before I changed my system insects were a trouble, for, having a number of houses all filled with plants of various kinds, one or other of them continually required attention. I have often had an uncomfortable evening after being half stupefied with the smoke. Now when I see any insects on Pelargoniums, Roses, or other plants, all that is required is to shut the house up, close and put damp paper over any cracks or crevices in the glass, and light two or more lamps, according to the size of the house. My largest house (100 feet long) takes eight lamps, and the smallest two. The nicotine is poured into a copper dish and placed over the lamp. The lamps are small glass bottles and are charged with methylated spirit. The apparatus altogether is composed of three pieces: first, a small glass lamp, which may be stood on the floor of the house; second, a perforated zinc cullender open at ends, which is dropped over the lamp; and a small flat copper dish, which is placed on the top of the zinc cullender immediately over the flame of the lamp. When I used tobacco-paper there were often living insects after the smoking, but with the vaporiser there is nothing left alive, and the plants remain clean for a long time afterwards. This is the greatest boon the gardener has received for many years; insect destruction is now an easy matter. —H.

The Caterpillar-plant *(R. J.).*—This is the Scorpiurus subvillosus, and belongs to the Pea family. It is not important, and is so



Caterpillar Plant (Scorpiurus subvillosus).

called because of the curious pod which is not unlike a caterpillar or the tail of some reptile. We give an illustration of the pod, which shows its character better than a mere description.

The Garden Part.—*Now ready, for January, 1898 containing all December, 1897, Nos.), with four beautiful coloured plates of flowers, also many articles on the best and newest plants, with numerous illustrations. Of all Newsagents and Booksellers, 1s.; or from this office, post free, 1s. 3d.*

BOUVARDIAS.

IN growing Bouvardias successfully, gardeners in the south have a decided advantage over those in the north, inasmuch as the latter, owing to climatic influence, have mainly to keep to pot culture under glass, and although good plants are raised in this way, the quantity of bloom is not nearly so great as can be obtained from plants which have been planted outdoors during the growing season. The chief reason why Bouvardias do not succeed well in many gardens is due, I consider, to giving the plants too much heat and not affording a season of rest, as I find when kept in a humid house the growth becomes weak compared with that of plants given full exposure. The advantage gained by planting in a sheltered outside border, when given ordinary care and attention, over plants that have been raised in pots will be patent to all who are in a position to give both systems a fair trial. Pot-plants whose roots are restricted are naturally less vigorous than those that have more freedom, and the shoots, therefore, cannot stand so much stopping, with the result that the one plant is twice the size of the other by the end of summer. This is not all, as those with the greatest amount of healthy roots are in a condition to throw up strong growths from the base after the plants are housed. These in turn will give a second crop of bloom equal, if not superior, to the first lot, while the plants by being fully exposed require little or no fire-heat until frost is sufficiently severe to necessitate its being used, and the flowers thus produced having more substance will stand much longer when cut.

RESTING THE PLANTS.—As the plants go out of flower towards spring, a few weeks' rest will be beneficial by withholding water from the roots and placing them in a dry house or pit, which will induce most of the foliage to fall, the same as one would treat Fuchsias in the autumn. The wood will then become well ripened and will break more strongly when the time arrives for cutting the plants back and starting them again into growth, which should be towards the end of April.

STARTING THE PLANTS at this date may appear rather late, but I find nothing is gained by doing so earlier, as then fire-heat would be required, which, as before stated, causes weak growth, and to build up strong plants, cool treatment with plenty of air from the first is very necessary. The plants after having been cut back should be placed close to the glass in a cold-frame, water being withheld until growth has commenced, encouraging this by dewing the plants over each evening and closing the lights. As the young shoots appear more air is afforded; in fact, the lights may be removed entirely during mild showery weather, and by being fully exposed to the sun the growth at first may appear slow, but it is very sturdy and very different from that made in a close, moist atmosphere.

By the end of May or beginning of June, the shoots having attained an inch or two in length and just as the roots become active, the plants should be placed in their summer quarters, which should be a sheltered border, but fully exposed to the sun. Before doing so, however, see that each ball is thoroughly moistened, and in planting, carefully reduce most of the old soil. If the soil is fairly good it is not necessary to manure the border previous to planting, but add a spoonful or two of good compost round the roots as the work proceeds, the aim being to keep these close to the stem. The plants should be placed quite 2 feet apart, as when closer they are apt to get thin at the bottom before autumn. One or two waterings may be necessary to start the plants, after which the chief thing required is regularly stopping the shoots, and as growth will be rapid, the plants should be looked over for this purpose every fortnight, the last stopping taking place towards the end of August or some ten days before the plants are lifted. In lifting the plants, select a dull day, if possible, and see that the soil is thoroughly moist before doing so. If it is decided to flower the plants on the borders in Melon or Tomato-houses, all that is necessary is to lift the plants with a good ball of earth, filling in between the roots with good soil. Give a copious watering, keep the foliage well syringed, and afford plenty of ventilation. The plants will soon become established, and will not fail to give abundance of bloom from the end of November onwards. It is not, however, in all gardens that houses can be devoted to these plants, as they are often required for other things early in spring before the Bouvardias have done flowering, in which case it would be better to pot the plants, so that they can be taken to different houses as required. The advantage gained by pot-plants is that they can be kept outside much later, which will not only retard their flowering, but the plants become well established before being placed under cover.

I have a houseful of plants which have received this cool treatment just coming into bloom. They are all that can be desired, and will supply an almost unlimited quantity of bloom for some months to come. I may add that though all varieties have done remarkably well I find that the double ones require a little more warmth when the flowers are opening. R.

RULES FOR CORRESPONDENTS.

Questions. — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2594—**Raising Narcissi from seed.**—Will you please give directions as to sowing and treatment of seedlings, and say how long it is before they bloom?—M.

2595—**Difference between Roses.**—Will you tell me the difference and what characterises the various kinds of Roses—viz, Hybrid Perpetuals, Teas, Noisettes, Bourbons, etc.? I have been trying to find out what does constitute the difference in them, but have been unable to do so.—BOURNEMOUTH.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2596—**Apple Hoary Morning.**—I have had Hoary Morning for sixteen years at least. It is a handsome fruit, but the worst bearer I have out of more than sixty varieties. I have grafted mine with Lane's Prince Albert.—O.

2597—**Water-proofing calico** (*R. W.*)—Take a gallon of boiled linseed-oil, which can be purchased from any wholesale chemist, two-thirds of a pint of Terebene, and enough ochre to make the whole of such consistency as to be easily applied with the brush. As before observed, two coatings will suffice, but the first should be allowed to dry before the second is added. The drying of each coating takes a few days, so there is no time to lose if the sheets are to be ready by the time they are wanted.

2598—**Punnets** (*J. H.*).—The town of Brentford, Middlesex, is very much a centre of the fruit-punnet and basket trade, and you may be enabled to obtain what you want in punnets if you write to Mr. Dear, basket-maker, near the Gasworks, Brentford. Or you may, if you want a large quantity, advertise your want in the *Brentford Independent*. A common price for pound punnets—that is, such as are about 6 inches across the top—is 4s. 6d. per gross. Much depends on the time of year when ordered. The price is lower now than later in the season.

2599—**Fowls'-manure** (*W. A S.*).—Chickens'-manure has a certain manurial value alone, but is best when mixed with horse-manure, or with decayed vegetable soil, or even with ordinary soil, for some time ere it is applied to the ground. This should be used thinly. Good laying Fowls are Black Spanish, White or Black Dorkings, Langshans, and Wyandottes. Some fanciers like one, some another. Road-grit or sweepings, ashes, burnt clay, sand, fine gravel, all make excellent run-floors, but all should be well raked and cleaned daily. Of course, the site should be well drained or have open gutters cut through or around it if it becomes saturated. The best fence is coarse wire netting from 5 feet to 6 feet in height, secured to stout supports.

2600—**Artificial-manures** (*W. J. C.*).—What are termed special manures, as prepared and supplied by various firms, being variously composed of phosphates, potash, and nitrates, are all excellent, and may be employed about Strawberries, Gooseberries, and bush fruits, generally at the rate of 3 lb. per rod, applied in March, and again a few weeks later, and either lightly forked or well hoed in. Soot is good also liberally dressed, or you can get pure bone-meal (superphosphates), Kainit, or potash, muriate of potash, in equal parts, and apply these at the rate of 4 lb. per rod at once, as these are not immediately soluble, and add nitrate of soda as a separate dressing at the rate of 2 lb. per rod, or even a little more in April, after growth has commenced.

2601—**Vegetables for exhibition** (*Ignoramus*). The first of July is rather early for vegetable exhibiting. However, then you should have Peas, Tomatoes, Cauliflowers, Potatoes, Long Pod Beans, Cabbages, Carrots, and Onions. That is eight kinds, of which you could select six of the best then in. Sow some fine Peas, such as Duke of Albany, Magnum Bonum, or Alderman, at the beginning of February thinly in good soil. Sow Tomato-seed now in a gentle heat, and raise plants to get them fruiting in pots under glass in due time. Grow Conference or Polegate. Sow Snowball or early Erfurt Cauliflower-seed at once under glass to have strong plants to put out on to a warm border at the end of April. Plant early Puritan Potatoes or other early variety in a warm place, where the tops can be sheltered from frost, early in March. Let the sets be sprouted in the light. Sow Exhibition or early Seville Long Pod Bean at once, also Cabbage-seed of any good variety now under glass to plant out. Sow Early Winter or Scarlet Champion Carrot-seed early in February in a warm place, and transplant Rocca or Tripoli Onions from the autumn-sown bed to fresh soil well manured, and 12 inches apart each way. Do this early in April. You must give all ample attention.

2602—**Planting Vines** (*Athy*)—As your proposed vinery is only 8 feet wide, we think it may be best if you plant your Vines on an outside border. Trench this border fully 2 feet deep, keeping the bottom soil still down, and also breaking the bottom below that if you can, as that will facilitate drainage. After trenching, add, if you can, another 6 inches of good turfy loam from an old pasture, and fork it well in, mixing with the natural soil. A border 4 feet wide will be ample for the first two years. If you add a little wood-ash and crushed bone at the rate of a bushel of the former and a peck of the latter, well mixing it, great good will result. The best Vines for your purpose will be Black Hamburgh and Buckland's Sweetwater, but in a house 12 feet long you will need only five Vines at the most, and three should be black. Plant as soon as the border is finished at 2½ feet apart. You will have to cut the Vines hard back to where they enter the house, which should be through holes in the brickwork, 5 inches wide. These holes can be, in cold weather, stopped up with shavings. When a strong shoot is put forth from the top bud on the pruned Vine, let it be carefully tied, but not tightly, up to the wires under the roof of the house. If the growth be good the first season it should be cut back to about 3 feet length within the house, and then may carry a few bunches of fruit. The Vines should reach the top of the roof in this way in three years. On your back wall you may grow Tomatoes for two years, but after the Vines cover all the roof nothing will grow well, neither is it durable, as the plants are apt to breed insects, and these would later infest the Vines and do them harm.

2603—**Beech-tree** (*Fagus*).—We wish you would take reasonable trouble in finding the answer to your question. We have had one or two complaints from readers deploring that no notice has been taken of their questions. In one case half-a-column was devoted to it, but overlooked. "Fagus" will find his question carefully replied to in our issue of Jan. 8, page 655. We ask readers who do not find their questions answered under the short reply column to kindly look through the various departments. Very often a question is received of general interest, and a longer reply given than would justify its insertion in the short reply portion of the paper. The utmost care is taken with every query received. We want to help every reader of GARDENING, and this assistance is given as quickly as possible.

2604—**Kainit** (*Constant Reader*).—This potash-manure may be applied to the soil direct, or be mixed with a load of ordinary manure if you desire it. As this one load may be expected to manure from five to six rods of ground, you may mix with it now about 14 lb. of the Kainit. When it is mixed, however, it must, whilst laying in a heap, be protected from rain, or it will soon wash out and be wasted. Of course, the addition of so much of potash salts to the load of manure adds to its manurial value; but it is potash alone, whereas for most crops nitrogen and phosphate are equally essential. Good stable manure has naturally all these in fairly equal proportions.

2605—**Bone-meal** (*Waiting*).—If you apply to any dealer in chemical manures in your locality you should be able to purchase bone-meal. It is produced by steeping bones in a bath of sulphuric acid or vitriol for a certain time. That softens the bones, and when the compound is dry and crisp it is put into bags and sold. This is really superphosphate of lime, as lime is a large ingredient in bone formation. It should, however, be used sparingly, and, if possible, in conjunction with Kainit or muriate of potash in about equal proportions with the planting or sowing of crops, as these manures take time to dissolve, whilst nitrate of soda, applied as a top-dressing after growth has begun, dissolves quickly, and is at once capable of utilisation. Chemical manures should be aids to animal manures rather than be relied upon absolutely. There are elements in animal manures, fibre especially, that chemical manures do not give.

2606—**Pruning bush-trees** (*Retired Officer*).—It is not easy to describe in an individual case exactly how pruning should be done to bush trees, though the matter is simple enough. Generally, pruning is to amateurs much of a difficulty, and needs a practical demonstration to render the instruction useful; but as your bush-trees are somewhat recently planted it may be wise to prune harder than would be desirable with well-established trees, because harder pruning leads to wood-reproduction the following summer, and that again compels effective root-action; hence the trees are more quickly established than would be the case if left unpruned, as then top and bottom action would be rather sluggish. Prune back the past season's growths, therefore, to about one half their length, cutting quite back any very small shoots that grow inwards. Then, in pruning, always cut close over a bud that projects outwards; by so doing the succeeding shoots help rather to expand than contract, or thicken, the tree. The next pruning may be more moderate, cutting back

shoots about one-third only, and spurring back to one or two buds all inner shoots. The following year in most cases, Apples and Pears especially, dormant wood-buds—that is, those which otherwise would produce leaves or shoots only—should plump up and form fruiting buds, and once the tree gets into bearing very little hard pruning may be needed, but chiefly thinning. Plums and Cherries bear on the previous season's shoots, and therefore may commence fruiting earlier. If the trees are needed to be kept dwarf and compact, summer pruning—done towards the end of July, and consisting of shortening back all summer growths to four leaf-buds—will have to be followed, and probably later root-pruning. Restricting growth in this way becomes, of course, very artificial treatment, and though capable of producing good results, yet needs much knowledge to produce complete success.

2607—**Celery in wet soil** (*Celery*).—That your garden is occasionally flooded, and whilst your soil, too, is generally rather wet, helps to explain the difficulty you have with Celery in the winter. You should not plant in trenches. Open them as for Celery usually, and break up deep, adding ample manure, but refill quite level with the surface before planting. In making rows allow fully a foot wider between them than hitherto. Do not overfeed with liquid-manure, but occasionally strew soot about the soil, which can wash in. Do not begin to earth up until the plants have made strong growth, 18 inches to 20 inches in height, then gather up the stems, put a loose tie of bast round them to keep them erect, strip away any small leaves or suckers, and 6 inches of soil. On no account earth ahead of the hearts, which you seem to have done. Go on moulding up gradually at intervals of ten days or so. A little fresh lime strewn along the soil before earthing up will do great good.

2608—**Asparagus-bed** (*A. B. C.*).—In making a bed for Asparagus over a base of gravel of great depth, much of success, all the same, must depend upon the depth of soil on the gravel; but in any case, assuming that you propose to make an ordinary bed of 5 feet in width, we would suggest that to get some 30 inches to 36 inches of soil you throw out the top soil on to one side, then excavate fully 12 inches of the gravel below. If this could be done to a width throughout of 7 feet, so much the better. Into the bottom cast a quantity of rough turfy matter, ditch or roadside trimmings, or similar soil material. Mix with it some of the top soil, then, as you throw in the rest, add to it a good quantity of half-decayed manure and tread it fairly. Planting the roots may be done anywhere, though better early in April on the flat in three rows, 24 inches apart, then cover them up 4 inches with other fresh soil. Growth will soon follow. Cutting must not commence till after the second year from planting.

2609—**Old spurred Vines** (*T. W.*).—It is evident the old Vines in your greenhouse have been grossly neglected. We should advise the cutting clean out of every other cluster of spurs, and of cutting near back to the rods all others, sacrificing any hope for bunches this year. Thus you would be able to make new laterals more thinly placed, and having ample light and air would make good leaves and wood. These, cut hard back in the following winter, should then carry Grapes the succeeding year. When the pruning is done coat the Vines with a mixture of lime, freshly slacked, soft-soap, and clay, made into a thin paste. The soil may also be renewed from the border, if accessible, 6 inches deep, and a dressing of half-decayed horse-manure added, the soil being partially cast over it again. Only very drastic treatment can bring the Vines round.

2610—**A curious "Geranium."**—I enclose a "Geranium"-truss on which two of the petals are very like a Sweet Pea. Thinking it a curiosity, I send it to you. None of the gardeners round about had ever seen anything like it.—JAMES GRANT, *Caputh Manse-gardens, Dunkeld.*

*** *Simply a freak, the lower petals longer than the others, and formed into a lip-like arrangement, very unusual in the "Geranium" flower.*

TO CORRESPONDENTS.

G.—You may get from Mr. R Sydenham, Tenby-street, Birmingham, a copy of his pamphlet "How I came to Grow Bulbs," which may furnish you with some information.

Queries.—*Many answers to queries we are, unfortunately, compelled to leave over until next week.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Ignoramus.*—The flower is the double Scarlet Geum or Avens (Geum coccineum flore-pleno). It is a valuable plant on account of the lengthened period through which it remains in bloom. Commencing to flower in May, it is still in bloom, as "Ignoramus" shows by his enclosure, at the end of the year. The plant is a hardy perennial, and is of easy culture, not being particular as to quality of soil or exposure. It may be easily raised from seed, but the usual method of propagation is by the division of the clumps in spring.——*C. C Corley.*—1, Lavender Cotton (Santolina chamæcyparissa); 2, Please send again; 3, Eupatorium Wendlandi; 4, Probably an Eriostemon, but not easy to say without flowers; 5, Lachenalia quadricolor; 7, Scarboro' Lily (Vallota purpurea).——*J. R.*—1, Lisianthus Russelliana; 2, Pandanus Veitchi; 3, Asplenium bulbiferum; 4, Diplacus glutinosus; 5, Eranthemum sp.; 6, Cupressus Torulosa.——*S. M. W.*—Cornus mas.——*J. O. N.*—Unfortunately, your specimens are very poor: 1, Abutilon, but kindly send a flower; 2, Please say colour and character of flowers, evidently one of the many Cape bulbs; 3, Abutilon vexillarium; 4, Sedum sp.; 5, Probably Primula sikkimensis, but impossible to tell from a leaf only; 6, Narrow-leaved Myrtle.——*Charlton.*—Acalypha musaica.——*A. W. E.*—1, Tradescantia tricolor; 2, This is missing; 3, Phlebodium aureum; 4, Pteris cretica; 5, P. serrulata; 6, Kindly send fertile frond.——*L. L.*—One of the Indian Rhododendrons, probably a form of R. arboreum, but we cannot tell for certain what kind from the flowers sent.——*Oncidium.*—1, Oncidium varicosum; 2, Lælia autumnalis.——*B. B.*—1, Odontoglossum Rossi majus; 2, Odontoglossum Cervantesi.

Catalogues received.—Messrs. Kelway and Son, Langport, Somerset.—*Seeds, Plants, and Bulbs.*——Messrs. Dicksons and Co., 1, Waterloo-place, Edinburgh.—*Garden Seeds.*——M. Cuthbertson, Rothesay, N.B.—*Flower and Vegetable Seeds, etc.*——Messrs. Edmondson Bros., Dame-street, Dublin.—*Vegetable and Flower Seeds.*——Messrs. Herd Bros, Penrith.—*Garden Seeds.*——Messrs. J. Sharpe and Son, Bardney, Lincoln.—*Guide to Practical Gardening.*——Messrs. Wm. Cutbush and Son, Highgate, London.—*Flower, Vegetable, and Farm Seeds.*——Mr. F. Gee, Riverford House, Biggleswade, Beds.—*Seeds, Plants, Potatoes, and Roots.*——B. Soddy, 243, Walworth-road, London, S.E.—*Seed Catalogue.*

LAW.

Garden to be left in tenantable order.—I have taken a large market garden, which is growing over with Docks, Brambles, and similar perennial weeds. The garden has to be left in tenantable order. Will these weeds have to be dug up or surface cut to leave it tenantable?—W. L. C.

*** I do not think the outgoer is bound to cultivate the land from which he has taken a crop this autumn or summer, although he should allow you to enter so to do. If the weeds of which you speak have come up since the last crop was taken, and that crop was properly cultivated and weeded while growing, I do not think the outgoer need trouble himself further in the matter, although, for his own credit, he may possibly do so. But I should be strongly of opinion, from your description, that the outgoer has not cultivated the garden in a good and husbandlike manner, and should he make any claim for valuation, these matters will be properly taken into account. If he makes no claim himself I cannot advise you that your landlord would be wise in sueing him for breach of agreement, and you are doubtless aware that in law the outgoer and you have no concern with each other.—K. C. T.

Gardening partnership (*W. L. M.*).—If you are in a position to prove that you have found the whole or a part of the money for the erection of the houses, and for the cultivation of the garden, and if you can prove that you acted as a partner in the matter, that will be sufficient. But if you are unable to prove these matters, you would be unable to establish a claim in the event of the contingency you contemplate. You had best become joint-tenant of the garden; but if the landlord objects, or if your friend objects, you had best go to a solicitor who will show you how security may be obtained. It is impossible to find space to go fully into the matter in these columns.

A gardener's notice.—I took a situation as gardener, single handed, at weekly wages, to live in the lodge at a gentleman's place. We have no agreement as to notice to determine the service. What notice should be given by either side? A week's notice or a month's notice?—R. R.

*** A month's notice is necessary from either side.

Overgrown fences.—The fence between my Grass land and the adjoining land belongs to my neighbour. It has been allowed to grow for many years without being cut, and is now about 20 feet in height. The Brambles, etc., growing in the bottom of the fence have spread 2 yards or 3 yards into my land. Can my neighbour be compelled to cut the fence and clear away the bushwood spreading over my land?—W. T. C.

*** Your neighbour may allow his fence to grow as high as he chooses, and you cannot hinder him. Neither can you compel him to clear away the bushwood that has spread into your land. As soon as it enters your land and grows there it is absolutely your property, and your neighbour cannot touch it if he wishes. If you want this clearing you must do it yourself. You may cut up everything that grows upon your own land, and if there are any portions of your neighbour's fence overhanging (not overshadowing, which is a very different thing) your land, you should give him written notice to cut off those overhanging portions, and if he declines or neglects to attend to the request you may cut off those portions yourself. You must be careful not to cut any portion that does not overhang your land, and the portions thus cut off do not become your property. You should place the cuttings just within his boundary, but at your side of his fence, and leave them there for his disposal.

Trespassing poultry.—A. and B. occupy adjoining gardens, and B. keeps poultry. The poultry gets into A's. garden through a defective fence between the gardens. The fence belongs to A. Can A. claim damages from B.? Can he compel B. to make the fence such that poultry cannot pass through it?—W. T. P.

*** The rule of law is that every person must keep his own stock from straying, unless he can show that his neighbour is under an obligation to fence against that stock. The mere ownership of a fence does not imply an obligation to maintain that fence against stock in an adjoining garden. It might be, of course that the deeds of the property will show an obligation on the part of A. to fence for B's. benefit, but it is very rarely indeed that any person is obliged to fence against poultry. In the absence of any such obligation on his part A. may recover damages from B. for the trespass of the poultry. A. cannot compel B. to repair and maintain the fence, but he may prevent B. from touching the fence, and he may recover damages as often as B.'s poultry trespass. It will be B.'s duty to keep his poultry at home or take the consequences, and he must put up a fence of his own if A. will not allow him to mend the existing fence. What would he do if A. cut the fence off by the ground, and left it so?

Outgoing and ingoing tenants.—Can you kindly give me advice as to this? I have rented a field since Lady Day, 1897, to be cultivated as a market garden, adjoining the road. Outside of the field, against the hedge, is a heap of lime, sand, clay, etc., mixed up together, placed there by the last tenant since I have rented the field; the last tenant has sold this heap to a man who now claims it, but still he does not clear it away. Has he got a right to take it away at all? Or can I claim it as mine, since he bought it after I came into possession of the field?—LIGHTNING.

*** No, you cannot claim the heap. If the road be a highway, you may complain to the highway authority; but if a private road, write again and advice will be given.

Notice to quit garden.—I have a piece of garden ground for which I pay rent yearly on March 25th, also rates and taxes. The place has recently been sold and the new landlord has given me a quarter's notice to quit on March 25th next. Is that notice good? I have no written agreement. Am I entitled to half a year's notice or to a year's notice? If the landlord wants the garden in March can I make him pay for crops and ingoing?—J. G.

*** As you pay rent yearly and have no written agreement, your tenancy is evidently a yearly tenancy and can only be determined on the same day of the year as it commenced, probably on March 25th. If it is occupied as a market garden, a year's notice is necessary; but if as a private garden half a year's notice is sufficient. But in either case the notice you have received is bad, and you need not give up possession except on such terms as you may think fit to make.

BIRDS.

MANAGEMENT OF CAGE-BIRDS.

THE SISKIN OR ABERDEVINE (FRINGILLA SPINUS).

THIS pretty and amusing little bird breeds in the north, and only visits the southern part of our island during the autumn and winter months of the year; indeed it can scarcely be considered a native of the British Isles, as its true and general habitation is the north of Europe, being abundant in Norway and Sweden and the northern parts of Germany, resorting to plantations of Alder, Birch, and Larch, upon the seeds of which this species subsists. The nest is usually built at the extremity of the highest branch of a Pine-tree, the outer part being composed of small twigs, and the lining of fine vegetable fibre. The eggs are bluish-white spotted with purplish-brown, and there are two broods hatched during the season. The plumage of the Siskin is yellowish-green above, with two yellow bars across the wings, while the

chest and flanks are yellow and yellowish-grey, with dusky streaks, the forehead, crown of the head, and throat being black. It is about 4½ inches in length, the tail taking up about 1¾ inches of this, and is very neat and compact in appearance. In captivity this little bird becomes very tame and familiar, and, like the Redpoll and Goldfinch, may be taught to draw up little buckets of water and other tricks of a similar nature. The most suitable food for caged Siskins is a mixture of summer Rape and Canary-seed, and although they are very partial to Hemp and Poppy-seed, these must be dealt out with a sparing hand, being of a fattening nature, and these birds, being great feeders, are liable to become overloaded with fat and die from repletion. The loss of liberty affects their appetite so little that they will feed freely upon being caged immediately after capture. The male of this species will readily pair with a hen Canary, the mules produced from this cross proving almost equal to the Canary in vocal powers when brought up under a good songster.

THE WHITETHROAT (SYLVIA CINEREA).

This lively, animated little bird is another of our summer visitors, frequenting thick hedge-rows, plantations, gardens, and orchards, and building its nest—which is a very flimsy affair, composed of dried stems of Grasses, mixed with hair—in some low bush or among Brambles, the eggs being of a greenish-white, speckled with ash-grey and brown. This bird is about 5½ inches in length; the general colour of the upper plumage is brown; the quill-feathers and coverts of the wings margined with light reddish-brown; the throat white, the top of the head tinged with black, while the flanks and chest are ashy-grey, with a reddish tinge. There is very little difference in the appearance of the sexes, the male being only a trifle darker on the back and somewhat whiter on the breast than the hen. The song of this bird is very pretty, and when it sings it rises from the bush on which it is perched and darts into the air, performing a kind of undulating dance, and returning to its former resting-place at the close of its song. In captivity the Whitethroat is one of the most pleasing birds imaginable, and in an outdoor aviary amongst other birds its antics in frisking about, erecting its crest, stretching out its neck towards its rivals while raising its voice to its utmost pitch are most amusing. In its wild state the food of this bird consists of insects, caterpillars, and aphides, to which is added Currants, Cherries, and Elderberries. The young birds can be reared upon ants' eggs, small meal-worms, and other insects, while the adult birds should be fed upon the same kind of food, with the addition of a little finely-minced mutton two or three times a week, with some chopped Lettuce or scraped Carrot. S. S. G.

Breeding Goldfinch mules *(N. A.).*—Do not put your birds together in the breeding-cage till about the middle of April, in the meantime letting them continue to occupy separate cages within sight of each other. In preparing them for breeding vary their diet—that of the Goldfinch more especially—with Millet, Flax, Groats, a little stale bun-crumbs, and hard-boiled eggs, and Thistle-seed occasionally. As yours are old birds they have probably long, sickle-shaped claws, which it will be well to cut and trim before putting them together to avoid mishaps when nesting. Nests and eggs are frequently destroyed from the overgrown claws of the birds becoming entangled in the building materials, causing the nest in many cases to be dragged bodily from its receptacle. The claws should be held before a good light, and the superfluous portion of the nail cut off, taking care not to remove so much as to reach the thin vein which runs three parts down the nail. The best staple material for the construction of nests is dry Moss, mixed with a small portion of soft, sweet, meadow hay, while a little cow-hair may be given for the lining of the nest. It is always best to provide two nest-boxes that the birds may have a choice in the selection of a site for building; these should have a good coating of whitewash to keep them sweet and wholesome. Mix powdered chalk or old mortar with the grit sand at the bottom of the breeding-cage to assist the hen in the elaboration of the egg-shells. As a rule, Goldfinches breed more freely with hen Canaries than any other of our British birds.

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EARLY-FLOWERING PRIMROSES, 100, 1s. 6d. Small-leaved Ivy, rapid grower, 100, 1s. 4d. Perennial Phlox, 4 named varieties, 15, 1s. 4d. 40 Rockery Plants, 4 named varieties, 1s. 4d. 20 Perennial Sunflowers, 4 named varieties, 1s. 4d. 4 Christmas Roses, 1s. 4d. Auriculas, 12, 1s. 6d. Ceterach Ferns, 20, 1s. 3d. Rose of Sharon (St. John's Wort), 12, 1s. 6d., free.—KATE, Harley Park, Callan, Ireland.

IRIS FŒTIDISSIMA, coral-red berries, 4, 1s. 4d. Iris Pseud-Acorum (Yellow Flag), 20, 1s. 3d. Winter Heliotrope, Tussilago fragrans (Coltsfoot), 15, 1s. 3d. —KATE, Harley Park, Callan, Ireland.

REGAL AND SHOW PELARGONIUMS.—Best sorts from pots, true to name, 3s. per doz., free.—LEWIS & SON, Nurserymen, Malvern.

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GARDENING ILLUSTRATED.

No. 986.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* JANUARY 29, 1898.

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ROSES.

THE JAPANESE ROSE (ROSA RUGOSA) AND ITS HYBRIDS.

Great improvements have been made during recent years in this sturdy species, and it is not surprising when we consider its free-seeding character. Although generally termed a Japanese Rose, it appears to be widely distributed, being also found in the Rocky Mountains. The single red (R. rugosa) and single white (R. rugosa alba) were introduced from Japan, and from these have emanated some very lovely varieties of great hardiness. They are deserving of more extended cultivation, if only for their peculiar hardy character. They have been known to withstand a zero frost with impunity. The thick leathery foliage of most of the varieties enables these plants to resist impurities of the atmosphere, and on this account they can be highly recommended for planting near large cities. The single varieties are much admired, and they are indeed wondrously beautiful with their broad expanded blossoms, consisting of a single row of petals, the centre illumined by the numerous yellow stamens. They flower in autumn as well as summer, and it is peculiar to see the bushes covered with their large orange-red heps or seed-pods, resembling small Tomatoes, and at the same time bunches of their showy blossoms. The semi-double and double varieties are also much esteemed, and if room can be found no one will ever regret planting the whole collection. The single crimson and white make an excellent hedge, rising if desired to a height of 6 feet to 8 feet. One can readily imagine the effect of such a hedge when covered with the showy fruit in autumn. As a shelter to the Tea Rose garden such a hedge would be invaluable, and at the same time be in harmony with the surroundings.

The rugosa Roses are much employed for shrubberies, wild gardens, and suchlike positions; they also make an excellent cover for game. Standards of the double variety Mme. Georges Bruant produce a glorious show; the immense heads when covered with pure white, Niphetos-like blossoms are seen to great advantage, the more so if planted in front of or among stately conifers and evergreen shrubs. It is difficult to forecast the varieties likely to arise from cross-fertilising these Roses with some of our gorgeous Hybrid Perpetuals, and I believe ere long we shall have some grand colours produced. I am not sure I should welcome many more double kinds. I think the simple beauty of the single flowers cannot be surpassed, and they are not so fleeting as single varieties of other Roses. The great need is to obtain really brilliant single crimson or scarlet kinds. The type termed rubra is really only a rose colour, though it is supposed that the original type as first introduced from Japan was of a much brighter colour than the variety we have at present under that name.

I cannot do better than give a list of the varieties worth cultivating, and I place them somewhat in order of merit. Possibly the more recent varieties (at present placed at the end of the list) will take a higher position when better known.

Rugosa rosea or rubra.—This is sometimes termed Regeliana. It is the most vigorous of all and produces the finest fruit. The colour is deep rose. It is a misnomer to call it rubra, as some do. It can be raised from seed, but the offspring will sometimes come white or dull in colour. It can be propagated freely from layers, as, indeed, most of the species can, but it is generally budded upon the Manetti-stock, and will make very large plants the first year.

R. alba.—This is the single white variety, and is quite dazzling in its purity. It bears large handsome fruit of a more orange colour than the preceding.

Mme. Georges Bruant.—The most beautiful of all the double varieties, and one that should be in every garden. I am surprised growers for market have not yet found out the commercial value of this Rose. It will yield an abundance of long, pure white buds that nearly rival those of that old variety Niphetos in form. It is a most vigorous grower, and planted singly on the lawn or in a shrubbery the plants would speedily develop into huge specimens.

Blanc double de Courbet.—Although burdened with such a name, this is indeed a beautiful Rose. It is semi-double, and was raised from R. alba. It is certainly the purest white Rose in cultivation. The long pointed buds, produced in bunches of four to six, stand upright and are exquisitely shaped; the only drawback to them is the very short stem the individual buds carry, otherwise they would be excellent for cutting. The fruit of this variety is not so showy as that of the single kinds. The foliage of some of these rugosa Roses, especially the one under notice, dies off in autumn of a beautiful clear gold colour.

Fimbriata.—This variety is remarkable for its beautiful fimbriated flowers. These are white, delicately suffused with pink. It shows in its growth the wonderful effect of cross-fertilisation. It is said to be the result of a cross between R. rugosa and Noisette Mme. Alfred Carriere. The wood resembles in a marked degree that of the latter variety.

America.—This is a variety (introduced by the Harvard College of America) from the Rocky Mountains. The flowers are of a crimson-lake colour, single, and the fruit is distinguished from that of other kinds by being covered with long spines.

Belle Poitevine.—A pretty soft rose colour, double, and very sweet. A most perpetual-flowering kind.

Calocarpa.—A variety remarkable for its immense clusters of scarlet fruits, the individual pods being about the size of wild Rose heps. When grown in standard form and it has attained the age of three or four years, the effect of such a head covered with its scarlet fruits would be grand. It is a single variety with sweet rose-coloured flowers.

Chedane Guinoisseau. — Fine satin-rose colour, a distinct shade among these Roses. The single flowers are very large and produced abundantly till late in autumn.

Mrs. Anthony Waterer.—This should be a splendid variety, being the result of a cross between R. rugosa and General Jacqueminot.

Mme. C. Worth.—This has large semi-double flowers of a reddish crimson colour. It is a most effective Rose for massing. P.

Budding Roses.—Can Roses be budded on the Brier-stock in April as successfully as in July or August, as I have been told that it is better to do so in the spring?—E. S.

*** We have budded in April, upon the last year's shoulders or side shoots of the hedge Brier, but only when forced to do so in the case of very rare varieties, when every available bud must be used. You cannot get buds in a fit state from the open so early as April. As a general practice it is decidedly of less merit than during the summer months.

Roses for Hants garden (*Reg Dell*).—We can highly recommend the following for dwarfs: General Jacqueminot, Mrs. John Laing, Mrs. R. G. Sharman Crawford, La France, Viscountess Folkestone, Caroline Testout, Marie Van Houtte, Mme. Charles, Anna Olivier, Duke of Edinburgh, Captain Hayward, G. Nabonnand, Dupuy Jamain, Francisça Kruger, Maman Cochet, and Prince Camille de Rohan. As standards, plant: W. Allen Richardson, Rêve d'Or, Mme. Plantier, Crimson Rambler, and a few of the Hybrid Sweet Briers.

Culture of Roses, soil, etc. (*An Amateur, T., Reading*).—This is a subject we can hardly go into at length in these columns. But if you look to our seasonable and propagating notes, which appear almost weekly under the heading of Roses, you will, we trust, get full reply. As regards soil, much depends upon circumstances. A heavy one can be improved by adding soot and light manures, the contrary being done in the opposite case. A rich loam is an ideal soil, but few of us can command such. Roses will grow well in any ordinary loam or garden where mixed subjects thrive.

Rose Duchess of Albany (H. T.).—This fine Rose is never seen to so great advantage as it is in the forcing-house. Like many of its class, it delights in a high temperature. The bud of the Duchess of Albany is very beautiful. The colour is a rich, clear crimson-pink, the edges of the petals often lined with the silvery-pink of La France. When planted out in the Rose-house this variety and its parent, La France, are two of the very best to grow where sweetly-perfumed, long-stemmed pink Roses are in request.

Acacia Riceana.—This when treated as a roof plant where there is sufficient space for the long, pendulous, thong-like branches to display themselves to advantage is during the flowering season charming; indeed, from its remarkably graceful habit of growth it forms at all seasons a pleasing feature. The leaves of this species are needle-like, so that in this respect it is widely removed from some of the Acacias. It is a native of Tasmania, and is also known by the specific name of setigera. Besides its beauty as a roof plant it is also seen to considerable

advantage when clothing a pillar in a greenhouse or conservatory. In any case, being a somewhat vigorous grower, it is much more satisfactory when planted out than if confined in a pot, provided of course that a proper bed is prepared for the roots. A. retinoides is another species well suited for training to a pillar in a good-sized structure, where in a greenhouse temperature it commences to flower quite early in the year. The phyllodes, which play the part of leaves, are in this species about 4 inches long, and of a glaucous hue, while a succession of blossoms is kept up for a much longer period than in most of the Acacias. Its value for clothing a pillar in a large conservatory is well shown in the temperate house at Kew.—T.

GARDEN WORK*

Conservatory.

A good strain of Cinerarias when the plants are well grown comes in useful now. They are not difficult to grow if kept in a cool-house; but if much heat is used they have a drawn, weakly look, and are almost sure to be infested with insects. Our plants have been grown in a house where the frost has been kept out, and not much fire used beyond. The plants have been standing on a bed of coal-ashes not far from the glass. The house has only been vaporised once during the winter, and the plants are very free from green-fly. Primulas and Cyclamen do very well on a coal-ash bed in summer, but when taken indoors they do best on a stage near the glass. On the other hand, Calceolarias require similar treatment to Cinerarias, and should be vaporised when flies make their appearance. Calceolarias, if not already done, should be placed in their flowering pots. If starved in small pots they soon lose colour. Nice little specimens can be had in 6-inch pots. The market grower uses 5-inch pots for most of this stuff for the convenience of marketing and to make the most of the room, and where the Wimbledon or Kettering loam is available nice well-flowered plants can be had in comparatively small pots. This is the worst season of the year for keeping a large, lofty house full of flowers, and in such a house it will be wise to have some permanent plants of good size either planted or plunged in the borders, and round these group the flowering stuff, mixed or edged with Ferns. Then in the open spaces glades can be created with striking plants, foliage or flowering, dotted thinly over a groundwork of one particular plant. Palms and Tree-Ferns have to a large extent taken the place of the Orange and the Camellia. The last-named is not much used in a cut state; it is too stiff, but a good-sized specimen or two in the conservatory is very effective. Bamboos and Grasses of various kinds are charming when properly placed; but a good clump of anything of this character should be used if the true effect is sought. A clump of Arundo Donax variegata planted in the border is very effective.

Forcing House.

No house requires so much attention at this season as the forcing-house where much is required. To keep different kinds of plants moving on steadily together requires watchful care. Forcing flowers for the conservatory and for cutting is only one item. I have seen French Beans, Strawberries, Cucumbers, and even Pines coming on in the same house. Of course, further on in the season other arrangements can be made for some of the things; but in the early stages a good deal of work of this kind can be done without injury to anything if proper attention is given, which means that an experienced person must be in charge. Cuttings of all kinds will strike now if the plants from which the cuttings are taken have been previously warmed up a bit. This warming up in a temperature of 60 degs. or so softens the growth, and renders the sap more active. Cuttings grown in a cool-house will not strike readily in heat; the greater part of them will damp off, and neither will cuttings taken from plants in a warm-house root in a lower temperature.

Orchard House.

The trees in this house, whether in pots or planted out, should now be in condition for breaking. The buds are swelling, and if a little heat is applied they will soon burst into blossom. What an advantage it is to have this house divided in the centre, so that one part may be heated! Something may be done to prolong the season by growing early and late kinds, and a longer succession can be had from trees in pots than if planted in the border; but even then it is a great advantage to have one part of the house warmer than the other. See that all borders, if the trees or any of them are planted out, are moist.

Ferns under Glass.

Maiden-hairs which have lost colour may be cut down. When the first signs of new growth appear divide and repot, or shake out and repot without dividing. The majority of Ferns used to be grown in a lighter compost than is thought desirable now. If the loam is good from one-half to two-thirds may be loam, and the remainder leaf-mould, with some sand. Fern-spores may be sown now. In private gardens generally plenty of young Ferns come up from self-scattered spores. Seedlings make better plants than are obtained by division, and I have known men who grew Fern-fronds largely for market throw out their old plants, and bring on a constant stream of seedlings, because they produced better fronds, and more of them. It is easy to put two or more seedlings in a pot when one wants to make up plants quickly.

Window and Room Gardening.

Half the failures at this season arise from giving too much water or from leaving the plants standing in water in some fancy vase. On the other hand, Heaths and Azaleas must not be permitted to get dust-dry, or they will certainly die. Bulbs must be kept moist.

Outdoor Garden.

Strong deciduous-flowering trees and shrubs may be planted up till the end of March, if carefully managed and helped during the spring with water and mulch; it is better to get such planting done as soon as possible; and the weather now is very suitable for such work. Among those things not sufficiently recognised by planters generally are Acer Negundo aurea marginata, Deutzia Lemoinei; good forcing shrub, Sambucus plumosa aurea; a new Golden Elder, very effective, Hypericum Moserianum. There are many new Lilacs, both double and single, but there are so many of them that one wants to grow them several years before finding out the best. Some of them will certainly come to the front when better known. In warm situations something more ought to be done with Magnolias, especially the deciduous spring and early summer-flowering sorts. In some new gardens Prunus Pissardi has been rather too freely planted, but a little of it is well, and the same may be said of the Silver Maple. Acacia Bessoniana is a nice tree, and some of the newer Birches are charming trees with silver bark very bright and distinct among dark-leaved evergreens. The Scarlet Horse Chestnut and its relative Pavia macrostachya are suitable where there is space.

Fruit Garden.

Where fruit-forcing is carried on there will be a good deal to do now in regulating the growth of early Grapes and Peaches. Disbudding under glass should be done promptly. Sometimes on the open wall the disbudding of Peaches may be delayed for a time during a spell of cold weather for the sake of the shelter the young leaves afford the tender fruit, but under glass this is not needed. In making new fruit borders drainage is important, but large quantities of farmyard manure are not required. Something depends upon the character of the soil if light. A little cow-manure may be added, and I have known marl and clay used with advantage for both Grapes and Peaches, where the available loam was very light and sandy. As a rule, where the loam is good, little, if any, manure likely to clog up the soil should be used. Bone-meal, wood-ashes, phosphates, and something not too stimulating are better to begin with. Later, when the Vines or Peaches are doing good work, something more at the right time may be given. The proper manuring of fruit-trees is not yet fully understood. Some do nothing at all, and others are afraid of doing too much. Most of us at present are only groping in the dark seeking more light. The outside pruning and training should now be in a forward state. Get the Peaches trained on walls.

Vegetable Garden.

Those who want large Onions for exhibition should sow a few seeds of Allsa Craig or some other good kind in a pan under glass to get a few early plants to put in in March. In the meantime the ground for the Onion-bed should be made as good as possible by deep culture and manure. Large Leeks are obtained in the same way by sowing under glass. Tomatoes in warm houses must be regularly tied and side shoots rubbed off Night temperature 60 degs. to 65 degs. Ventilate freely in fine weather. Do not overwater. When the blossoms expand fertilise with camel's-hair or rabbit's-tail. Do not crowd the plants under glass. Cucumbers are growing freely now, and side shoots must be often stopped and tied in. The main leaders should not be stopped till well up the roof. It adds so much to the strength to get them well on the way before stopping. An early fruit or two may be got by early stopping, but the plants lose in vigour and the general result and weight of crop are not so good. Early Potatoes are always in demand, and there is no fear of having too many, therefore utilise to the utmost the means at disposal. After planting all the frames available, turf-pits or temporary places which are easily improvised may be planted with sets with the crown eyes well developed. E. HOBDAY.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 24th.—Forked up the early borders to let the air in, and planted a few old Ashleaf Potatoes. Sowed a small bed of Scarlet Horn Carrots and Radishes. Shifted Tomatoes into 5-inch pots to get strong, ready for turning out under glass. Disbudding on early Peach-house, second house now coming into bloom. Sowed more Melons, Cucumber, and Tomato-seeds. Pricked off Lobelias, sowed Petunias and Verbenas.

January 25th.—Training Roses and other climbers on walls and buildings. Planted Ampelopsis Veitchi to fill vacancies on walls. Put in cuttings of Bedding and Zonal "Geraniums." Potted off autumn-struck cuttings. Finished tying down young shoots of Vines in early house. Top-dressed inside borders in late vinery with artificial manure. We have used patent Silicate-manure for several years at this season, and another manure after thinning.

January 26th.—Made up another hot-bed for Asparagus. Took more Seakale into the Mushroom-house. Sowed more early Peas, William I. this time. Rolled lawn and walks. Selected some of the best of the late Cyclamens and placed in a light position near the glass to ripen seeds. We have a very good strain, and want to keep it and improve it if possible. Syringed Gooseberries and Currants with lime and soot-water to keep off birds.

January 27th.—Transplanted Tripoli Onions from seed-bed. Gave ground intended for Onions a good dressing of soot and forked it over. Shall do nothing further to the ground till the seeds are sown. Grafted a few Tea Roses on Brier roots, potted and plunged them in the propagating frame. Moved Chrysanthemums that are rooted to cool light house to keep them sturdy and robust. Put in more cuttings of various kinds.

January 28th.—Pruned Laurel undergrowth in shrubbery. Forked among shrubs just to point over the surface and cover the leaves. The leaves are always utilised in this way to feed the roots of the trees and shrubs. Bulbs are coming through, and several clumps of Aconites under the trees are very bright. We have been adding to these of late years. Snowdrops also and Daffodils have been planted extensively.

January 29th.—Moved more Strawberries to forcing-pit and took some from pit to Peach-house to set blossoms. Rearranged conservatory to make room for Cinerarias and bulbs coming into bloom, especially Daffodils, Hyacinths, and Tulips. Cut down rather hard several specimens of Luculia gratissima just out of flower. Vaporised house in which Lilium Harrisi and longiflorum are coming on. Moved more Spiræas and shrubs into forcing-house.

RAISING PETUNIAS FROM SEED.

PETUNIAS, being free-flowering and showy plants, are found more or less in most gardens; but, as a rule, the seed is sown too late to get the plants strong enough for turning out in beds by the middle of May. Although, no doubt, the seeds more readily germinate in frames with bottom-heat, such treatment is not necessary, and if sown early in the year in pans, and placed on a shelf in any warm-house, it will be found that plants so raised will not only be considerably in advance of those put in at the usual time, but that the plants will be short-jointed, and altogether more stocky and strong. To sow such fine seed as that of the Petunia is, it important that the soil should be made perfectly smooth and level before sowing, and when this is done, watered through a fine-rosed pot, so as to avoid having to wet the earth afterwards, till the young plants make their appearance. By adopting this course and covering the pot or pan with a piece of glass, so as to maintain an equable temperature and prevent evaporation, success will be certain. Even the most minute seed may be induced to germinate in this way; but in all cases where it is so small that it has to be sown on the surface it should have a sheet of paper laid over it to shut out the light for the first few days, after which it requires close watching and must be uncovered immediately germination takes place. To encourage growth when up, the young plants should be placed in a close frame or pit near to the glass, when they will soon be ready for pricking off into boxes of light soil, or for potting singly, to be shifted on again or planted out as required. Besides being serviceable for bedding, Petunias raised from seed are valuable for pot culture, as they afford plenty of variety, both in the form and colour of their blossoms, and make a fine display in a greenhouse or conservatory, either in pots or baskets. In outdoor borders in the summer the best way to grow them, or rather to support them, is to get a very coarse piece of rabbit wire and cut it into lengths of from 2 feet to 3 feet each, and place one of these round each plant so as to form a guard, when, after a time, the branches will find their way through the meshes and hide the wire with foliage and flowers. Grown thus they make grand masses that are not blown about by wind, or stiff or formal in appearance. Some of the double varieties are very beautiful, being striped and fimbriated after the manner of Carnations. The best way of growing Petunias when wanted for greenhouse decoration is to plunge the pots in cold-frames, where they can have full sun, and after the middle of May to draw the lights off during the greater part of the day. By pinching back or beheading any that have been under glass and become exhausted by flowering, and then setting them out in the open air in the summer, they will soon break again and come into bloom in the autumn, or a succession may be kept up by nipping out the points of the young shoots of a portion of the stock and then growing them on. Double kinds admit of being raised from seed in the same manner as the single sorts, but the seeds should be those of a really good strain. B. H.

THE GRAPE HYACINTHS.

MUSCARI-CONICUM is one of the most charming of this beautiful race of spring flowers, and is as free and vigorous in growth as it is exquisite in its beauty and grateful fragrance. When seen flowering in its thousands it is a wondrous sight, the almost endless numbers of its pretty columnar spikes of bright blue flowers making one of the finest displays of colour possible in spring-flowering plants. What greatly adds to its value when used for purposes of naturalisation is that the spikes are held erect, and thus attract attention at a considerable distance.

M. AZUREUM is another pleasing member of this race, of delicate blue colour.

M. BOTRYOIDES and its varieties are among

the prettiest of them all. M. b. album has pure white and M. b. pallidum sky-blue flowers. These two are especially good for pots and pans in the cool greenhouse, and may be had in plenty by taking care of the seeds and sowing in the open ground in sandy soil as soon as ripe. The blue-black flowers of

M. NEGLECTUM, a very early kind, and the curious plumes of the feathered Hyacinth, M. p'umosum monstrosum, are well known and often seen.

M. SZOVITZIANUM and M. armeniacum are worthy of mention as among the gems of this pretty, as well as useful, group of spring flowers.

All the kinds are perfectly hardy, and grow and increase freely in the open ground in moist, sandy soil. R.

INDOOR PLANTS.

SPRING FLOWERS IN A VASE.

THE accompanying illustration shows a vaseful of spring flowers, comprising Gladiolus The Bride, the ordinary Poet's Daffodil (Narcissus poeticus), and the double white Gardenia-flowered variety, which make a delightful trio, and all are hardy. The Gladiolus likes a fairly light, well drained soil, and may be grown in pots freely. Of the other two we need not write further, as they are too well known to describe.

Double and single Poet's Narcissi and Gladiolus The Bride in a vase. From a photograph by Mr. G. P. Hardman, Hayward's Heath.

ABUTILONS.

FOR winter blooming these plants in variety are very useful, their many bright and telling colours and free-flowering habit, combined with the ease with which they may be grown, placing them among the best of greenhouse plants. After the Chrysanthemums are over there is sometimes a scarcity of flowers, and to fill the gap these plants come in nicely, and look very well grouped with Libonia floribunda and Zonal Pelargoniums. As pillar or wall plants, too, the pretty drooping, bell-shaped blossoms have a natural and pleasing effect, and any spare plants come in nicely for planting out during the summer. A frequent mistake in their culture is allowing the plants to bloom when too small, the consequence of this being drawn, leggy growth. Cuttings should be made of young green shoots as early in the year as possible, these striking readily in a propagating case or under a bell-glass in pots of light sandy soil. Take them out as soon as struck and pinch the point out of each, and as soon as the resulting shoots are starting pot them singly into 3-inch pots, using as compost light loam, leaf-mould, and dried cow-manure, with a good dash of coarse sand. When established in the pots the plants must not be coddled, but grown close to the light in the greenhouse or on the front stage of a vinery where they can be afforded plenty of air. A short sturdy habit will be the result, and the plants will now need stopping occasionally, picking out every flower as it makes its appearance. With some kinds, notably the yellow-flowered varieties, this will not be necessary, as these seldom bloom until the shoots have made considerable progress. By the end of April the plants will have filled these small pots with roots, when they may have a shift into 4-inch or 5-inch pots, according to whether the variety is a strong or weak grower, using the same compost. A frame with a south aspect should now be prepared for the plants, keeping them close and shading from bright sunshine for a week or ten days, after which they will require ventilation on every possible occasion, the aim being to produce hard, bushy plants without being stunted. If frame room is scarce the plants may be grown outside after June 1st until August. In July they must have the final shift into the flowering pots, and all through the autumn the more they are exposed to light and air the better. Stop the shoots for the last time in October, and keep them in any light cool house from which frost is excluded until they are wanted in the conservatory or greenhouse. From the time the flowering pots are filled with roots an occasional dose of liquid-manure made from cow-manure and soot may be allowed, varying this with guano or other artificial manures. It is a good plan to give the plants a light fumigating on two successive evenings just before flowering, as green-fly often attacks them when in bloom, and this operation is injurious to the blossoms when fully expanded.

After flowering, if it is desired to keep the old plants, they must be trimmed into shape a little, and grown on the next season as advised for smaller ones. To give a stock of cuttings a few plants may be cut back earlier and placed in a little more warmth. Varieties are now so numerous that it is difficult to say which is the best in the various sections; but the undermentioned I have grown in quantity, and know to be good. As a pure white, the old Boule de Neige is still the best and freest, and quite unrivalled by any of the newcomers as a pillar or roof plant. Reine d'Or and Armeria are good yellows, but the large leaves of the latter somewhat hide the beautiful golden-yellow flowers. Vesuvian and Scarlet Gem are very bright red. King of Roses and Purple Emperor are hard to beat in their respective colours. The striped section I have not grown much, as I think the more decided tints are much superior to them; but the prettily variegated Abutilon Thompsoni and its double-flowered variety are too good to be left out. H.

MANAGEMENT OF PROPAGATOR.

(1) CAN you tell me how to procure and manage a propagator year after year? My seeds in the hot-bed are eaten down by insects. (2) A propagator that I could keep in my cool greenhouse and manage myself, heated by oil or spirit-lamp. I should be grateful for any advice and hints on the subject. K. S.

*** It appears to us that "K. S." is desirous of a propagator solely because "my seeds in the hot-bed are eaten down by insects." This could be avoided with a little sprinkling of lime or soot; and if "K. S." cannot manage a hot-bed we fear the propagator would also be a failure.

But to get to our subject. Before using a propagator always see that it is efficient. This can best be done by carefully testing it with a thermometer, examining this from time to time. One great point is to avoid too great changes in and too high a temperature. Of course, it depends entirely upon what subject is being propagated as regards heat and moisture. This we can scarcely go into at any length because of the vast number of subjects; but, as a rule, a steady heat of 60 degs. to 70 degs. will be ample; more especially so if kept close and in a cool greenhouse, as is the suggestion of "K. S."

Ventilation is a second important item. This must be slight, and yet sufficient to prevent a great deal of moisture condensing upon the surface glass. When this is sufficiently dense to drip upon the occupants, damp and decay are almost sure to result. Some may ask why such should be the case any more than when the plants or seeds are watered or sprinkled in the ordinary manner. It is because when such moisture forms in sufficient density to drip, the whole atmosphere in the propagator must necessarily be overcharged with moisture; hence the decay and rot.

Always wipe, or at least turn over, the glass when fogged by moisture. It is not always necessary to have an oil or otherwise heated lamp beneath a propagator. But here, again, much depends upon the subjects. If a box or a cheaply-made frame can be placed upon a border or bench, beneath which hot-water pipes run, the fact of enclosing the heat by a glass covering will be sufficient. It is regular heat and closeness of atmosphere that are most needed. Slightly sink such a frame, or pile up some Cocoa-nut-fibre around it, and you have one of the best and most efficient propagators for general purposes; one, too, that will not fluctuate so much in temperature and moisture.

Shade from direct sun is another item. It is astonishing how very rapidly and to what an extent a few minutes' direct sunshine will raise the temperature. Many subjects, too, need to be kept dark for a time during propagation, and such is always the case with seeds. We hope these few hints may be of service now that the season of propagation is upon us once more; but where a reader is in doubt we will gladly try to help, if full details be given. Too many simply ask a question, leaving us in the dark as regards circumstances and conditions.

FERNS.

THE MAIDEN-HAIR FERNS.

The Adiantums are popularly called Maiden-hair Ferns on account of the black, shining stems common to most of them. Some are of the greatest utility for making bouquets or wreaths for ladies' hair. Foremost among them is A. cuneatum, the commonest, and one which is not very likely to be eclipsed by any newcomer. Besides the natural gracefulness common to the fronds of that species it has the immense advantage of producing them in greater abundance than most of the others, and will no doubt for a very long time yet remain a general favourite. Then comes the variety A. cuneatum gracillimum, with fronds much more finely divided and much smaller pinnules.

For the same purpose also, A. decorum, fulvum, scutum, and mundulum, although not so much in demand, are very useful. For large vases where green foliage is often required for intermixing with flowers of more than ordinary sizes, such as Gladioli, Lilies, &c., what can be more appropriate and produce a better effect than the massive fronds of the well-known A. Farleyense, the light-coloured fronds of A. cardiochlænum and tenerum, or the darker ones of A. formosum and Sanctæ-Catherinæ? But it is not for cutting only that Adiantums are so much appreciated. As a collection there is no tribe equal to them amongst Ferns; indeed, a judicious selection of the best sorts only will produce a greater variety of forms and tints than could be found in any other. There are the dwarf forms of A. cuneatum, such as mundulum, Legrandi, Pacotti, all useful for edgings in the fernery; also the older A. Luddemannianum, perfectly distinct from any other form. Then there are the gigantic forms above mentioned, and besides them the popular A. trapeziforme, pentadactylon, peruvianum, and Seemanni. Then, again, we have some whose shape and general habit are totally different from ordinary Adiantums, such as, for instance, A. asarifolium, with its broad entire fronds perfectly round in shape, and measuring sometimes as much as 3½ inches across; the curious and better known A. reniforme, with kidney-shaped fronds, borne on long, shining stalks, and the very strange A. Feei, whose scandent fronds expand to great dimensions, and whose stalks are quite hairy. But above all there are amongst them some such as A. Hendersoni, with a metallic hue; macrophyllum, whose broad fronds are, in their young state, of a beautiful rosy colour; rubellum, tinctum, and Veitchi, all splendidly tinted in their young state; then we have A. sulphureum and Williamsi, and the silver one, which has become very scarce of late, A. scabrum; also the pendulous forms so well adapted for baskets, in which they make beautiful objects—the A. Edgeworthi, caudatum, and lunulatum; so that we may confidently say that a collection of Adiantums alone is most interesting. The curious property of repelling water belongs to most of them, which, if kept wholly submerged, will, when taken out, be as dry as before.

Adiantums are widely distributed all over the globe, and although a few of them only are found in temperate regions, the majority come from tropical countries. They are, as a rule, easy to manage, requiring no very special treatment. Plenty of light should be allowed to all of them, but the full sun should, as for nearly all other Ferns, be avoided carefully. A mixture of peat, loam, and silver-sand in equal parts, or, if procurable, good leaf-mould instead of peat will suit most of them. None of them like to be potted very hard, and watering, or syringing overhead, unless it be in a very airy, light, and warm house, is very injurious to all of them.

The more useful kinds are:

A. ÆMULUM.—This very elegant species comes from Brazil. The dark-coloured fronds, which are produced in great abundance, grow from 12 inches to 15 inches, and droop gracefully. It is one of the best Adiantums to stand when cut. Stove.

A. AMABILE.—This truly elegant plant, native of Peru, produces fronds some 24 inches long and 14 inches broad, of a light green colour. They are very elegantly cut, and have a charming drooping habit. This plant has also the peculiarity of reproducing itself on its own roots all over the pot. Stove.

A. ANEITENSE.—A very elegant and free-growing species. Stove.

A. ASSIMILE.—A charming plant of dwarf growth from Australia and New Zealand; its fronds are from 6 inches to 12 inches long, smooth, and bright green colour. It is well adapted for growing in baskets, which they cover all round in a very short time. Greenhouse.

A. BAUSEI (of garden origin).—This variety, although partaking of some of the characters of the popular A. scutum, is quite distinct from any other form by its pinnules being contracted; the fronds are produced from a crown in great quantities: they are erect (with the stalks ebony-black) and of a beautiful light green; the general appearance of the plant is that of a weeping scutum of strong growth. Stove.

A. CAPILLUS-VENERIS. — Although this favourite species is generally termed British, from the fact of its being found in Cornwall, Devonshire, South Wales, Ireland, and on the banks of the Carron, in Scotland, and also from its being the only indigenous representative of the genus, it is really a cosmopolitan plant, inasmuch that it is very common in all parts of the south of Europe, in the south of France, Italy, Spain, and Madeira, where it is found in profusion adorning the brooks and rivulets with its elegant fronds, often attaining the height of 18 inches. It is a very accommodating plant as regards heat, and not at all fastidious in its habits, for it will do equally well in a frame, a greenhouse, or in the moist, shady part of a stove. In the latter it thrives marvellously, and produces fronds quite as long as those of the specimens from the south of Europe, with which it is precisely identical, and if it once takes fair hold of a damp wall it forms a most beautiful and interesting covering. On account of its numerous black scaly rhizomes it makes a splendid object as a pot plant, and in that capacity will stand and flourish in the same pot for many years undisturbed. In that case it should be potted in a mixture of lime-rubbish, sandy-peat, and pebbles in equal parts, and have a thorough good drainage. The following distinct varieties which this species has produced will do very well under similar treatment as regards both temperature and compost. There are several forms, such as:

A. CARDIOCHLÆNA (A. polyphyllum) —This noble-growing Fern, from Caraccas, is well adapted for planting in the fernery, as it certainly is one of the finest of its tribe. The fronds, which often attain the height of 5 feet, are three or more times divided, and of a bright green colour.

A. CAUDATUM.—A distinct and handsome species from the East Indies, where it is found in great quantities. It is an evergreen plant, well adapted for baskets.

A. COLPODES.—This elegant species, from Tropical America, is well adapted for suspending in baskets. The fronds, which are produced profusely from a crown, grow to about 2 feet in length, and are of a very rich green when matured, but when in a young state they are of a very delicate pink colour. Stove.

A. CONCINNUM.—This well-known charming evergreen stove Fern is well worthy of a place in every collection. Its fronds, produced from a crown, often reach 2 feet in length; they are of a very light green; their stalks are very black. The pendulous habit of this plant makes it a beautiful object when used as a basket plant and suspended from the roof. Although a species from the West Indies, it does remarkably well in an ordinary stove.

A. C. LÆTUM is a fine robust-growing species from the East Indies, much more erect and stiffer in habit than the above-described form; besides it is broader in all its parts, the pinnules being twice the size of the others and set much farther apart. It is a most valuable and distinct Adiantum. Stove.

A. CUNEATUM.—This old favourite from Brazil is perhaps better known and more generally cultivated than any other Maiden-hair Fern, probably because it is the most graceful and useful; indeed, nothing can surpass the elegance of its beautiful foliage for bouquets, and this excellent quality is so fully appreciated by growers in general that millions of it pass through our flower-markets every year, besides the enormous quantities grown in private places where it is always in demand for the same object. The fact of its being evergreen and of free habit, and consequently very useful in winter, renders it more valuable still. It is of easy culture, growing in almost any soil, and not very particular as to temperature, and provided that regular moisture at the root is kept up, it will produce all through the year from a tufted rhizome an immense quantity of its lovely fronds from 10 inches to 15 inches in length, and broad in proportion, with their stalks and rachis of a beautiful shining black, and densely clothed with their delicate wedge-shaped pinnules. This species has produced more forms or variations (some call them monstrosities) than any other exotic Fern. Indeed, they have been brought out in such numbers that one might almost make a collection of these Ferns exclusively. But although most of them are very deserving, they are so numerous that to be of any help to the reader we must confine ourself to a selection of the best and most distinct forms only, such as:

A. C. VAR. GRACILLIMUM.—Of garden origin, and one of the first really distinct variations of the species. It is a most elegant Fern, with light and graceful fronds. Stove.

A. C. VAR. GRANDICEPS.—One of the most distinct, and by far the most attractive of all the garden forms of this popular Adiantum, from which it differs in several striking particulars. It is more robust in habit, the fronds are more elongated, produced in immense numbers from a tufted crown, and terminate in a dense tassel of finger-like growths. Stove.

A. C. VAR. LEGRANDI.—A remarkably neat and pretty dwarf Maiden-hair Fern of garden origin, forming dense green tufts of erect fronds with numerous ramifications thickly set with small rounded pinnules of a beautiful rosy colour in their young state, and of a dark green when matured. Stove.

A. C. VAR. PACOTTI.—This charmingly pretty and compact-growing garden variety may be termed a perfect miniature, and quite a little gem among Adiantums. It is a very distinct and elegant plant of about 6 inches to 8 inches high. Stove.

A. CURVATUM.—A very fine species from Brazil, producing from a thick underground rhizome its fronds, which are very distinct from any other Adiantum, as the pinnæ being much curved backwards give them a very peculiar appearance; they are large, bright green in colour, and, under good cultivation, attain the height of 2 feet. If this beautiful species is not always seen in such good condition as to show its beauty it is because it requires more shade than any other Maiden-hair with which I am acquainted, a fact which is not generally known. Stove.

A. DECORUM.—A well-known and extremely handsome species from Peru, somewhat resembling A. cuneatum, but of large proportions. The fronds are larger in all their parts than those of the above-named species, and they are produced in great numbers from a tufted crown. It is of a lighter green than most Adiantums, and is a very useful plant for decorations, and in that respect second only to A. cuneatum, from which it is easily distinguished by its pinnules being much more rounded and slighted serrated. Stove.

A. EXCISUM MULTIFIDUM. — This charming garden variety partakes somewhat of the characters of A. concinnum as regards the way in which its fronds are produced, and also their drooping habit, and of A. cuneatum, of which it possesses the dark green colour. The fronds are very graceful in appearance. Stove.

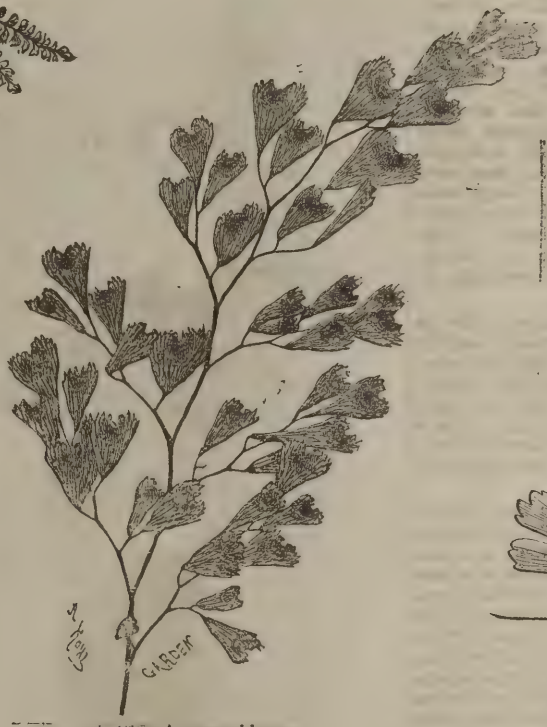
A. EXCISUM NANUM.—This, also a variety of garden origin, is a plant of small dimensions. Its rigid fronds, which are produced in great abundance from a crown, seldom attain more than 8 inches in height. Stove.

A. FARLEYENSE.—This very elegant Adiantum, from Barbadoes, is by far the most interesting of the whole tribe, and might with justice be called the queen of the Maidenhair Ferns. It is too well known to require a very elaborate description, which, however good and complete, would most likely fail to do it full justice; it has been given at different times as a sport or accidental seedling from A. scutum (Ghiesbreghti) or a cristate form of A. tenerum. When grown near to the glass, and with plenty of light, the pinnules, which are of large size, beautifully cristate, deeply fringed, and with almost crispy lobes, are very prettily edged with a delicate pale crimson tint, turning to a pleasing rich light green when quite mature. Stove.

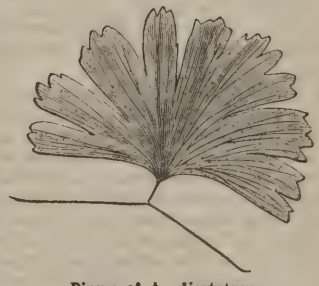
[We shall conclude the notes next week.]

American Maiden-hair (A. pedatum).

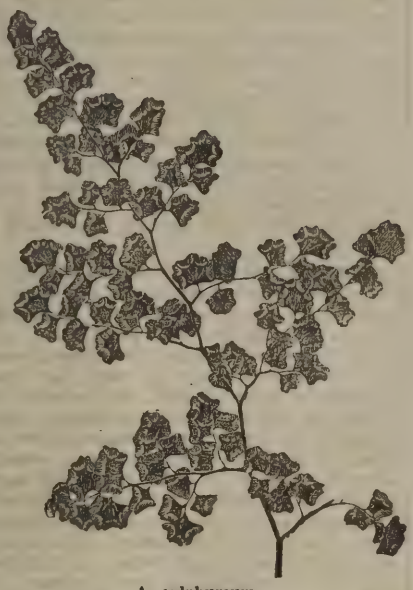
British Maiden-hair (Adiantum Capillus-veneris).



A. monochlamys.



Pinnæ of A. digitatum.



A. sulphureum.

A. formosum.

A. princeps.

THE KITCHEN GARDEN.

CULTURE OF CUCUMBERS.

The Cucumber is a favourite plant with amateurs, as they often succeed in growing a profitable crop; and as it fruits in such a short space of time it is largely grown. Many failures, however, occur, and some growers attribute their want of success to the variety and not to culture. As regards variety, we have some splendid kinds; indeed, of late years there has been a great advance in the raising of free-bearing Cucumbers of good quality. The variety illustrated, Lockie's Perfection, is excellent for amateurs, or others who need quality, as it has now been some years before the public, and any variety that can hold its own so long is reliable. On the other hand, some may prefer a larger fruit, but I do not advise it, as the medium-fruiting varieties are free and large too. There are others equally good, such as the well-known Telegraph, which, so far, has never been beaten as regards quality. It gives a good-sized fruit, and is my favourite summer variety in winter. There are kinds such as Sion House, Tender and True, and Masters' Prolific, which, though smaller, are better on that account. There are several varieties of Telegraph under the name of Improved, and other addition, but a good strain is needed. I fear that some kinds are not Telegraph at all, though sold under that name, so that it is best to get one's stock of this variety from a good source. Telegraph has been many years before the public, and is an excellent variety for house-frame or pot culture.

Another newer, but equally good, form is Rochford's Market Favourite, a variety largely grown for market on account of its free cropping and good keeping qualities. This variety will keep fresh and rigid after cutting longer than any other Cucumber. It is not such a smooth fruit as either of those named above, but the quality is excellent and few surpass it in cropping.

There is another Perfection in the market (Veitch's), and though this is more suitable for growing in a house than in a frame, it is a fine fruit in any form, and equally good for summer or winter. This, like Lockie's, is probably one of the best exhibition Cucumbers grown, and is a splendid fruit when grown up a roof. If in frames it should be supported, not allowed to rest on the soil, as the latter spoils the shape and colour of the fruits. I will add two more notable kinds, and my readers will doubtless think the selection ample. I cannot omit Progress, which was raised by a celebrated amateur, and now a grower. It is certainly worthy of its name, being a long fruit, perfect in shape, splendid for exhibition, and of a beautiful colour, with quality combined. Matchless is also a fine type of Cucumber, introduced a few years ago. This is very free bearing, the fruit large, dark green in colour, smooth, and desirable for exhibition. It is of splendid quality; indeed, I know of none to equal it for exhibition. As regards culture—so much depends upon the means at hand. Many growers are none too good to the plants, as, though at the start they treat them well, by the introduction of other plants later too much air is often given, or too little warmth. Heat and moisture are the chief points in culture. One wants atmospheric moisture in all parts of the house or frame, not merely at the roots. Our large growers, who get such large quantities of these fruits, grow the plants in very high temperatures. They give scarcely any ventilation, and, of course, shade the plants from strong sun. By this mode of culture there is rapid growth and no disease. Amateurs and gardeners also often give too much air or cold draughts, and encourage the red-spider by so doing. Red-spider cannot exist with moisture, and this is the reason large growers succeed, as the house is never dry. Cold draughts are avoided and heat used freely; indeed, if a house runs up to 100 degs. they trouble little, but give more moisture and shade. One cannot expect to do so well in frames as in houses, but twenty years ago there was no lack of frame Cucumbers, and with frames a shorter variety, such as Lockie's or Rochford's, does best. There must be warmth to be successful. It often happens that the plants in frames get none too much attention after a certain point, but if allowed to run wild there will be poor fruit.

Stopping and feeding must be done regularly—at least, once a week—and plants given new surface-soil—say monthly, at least—to encourage surface-roots. If new wood be not made there are no fruits. It is a safe plan to cut away—say about every ten days—a portion of the old wood, and lay in the young shoots to take its place. When these are stopped—that is, the points pinched out—embryo fruits appear, and these soon mature.

Over-cropping is a fatal fault overlooked by amateurs and other growers. The plants in a young state make so much growth that each joint shows two fruits. These are often left, and the cultivator points with pride to the crop of grand fruit. What is the result? The plants,

Cucumber Lockie's Perfection. From a photograph by Mr. Parren, Northgate-street Canterbury.

not having had time to build up many roots, are overstrained and unable to perfect the crop. The remedy is to remove a large number of the young fruits as soon as they show, only allowing a fruit to remain at least one to 6 inches of growth, and cut when young, as if left they impoverish the plant. I have alluded to feeding, and few plants need more food than the Cucumber in a healthy state. The plant does not like great masses of soil at the roots. When starting it is far better to give soil, say, every three weeks, and if at all heavy make it light and porous. The plants like a light free soil, and add such aids as bone-meal freely when top-dressing, and to lighten heavy soils old spent Mushroom-manure is excellent; indeed, too heavy manures are bad. Give food liberally in the way of liquid-manures, and I have found none better than cow or sheep-manure with soot added. This latter is best when the soot is placed in a bag, and immersed in the water a few days before using. It is useless to advise fertilisers, there are so many, but let me add use them with care. It is far better to use them often than in strong doses, and, what is better, as a top-dressing when adding new soil. If the plants are grown in pots they take more food, especially in a liquid state. It is not so much a matter of variety as the way the plants are grown. W.

Raising Onions and Leeks in heat.—These are two important crops in all gardens, and nowadays the practice of raising a stock of both in heat in spring has become common. I knew one gardener who thought of getting some extra early and fine Leeks by sowing in open beds in August, thinking that as they were so hardy they would stand the winter and might be transplanted into shallow trenches in spring. This he did and was full of expectations, as the plants certainly made a good start when removed in April, but no sooner had they got well established than every plant ran to seed. He repeated the experiment with the same result. Many people fail even with spring-sown batches in heat from want of a little judgment in management. As soon as the seedlings are, say, 2 inches high the box should be removed to a house having a temperature of about 50 degs., and the plants subjected to all the light possible; if left longer in a hot-house they become drawn and are practically spoilt. Then, again, thinning is often neglected until the seedlings crowd each other, when drawing them out loosens the soil to such an extent that those remaining fall about in all directions and suffer from the lack of what all Onions and Leeks require even when in a young state—a firm root-run. Some advocate pricking the seedlings off into other boxes, but I do not think this necessary, and where the main crop is sown in heat this would incur too much labour. Free thinning is all that is necessary, gradually hardening off in frames and finally planting out both Leeks and Onions in April. When growing bulbs for show I have often mulched the rows with old Mushroom-manure, and found it a great help.—J.

Carrots on hot-beds.—Where early Carrots are much appreciated, the close of the year should see a good hot-bed of leaves and manure made up for their production. Fortunately, Carrots do not require a great amount of top protection as long as they have warmth underneath them; indeed, they are far better without it, so that it is only necessary to provide a framework that will support one or two thicknesses of Russian mats when such covering is wanted. In my own case I use old unglazed lights over the beds, and these are supported at front and back on planks set up edgeways and covered on frosty nights only. Of course, good water-tight sashes are better, but these are generally required for other purposes. Of far greater importance than the covering is the bed itself, and this should be thoroughly well made and trodden firmly, so as to retain a moderate heat throughout bad weather for many weeks. To do this quite a large proportion of the material should consist of good hard leaves, or say three-fourths of the whole and the remainder of stable-litter. I advise the making of quite a large bed, even if the whole of it is not required, as the bigger it is, in reason, the less fear there will be as to loss of heat. It ought also to be deep, standing not less than 4 feet above the ground level when finished. Firmness and a tolerably level surface are necessary items to bear in mind, so it is well not only to tread firmly at first when making, but again at intervals of two or three days after the heat has risen and before the soil is put on. In preparing the soil, choose that which is light and sandy, and mix with it all the wood-ashes that can be conveniently spared for the purpose, as this will assist growth considerably. I also like to pass the whole through a sieve, and for the Short Horn varieties I use about 4 inches depth of soil. Thin, broadcast sowing is the most suitable method for such beds, and as a quick-growing variety the Parisian Forcing can hardly be beaten.—T.

Hedge between vegetable and flower garden (*A. R. March*).—The Thorn or Quick is excellent. Myrobella or Cherry Plum is equally fine. Euonymus and Holly can be well recommended.—H.

CEREUSES AND THEIR CULTURE.

Under this head are comprised a numerous section of the Cactus family, amongst which are some of the most gorgeous-blooming subjects in the whole range of flowering plants, at one time very much more cultivated than now. In times past, when hothouses were mostly warmed by the old-fashioned flues with the dry heat they gave off, the genus Cactus was largely represented. True, the flowers individually do not last so long as some others, but when the plants get large they give a succession that keeps on for several weeks. The splendid colours possessed by many of the varieties, comprising the most vivid shades of red and violet, are unequalled in the whole range of cultivated plants. Cereuses are of the easiest possible growth, provided that a few essentials to their well-being are kept in view, requiring very little of that watchful attention which many newer and more fashionable introductions demand.

The Rat's-tail Cactus (Cereus flagelliformis). From a photograph by Mr. G Ingram, Ascot, Berks.

They propagate freely from cuttings made of good-sized pieces of the shoots after they are fully matured; these should consist of a considerable portion of the preceding season's growth. If taken off in the spring they should be laid on a dry shelf for a few days to allow the base, where severed, to dry up, after which put them singly into thoroughly drained pots just big enough to hold them, filled with sandy loam; set them in a stove temperature, but not shaded or kept close in the way most cuttings require to be, or the result would be that they would rot upwards from the base; neither must they have much water until they have made plenty of roots; just as much as will prevent the soil getting quite dry will suffice. After they are rooted keep them near the glass, with all the sunlight available, and also where they will get air daily. A less moist atmosphere suits them better than that of a modern plant stove. When they have begun to grow put a stick to each to support them, giving water now more freely. If the cuttings have in the first instance been put in 4-inch or 5-inch pots, these will be large enough for the first year, as they do not like too much root room. Towards the end of September gradually withhold water, keeping them quite dry through the winter, during which a temperature of from 48 degs. to 50 degs. will answer.

In the spring, about the end of March, cut a small piece off the head of each to help them to break out additional shoots. This may not be necessary with all the sorts, as some will branch freely of their own accord, but in no case have I found stopping the points do any harm. Increase the temperature as the days lengthen, giving a little water at first, and when the shoots have got plump, and growth has fully set in, give more; then move them into larger pots proportionate in size to that of the plants, according to the strength of habit in the particular kind. Use a moderate quantity of sand, and some potsherds broken small will help to ensure porosity. Continue to treat them as advised during the preceding summer, with plenty of heat and sunlight in the growing season; again dry them off in the autumn and winter as before. Some of the smaller freest-flowering kinds will yield a few blooms the ensuing summer. The management afterwards required will be of a simple routine character, giving more pot room as the roots need it, but being mindful never to overdo them in this respect. As the plants get large, which they will in the course of years, with the less heat-requiring kinds it will be an advantage to stand them out during July and August in the open air against a wall in the full sun, giving no more water than is required to keep them from shrivelling; so treated, they will go on and last for many years. Such species as C. McDonaldiæ and grandiflorus, the night-blooming Cactuses, require to be trained to a wall exposed to the full sun in a warm stove, as they need a thorough ripening to enable them to bloom. In addition to the above two species—the former of which comes from Honduras, and has yellow flowers; the latter from Jamaica, and bears white flowers of an immense size—the undermentioned are all fine kinds: C. speciosissimus.—Crimson. From South America. C. flagelliformis (see cut); this often succeeds well in a window.—Pink. From Peru. C. splendidus.—Scarlet. From Mexico. C. triangularis—White. From the West Indies. C. Tweediei.—Orange. From Buenos Ayres. C. superbus.—Red. Mexico.

Some of the above will succeed with a lower temperature than that of the stove, but all are benefited by considerable heat whilst growing. There are a very large number of known species, but those named will in most cases be found a sufficient selection for ordinary cultivation.

Insects.—These plants are little affected by insects, yet aphides will often be found to attack the young growths and the flower-buds; they can easily be got rid of by fumigation. Slugs are very fond of them, and if they are within their reach will do serious mischief if not prevented.

ZONAL PELARGONIUMS FOR WINTER.

The best varieties.

I was pleased to read the article on the above subject in Gardening Illustrated. Anyone possessing an ordinary greenhouse, in which a heat of about 50 degs. can be maintained, may have a gorgeous display of bloom throughout the winter months. I have grown Zonals in winter for several years, and find I can get better results from cuttings inserted in early spring—March. I have tried autumn-struck cuttings, but the fact that they make large plants and have to bloom in 6-inch or 7-inch pots prevents their obtaining as much light and air as they require during the dark days of winter. Moreover, such large plants occupy more space, and one cannot grow so many varieties. By starting the cuttings in the spring and growing them on as described by Mr. Weathers, I find, from experience, that capital little plants in 5-inch pots can be brought on ready to be taken into their winter quarters at the end of September. I do not allow any flower-buds to grow until some time in November, and from early in December, when Chrysanthemums are "going off," the house is one mass of bloom until April, when a fresh batch of plants from cuttings taken in the previous autumn are beginning to come into bloom. Success depends to a great extent upon judicious watering, and there is no reason why each plant should not have five or six trusses in bloom at Christmas. I have eight on some of my plants.

Great care should be exercised in the selection of varieties for winter blooming, as it is a mistake to suppose that all are equally good. I do not recommend doubles—they are usually failures, with a very few exceptions. The best of that class is F. V. Raspail Improved. I do not remember that a good list of winter-flowering Zonals has lately appeared in your paper, and as it is possible that such a list may be of assistance to some of your readers, I append it: Atala, Hilda, Stella Massey, Pink Domino, Lady Rosebery, Mrs. E. Rawson, Phrynne, Rosy Morn, Gertrude Pearson, Agnes, Virginia, Mrs. Hall, Mrs. French, Wintie, Mrs. G. Luizee, Countess of Derby, E. Bidwell, Mercedes, Iris, Blue Peter, Mrs. Norman, Duchess de Cars, Radha, John Forbes, Olivia, St. Cecilia, Juliet, Rev. Herries, Raphael, Mme. Melba, Launcelot, Rev. Dr. Morris, Lady Tennyson, Proserpina, A. F. Wootton, John Bright, Hyacinth, Plutarch, H. Cannell, J. Zenobia. No doubt there are many others equally good, but during the past seven years I have tried at least 250 varieties, and the foregoing are the best of those which I have retained for my winter stock. Roseneath.

Heath in house (*Amas, W.*).—Scarcely any plants in pots at this time of the year go to Covent Garden, or any other good market, that have not been grown on in heat; thus when kept for a time in a living-room, or in a cool greenhouse, they soon collapse. Yours in the too cool temperature to which subjected have doubtless lost the tiny fibrous roots made in the market grower's warmhouse, hence the drooping. You may place it into your greenhouse, and give it warmth if you can, but you may find giving heat for one plant only hardly worth while. Heaths would bear exposure in cool-house very well in the winter if not previously forced in heat. If you can keep it alive, and then in April repot into one of the same size, using peaty soil, and cutting back the plant materially, it may break afresh and do very well.

FRUIT.

APPLE WELLINGTON.

THERE can hardly be two opinions as to the great value, both as a keeping and a cooking fruit, of the Apple known in the great markets as the Wellington, and to Apple growers generally as either Dumelow's Seedling or Normanton Wonder. Its popularity is so great that it has also gained some half-dozen other less-known synonyms, which need hardly be specified here. On rich and deep soils the tree is often found to canker badly, and this prevents its being largely planted except on soils known to suit it, but I think also that a too free use of the knife leads to the production of wood that has a predisposition to canker. I grow it here on a deep soil as a close-pruned tree in a position where no other treatment is possible, and on a much lighter and poorer soil as a freely-grown, bush-shaped orchard tree, and the difference is greatly in favour of the latter form. These trees, which are allowed to extend themselves almost at will, bear heavy crops, while the others have only a sprinkling of fruit in most seasons. This Apple is considerably influenced by the stock on which it is grafted. On the Crab it grows into a very robust, spreading, bush-shaped tree bearing large fruits, pale green in colour, while on a dwarfing stock it takes a more pyramidal habit and crops immensely. The fruits are rosy-cheeked, more solid, and about half the size of those on the Crab-stock. I must admit that these smaller fruits keep better than the larger ones. This is a trait which nearly all keeping Apples have in common, but as the larger fruits of Wellington keep well up to the end of March, there is no fault to be found with them, especially as this Apple is only used for cooking, a purpose for which the fruits cannot be too big. On the hard-pruned trees I get extra large fruits, but these must be used early, or they will become badly spotted.

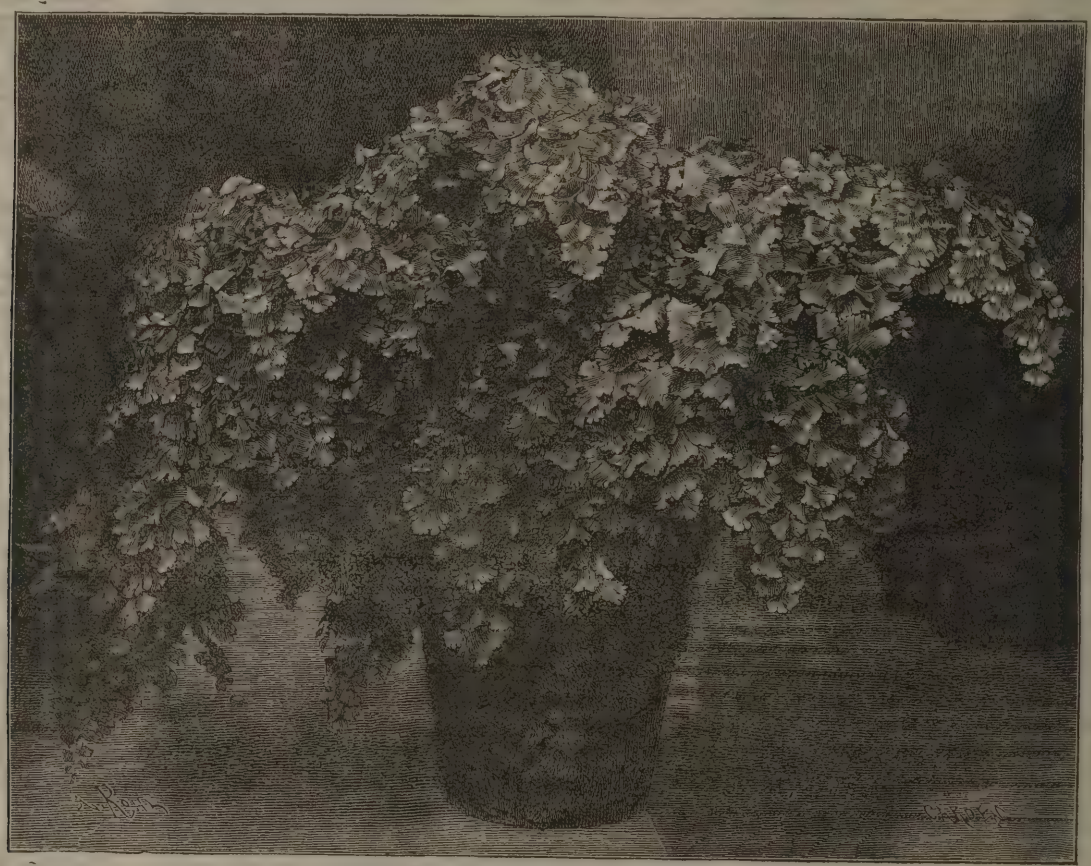
Rather long spurs must be allowed to remain on strong-growing trees if fruit is to be had in abundance. My practice with those trees that succeed best is to allow all possible freedom of outward spread to the branches, and to confine pruning to keeping the branches thin and to cutting out useless spray growth in the centres of the trees; old spurs are also shortened or cut bodily out now and then. The orchard gets a dressing of burnt soil and wood-ashes yearly. This does not amount to much per tree. I also mulch the trees with long stable litter biennially, doing half the orchard each year and using the manure thickly enough to stifle out most of the Grass. I spread out the manure quite as far as the branches reach, so that it acts directly on the feeding roots, instead of confining it to a small radius. The Wellington is my favourite cooking Apple, as indeed it must be with all who value in this section acidity combined with good flavour. T.

SHANKED GRAPES.

IF the roots of Vines are permitted to enter wet, cold soil, shanking must follow in due course. The first symptoms noticed will probably be long-jointed wood and loose straggling bunches, for the Vines do not succumb all at once. Shanking may be staved off to some extent for a time by taking extra pains to get the wood ripe by the use of fire-heat, but this is only a temporary expedient which must in the end fail. The only remedy is to lift the roots and place them in good loam more or less fortified with bone-meal, with other opening and sweetening ingredients such as wood-ashes, charcoal dust, and old plaster. The drainage also must be seen to and put right. I have lifted Vine roots out of borders which had been excavated from 3 feet to 4 feet deep. If the natural soil is of a damp and clayey nature, such deep borders must go wrong sooner or later. February is the time for lifting the roots of late Vines, and the sooner the work is done the better. The glass should be shaded for a time after the lifting is done to let the buds break slowly without pressure, and only a moderate crop should be taken this season, but this moderate crop will be of more value than a badly shanked crop. Before the lifting is begun the new compost should be prepared in sufficient quantity to make a new border. I prefer to start the Vines right, and if there is any difficulty in getting the maiden loam, only make border enough to place the roots in to last two years or so, more loam being added from time to time as required. Personally I am much in favour of inside borders both for very early and very late Grapes. With inside borders, if the position is rightly grasped, there should be no shanking, and Vines altogether inside will profitably utilise more artificial food; in fact, they will need it, and the provision for watering must be of the most perfect and ample kind. I have never known any man or set of men who would give an inside Vine border enough water unless the person in charge kept his eye on the work, or, better still, performed the leading part in its distribution himself.

There are two forms of shanking, or rather there are two main causes of shanking. Technically, shanking arises from a stoppage of the supplies at a critical period of the growth of the Grapes, usually noticeable just when the last swelling begins, and it may arise in the case of inside borders from dryness of the roots. The symptoms in this case are not the same, as there is an absence of the long-jointed wood and straggling, loose bunches which may be seen in deep-rooting Vines. In naturally damp, retentive soil half the borders should be made above the ground level. Some of the best Grapes I have ever seen were grown in a border that was carted in and placed wholly above the ground level. Such borders may be dressed with rich material without the risk of making the soil sour, and it is in the sweet wholesome border that the best Grapes are grown. It is impossible to feed Vines properly in a cold, wet soil. Gentlemen with plenty of pasture-land should not object to the gardener having a few loads of the top to put his Vine borders in order. The ground, if not robbed too deeply, can soon be put right again if a few loads of the old Vine border are carted on and a little Grass-seed sown.

E. H.



The larger Maiden-hair (Adiantum Farleyense). (See page 694.)

Dracæna Godseffiana. — This new Dracæna should make its mark as a decorative plant, the deep green foliage with creamy-white spots having a distinct appearance and decided charm. It is said to be very beautiful under artificial light. As to its lasting qualities, a plant has been standing for six weeks in an ordinary unheated room, and is as fresh as possible still.

ORIGIN OF THE ZONAL PELARGONIUMS.

IN reply to "W. H," the Zonal Pelargoniums of the present day, valued for the richness and variety of their colours, are said to have originated from the two species of which we give illustrations—namely, P. inquinans and P. zonale—both species that, like the majority

Pelargonium inquinans.

of the family, have come to us from the Cape of Good Hope, the former being introduced in 1714, and the last-mentioned a few years earlier. To hybridisation and culture the splendid race of varieties is due, and though the two species named are in themselves interesting, they are of course eclipsed by the varieties that have sprung from them.

GARDEN PESTS.

INSECTS IN THE GREENHOUSE.

(IN REPLY TO "FRANCO" AND OTHERS.)

"FRANCO" is much troubled with thrips upon Indian Azaleas. This suggests a few notes upon the extermination of the most common pests to be found in our greenhouses, and which will now soon be very prevalent.

First of all, let us say that none of our readers should allow any insect pest to become so numerous as to need strong measures. Prompt and early measures are not only so much safer, they are more efficient and far less labour or expense. In the case of the Indian Azalea and similar hard-wooded subjects, dipping is a good plan.

DIPPING is simply immersing the growth in a suitable insecticide. Any of those upon the market may be used if care be taken to closely follow the instructions as regards strength of the solution. In this case of dipping it may be about one-third stronger than advised for syringing. Have a bucket or deep pan full of the solution. Take up the plant, carefully shake off stale leaves and loose surface soil from the pot. Then place one hand, with fingers expanded, over the soil in the pot, turn the plant upside down and immerse the whole of its growth. A large utensil is not necessary if the plant be judiciously turned round during the process. Do not allow it to remain in the solution more than a minute, when give a gentle shake to remove what would otherwise run down the stem in considerable quantity, and probably injure the roots, and stand on one side. Follow this with all of your subjects, and then syringe them with clear, tepid water. Not only can the Indian Azaleas be treated thus, but such as Abutilons, Ageratums, Lemon-scented Verbenas, small Palms, Bouvardias, Gardenias, Heliotropes, small Marguerites, Petunias, and many other greenhouse plants; so that the reader will see to what a wide use it can be put.

Now, there are many advantages in this plan. We need operate upon certain plants only, instead of so many in their near vicinity, as would be the case when using the syringe. Nor do we spoil or render unsightly the surrounding plants. There is much less waste; in fact, none. The remaining solution is still available for syringing. Simply strain it through a piece of fine muslin, add a little more hot water to bring it up to about 70 degs.—never more—and you may still use it with the syringe. One point must be borne in mind—never dip a plant when in bloom. Dipping is the best check to all insect foes, and penetrates to the whole of the plant, a point that the most careful use of the syringe cannot effect without considerable waste. It is particularly useful with plants affected with thrips, red-spider, and aphides, and one of the safest checks to mealy-bug and scale. These are the five most common insect foes in the amateur's greenhouse. In the case of scale and mealy-bug, give a second dipping about a quarter-of-an-hour later.

FUMIGATION is much in use; in our opinion far too much so when carried out in the usual way—*i.e.*, to fill the whole house with Tobacco-fumes. It is risky in another sense. Few amateurs are content to use it sufficiently mild, and when they find a few survivors are far too apt to give a second application of such power that the majority of the subjects are irreparably injured. A couple of hours' duration of mild fumigation is as effectual as a sharp and strong one, and safer. Even then it is too uncertain unless in careful or experienced hands. Many subjects—the Heliotrope, young fronds of Maiden-hair and other Ferns, and Spiræas—are notable examples of some that have a great objection to smoke. Besides this, any house attached to the dwelling will be surely pervaded with the Tobacco-fumes, and those from the paper, rag, or other materials that are saturated with the juice of Tobacco-sweepings and other filth, as well as chemically-prepared, are not so sweet and pleasant as a good cigar. Still there are several subjects—the Cineraria, Calceolaria, and Verbena for examples—that are readily treated in this way. Where one has a whole house devoted to a single subject the matter is vastly different; but such is not the case with most of our readers.

If you have a plant or two that needs fumigation, place it in a large box, and, having lighted the Tobacco-paper or rag, throw a wet cloth over the whole. This can be done in the open during mild weather, or in a shed at other times. None of the fumes are wasted: it requires only a minute quantity of material, and one avoids any after unpleasantness. Of course, our readers will not forget the immense difference in the cubic measures of a box and their greenhouse.

SYRINGING is a very popular and useful mode of combating insect foes. It also possesses a great advantage over the two preceding methods, in that it cleanses the growth and foliage at the same time. But it also needs much care. Indiscriminate use of the syringe does considerable harm. Nor does the average amateur seem to understand how to use this useful instrument when applying insecticides. Instead of the wasteful method we so often see—that of charging the syringe and then emptying it upon the plant in one strong jet or spray—it should be discharged by a series of short and sharp strokes of the piston, drawing back a little way each time. This produces a sharp spray, which not only goes much further, but is not wasteful and is equally as effective as the single and forcible discharge. Besides waste when used so freely, a large quantity of the solution reaches the soil and roots. This can never be beneficial.

Again, let us repeat that prompt measures are absolutely necessary. There can be no wisdom in allowing the insects to get so numerous that our plants are injured, to say nothing of the other considerations.

Destroying slugs (*Balcamara*).—The open weather with moisture has made slugs very active and destructive. You are wise to wish to stop their depredations amongst your hardy plants early. As you have fresh lime, you will have to place several lumps into a box quite large enough to hold it when slacked, and gently sprinkle water on to it, so that it slacks slowly and becomes a volatile powder. Then you should dress in any old garments, protecting your head with any handy wrap, and freely dust the lime about all over your herbaceous plants rather late of an evening. It is when slugs are out preying that the caustic lime coming into contact with their slimy bodies destroys them. Strewn on the ground in the day, the lime is soon robbed of its pungency and does no harm to the pests. You should follow this sort of dressing up twice a week for a time, but to get rid of an unpleasant appearance the soil may be roughly scraped over in the day. If you have soot and will mix this with the lime in equal quantities, mixing on a dry floor enough for two dressings, the lime will be less white and objectionable in appearance. You may, of course, quietly dress just over the roots of the herbaceous plants, but that might leave unharmed myriads of slugs out on the prowl for food. The fresher your lime and soot the more effective they are.

Diseased Portugal Laurel-leaves (*Mrs. Melville*).—I cannot say what is the cause of the leaves of some of your Portugal Laurels going off in the way that those on the shoot you sent have. Are the affected plants more exposed to the wind or frost than those which do not suffer? Or are they in a drier or damper situation? I have known the leaves of the common Laurel go off much in the same way.—G. S. S.

Fungus on Chrysanthemum-leaves (*C. N. O.*).—The leaves of your Chrysanthemums are attacked by a fungus, a species of Aëcidium. Pick off and burn any leaves that are very badly attacked. Then spray the cuttings with Bordeaux-mixture, made as follows: Dissolve ¾ lb. of sulphate of copper in warm water, slake ½ lb. of freshly burnt lime, and make it into a thick whitewash with water.

Pelargonium zonale.

Strain through coarse canvas into the copper solution, and add 5 gallons of water. Or dissolve 1 ounce of carbonate of copper in enough hot water to form a thick paste. Dissolve this paste in ½ pint of aqua ammonia, and add water to make mixture 9 gallons.—G. S. S.

Grubs (*G. Riddle*).—The grubs you sent were crushed beyond recognition in the post, but as far as I can see they

are the grubs of a fly. You do not say under what circumstances they were found, so I cannot advise you how to kill them, or say if they are injurious or not.—G. S. S.

Insect in Apple-barrel (*M. A.*).—The insect you inclosed which you found in a barrel of American Apples is a specimen of a cricket in an immature condition. It belongs to a species that is not a native of this country.—G. S. S.

CHRYSANTHEMUMS.

THE BEST FIFTY CHRYSANTHEMUMS.

WHEN selections of the best twenty-four or fifty Chrysanthemums are asked for the answers given are generally by some well-known grower whose individual taste must necessarily govern the selection. Quite recently a very interesting and instructive election has taken place in France, being conducted by the editor of one of the Paris gardening papers, *Le Moniteur d'Horticulture*. Forms were sent out and returned by growers resident in the following countries—viz., France, England, America, Belgium, Switzerland, Italy, Portugal, Austria, Germany, Spain, Turkey, Roumania, Greece, Tunis, and Monaco. The number of voters was 1057, and for general purposes the selection of the best fifty varieties as set forth in a recent issue of that paper must be considered thoroughly impartial. The following is the result of this international election:

	Votes.		Votes.
Mme. Carnot	1011	Souvenir de Petite Amie	721
Le Colosse Grenablois	997	Col. W. B. Smith	706
Mrs. C. Harman-Payne	994	Mlle. Lucie Faure	701
Mme. Ed. Roger	976	Reine d'Angleterre	689
Viviand Morel	971	Waban	682
Calvat's Australian Gold	895	M. Chenon de Leché	661
Enfant des Deux Mondes	887	Louis Boehmer	660
W. H. Lincoln	876	Amiral Avellan	643
Hairy Wonder	809	E. Molyneux	639
Wm. Tricker	808	L. Isère	631
Mme. Calvat	767	Mrs. Hy. Robinson	623
Etoile de Lyon	762	N.C.S. Jubilee	614
		Phœbus	605

I have not thought it necessary to give the votes of more than the first twenty-five, but the remaining twenty-five are as follows in the order named: Florence Davis, Mme. M. Ricord, Niveum, Wm. Falconer, E. Forgeot, Chas. Davis, Philadelphia, Deuil de Jules Ferry, Lilian B. Bird, Duchess of York, Louise, Capt. Lucien Chauré, Le Moucherotte, Yellow Dragon, Julian Hillfurt, Mme. Ph. Rivoire, Ma Perfection, Henry Jacotot Fils, Mme. Lucien Chauré, Belle des Gordes, Eda Prass, Robert Owen, Mme. Chapuis Parent, The Queen, M. Panckoucke.

Out of these best fifty it is noteworthy that thirty are of French origin, the remaining twenty being English, American, or else importations from Japan. Of the thirty French varieties by far the greater number are seedlings of M. Ernest Calvat, who must be considered, at any rate on this side of the Alantic, *facile princeps* in the work of seedling raising. P.

Chrysanthemum—error in interpretation of N.C.S. rules (*Gloriosum*).—After carefully reading your letter, we are sure that quite an erroneous interpretation of the rules binding on affiliated societies was taken by the judges in the matter in question. If the rules of your society state that your Chrysanthemum stands were to be 18 inches wide, and you complied with this rule when exhibiting in competition for prizes, the judges were quite in error in awarding first prize to an inferior stand of blooms in which the measurement of the stand was 22½ inches, because of the fact that your society being in "affiliation with the N.C.S., they were bound to go by their (the N.C.S.) ruling." The only matter binding on affiliated societies is the proper disposal of Medals and Certificates, and the most recent issue of the N.C.S.'s catalogue shall be the standard work of reference in all questions of classification or nomenclature. The question of sizes of stands is contained under the heading of "special regulations for each show," and does not refer to affiliated societies at all. It is a matter for regulating the shows of the N.C.S. in London.

Chrysanthemum-buds (*Qn Ann*).—This question has been repeatedly answered in GARDENING. You will find paragraph referring to it the end of the article on stopping Chrysanthemums in our issue of Jan. 15.

STOPPING AND BUD-RETAINING.

IN reply to queries from "Fairfield," "Old Subscriber," "Alfred Cave," "Subscriber," and "T. W. Pocock," etc., we are pleased to supplement the list of those sorts given in our issue of the 15th inst. In their selections there were several sorts which had already been considered in the list just referred to, and on this account have been omitted from the present reply. We have, in taking the details into consideration, given the approximate periods best suited to the different sorts for providing a display of blossoms for the early part of November. The timing has been arranged for a display in London during this period, so that for equally good results to be arrived at either north or south of such situation it may be necessary to make a certain allowance of time. For the south coast we should be disposed to operate a few days later than that laid down, while for the Midlands a week earlier, and in Scotland ten days' to a fortnight's difference in the timing would be advantageous. If readers of GARDENING ILLUSTRATED simply grow their plants for ordinary decorations it is almost unnecessary to recognise this method of culture, as their aim no doubt would be to produce blossoms over a lengthened period, and for this reason the early and late sorts are grown together in the ordinary way. However, to have large blooms on disbudded plants within a certain limited period, it is an advantage to know how to effect this, and we have endeavoured to supply the need, hoping it will prove helpful to the uninitiated.

Japanese.

Names.	*When to stop.*	*Which bud to retain.*	*Feeding required.*
L. Canning	End April	First crown	Moderate
Western King	1st week April	Second crown	Moderate
Mrs. W. H. Lees	1st week May	First crown	Liberal
Margot	Natural break	Second crown	Liberal
Australie	Natural break	First crown	Not too liberal
Duke of York	End March	Second crown	Liberal
W. Wright	End April	First crown	Liberal
Boule d'Or (Calvat's)	3rd week April	Second crown	Liberal
W. H. Lincoln	Natural break	Late crown end August	Liberal
Mrs. Hermann Kloss	1st week May	First crown	Liberal
Mme. Renée Colin	3rd week April	Second crown	Moderate
Source d'Or	Natural break	Second crown	Liberal
J. Shrimpton	1st week April	Second crown	Moderate
Etoile de Lyon	1st week April	Second crown	Liberal
G. W. Childs	1st week April	Second crown	Liberal
Mons. Bernard	2nd week April	Second crown	Liberal
Pride of Maidenhead	1st week April	Second crown	Moderate
Andre Faillieres	3rd week April	Second crown	Liberal
Mons. E. Bergmann	2nd week April	Second crown	Liberal
Pink Ivory	Natural break	Late crown	Liberal
Th. Dennis	End April	First crown	Not too liberal
Golden Wedding	End April	First crown	Liberal
The Queen	End April	First crown	Moderate
Mme. Calvat	End April	First crown	Moderate
Mrs. E. W. Clarke	End April	First crown	Liberal
Col. Chase	1st week April	Second crown	Liberal
Stanstead White	Natural break	Second crown	Moderate
Oceana	Natural break	First crown	Liberal
Joseph Brooks	3rd week May	First crown	Liberal
Vicar of Bray	2nd week May	First crown	Liberal
Elthorne Beauty	2nd week April	Second crown	Liberal
G. J. Warren	End April	First crown	Moderate
Modesto	2nd week May	First crown	Moderate
Lady Hanham	Natural break	Late crown	Liberal
Baron Ad. de Rothschild	Natural break	Second crown	Liberal
Simplicity	Natural break	First crown	Moderate
Mlle. Marie Hoste	End April	First crown	Very moderate
King of Chrysanthemums	2nd week May	First crown	Liberal
Lady Ridgeway	1st week April	Second crown	Liberal
Eva Knowles	1st week May	First crown	Liberal
Cecil Wray	1st week April	Second crown	Liberal
Mrs. Hume Long	End March	Second crown	Liberal
Duchess of Wellington	2nd week May	First crown	Liberal
President Borel	1st week April	Second crown	Not too liberal
Henri Jacotot Fils	2nd week April	Second crown	Liberal
Van den Heede	1st week April	Second crown	Liberal
Sarah Owen	Natural break	Second crown	Liberal
Val d'Andorre	1st week April	Second crown	Moderate
W. W. Coles	1st week May	First crown	Liberal
Mons. Baco	Natural break	Second crown	Liberal
Pride of Exmouth	1st week April	Second crown	Moderate
Sunstone	1st week April	Second crown	Not too liberal
Mrs. H. Chiesman	1st week May	First crown	Moderate
Carew Underwood	Natural break	Second crown	Liberal
Comte de Germiny	2nd week April	Second crown	Liberal
Silver King	End March	Second crown	Liberal
Mr. C. E. Shea	Natural break	Late crown, end August	Not too liberal
J. S. Dibben	May 12	First crown	Liberal
Mrs. G. H. Smart	May 10	First crown	Liberal

Incurved.

Mrs. G. Rundle	Natural break	Any buds about 1st week Sept.	Moderate
Mr. Geo. Glenny	Natural break	Any buds about 1st week Sept.	Moderate
Mrs. Dixon	Natural break	Any buds about 1st week Sept.	Moderate
Abbott's White	2nd week April	Second crown	Not too liberal
Globe d'Or	1st week April	Second crown	Liberal
M. R. Bahuant	Natural break	Second crown	Liberal
The Egyptian	End March	Second crown	Liberal
Duke of Fife	End March	Second crown	Not too liberal
Mrs. F. Hepper	2nd week April	Second crown	Moderate
George Haigh	End March	Second crown	Liberal
Rose Owen	1st week April	Second crown	Moderate
C. H. Curtis	End March	Second crown	Liberal
Ideality	1st week April	Second crown	Not too liberal
Lord Rosebery	Natural break	Second crown	Moderate
Austin Cannell	1st week April	Second crown	Moderate
Ernest Cannell	1st week April	Second crown	Not too liberal
Mrs. R. C. Kingston	End March	Second crown	Liberal, grow 6 blooms on each plant
Ma Perfection	1st week April	Second crown	Moderate
Lord Alcester	2nd week April	Second crown	Moderate
Robert Petfield	End March	Second crown	Liberal
Owen's Crimson	End March	Second crown	Liberal
Miss M. A. Haggis	End March	Second crown	Fairly liberal
Wm. Tunnington	1st week April	Second crown	Liberal
Major Bonaffon	Mid March	Second crown	Not too liberal
John Lambert	2nd week April	Second crown	Moderate
Violet Tomlin	End March	Second crown	Fairly liberal
Lucy Kendall	End March	Second crown	Not too liberal
Brookleigh Gem	Natural break	Second crown	Liberal
John Salter	2nd week April	Second crown	Liberal
Jeanne d'Arc	Natural break	Second crown	Liberal
Prince of Wales	Mid April	Second crown	Moderate
Barbara	1st week April	Second crown	Not too liberal
Mrs. Robinson King	2nd week April	Second crown	Moderate
Lord Wolseley	2nd week April	Second crown	Not too liberal
Mrs. Norman Davis	1st week April	Second crown	Moderate
Robert Cannell	1st week April	Second crown	Fairly liberal
Golden Empress	2nd week April	Second crown	Moderate
Noel Pragnell	2nd week April	Second crown	Moderate
Mme. Darrier	Natural break	Second crown	Moderate
Mrs. Heale	End March	Second crown	Not too liberal
Queen of England	2nd week April	Second crown	Moderate
Mr. Bunn	Natural break	Terminal buds	Moderate
Guernsey Nugget	Mid March	Second crown	Liberal
Princess of Wales	End March	Second crown	Not too liberal

Etoile de Lyon.—I notice "Byfleet's" remarks *re* white sport of Etoile de Lyon, page 671. I should not have written again on the subject, but should like "Byfleet" to know that the sport he writes somewhat doubtfully of, has been tried as he advises, and the blooms produced in November were quite fixed in character, and I exhibited six in the class for whites the past season, taking second prize. Twelve blooms exhibited in 1894 gained two certificates of merit. I would add that there was not the slightest trace of rose colour in them, as stated in your remark on the spray sent you recently. The trace of colour mentioned I attribute to age of bloom. Those grown in open border naturally are pure. I had offers for the stock, but my master considered it might be worth more when better known. My sport has been much admired.—W. F. DARK, *Holme Cleve Gardens, Lyme Regis, Dorset.*

Chrysanthemums—how to grow a batch of dwarf plants (*An Old Subscriber*).—That you have been a subscriber and a reader for many years, and have gathered some valuable information from GARDENING, is indeed pleasing to us, and we gladly reply to your interesting query. You speak of the success of a grower of your acquaintance in producing three to four handsome blooms of Chrysanthemums on plants 2½ feet to 3 feet in height. This is a great boon to persons with dwarf houses, and the plants in themselves are often the picture of good health and mostly clothed with foliage down to the pots. We cannot see the advantage of pinching the young plants when only 6 inches tall, and then to grow them on strongly until the early part of June. We should advise you to grow on your plants with care until the latter part of May, and then to cut down to within a few inches of the soil. Take care to avoid cutting too low down and getting on the hard ripened wood, as this would be disastrous in its results. Observe the rule to cut down to a spot in the stem which is fairly green, or, rather, where the growth is less consolidated. If this be done the new lateral growths should each break away strongly, and there is then a good chance of them being fairly even in length and in vigour also. If the plants are cut down into the hard wood the resulting shoots are very uneven in their vigour and substance, consequently the results are often very unsatisfactory. It is a good plan to keep the plants rather dry at the roots after being cut down, as this induces the growths to break away more readily. When the new shoots attain a length of some 3 inches to 4 inches the plants may be finally potted into 8 inch or 9-inch pots, according to the vigour of the root action of the different sorts. This can be ascertained as they are each turned out.

Chrysanthemums—growing plants for decorations (*George Tyro*).—If by growing the plants from the natural break you find them too tall for your purpose, we should advise you to follow the lines laid down for those who grow their plants for exhibition, and where they, in many cases, pinch out the point of the shoots some time before they would make a natural break. By adopting this plan you would certainly get your plants dwarfer, and they might also come within the height you require them. You might cut down the plants instead, but such plants have this disadvantage—they are so irregular in their length as well as in the vigour of their growth. We prefer to cut down plants when they are established in 4½-inch pots—say during the latter part of May—and then it is very uncertain whether you would obtain the number of blooms of a satisfactory kind that you expect to get.

Chrysanthemums—cultural details (*Amateur*).—Yours is but a reasonable request, and we are pleased to give you the information. In reply to question A, do not now pinch out the point of your Chrysanthemum shoots. This is quite unnecessary at this season. You can get three or four exhibition blooms on your plants if you allow them to make a natural "break." A natural "break" is caused by the formation of a bud at the apex of the growth, and this should always be removed, and then from the axils of the leaves immediately below where the bud was produced new growth will be seen in a few days. These should be grown on to the number required, and some two or three months afterwards the first "crown"-bud will be produced. This can be retained if an early supply of blooms be required, but if neater and better finished flowers are desired, this first "crown"-bud should be removed, and the resulting shoots, which again appear immediately below the bud removed, may be grown on in like manner to that followed after the appearance of the "break-" bud. In the course of a few weeks in most cases the second "crown"-bud should be produced in the points of the shoots, and this should be retained by removing all the surrounding growths and leaving the bud quite alone at the extreme point of the shoot. In answer to question B, those sorts advised to be pinched in April should simply have the points taken out of the shoots and not cut back. Regarding question C, except in a very few instances, we prefer to take up the number of shoots from the April pinching, also from the natural "break" when this rule is adopted, that it is intended to produce flowers on in the end. There are a few exceptions to this rule, where a single stem is taken up from the April stopping, and then the required number from the next break. D, the stopping or pinching is to take the place of the natural "break," and by adopting this practice we may, to a very large extent, insure the appearance of a suitable kind of bud at a period best suited to any particular sort, and that it may be seen in its best form. There are many sorts which make a natural break early enough to perfect their bloom from second "crown"-buds in time for the November shows. As to question E, we should be disposed to operate a few days earlier than that for London—the standard we generally follow. Again referring to question D, the latter part of your query in this is answered in our reply to letter A. We give the advice relative to pinching supposing a normal season will naturally follow. When a very unseasonable period takes place during the plant's history the timing of course may be caused to vary.

Chrysanthemums — compost for first shift (*S. S*).—Carefully look after the requirements of your young plants at this season, and on no account let them get drawn and attenuated. They should be kept in a cool greenhouse near the glass-roof, or else in a frame or pit outside and where protection from frost can be provided. Early in February is a good time to give the young plants their first repotting, and at this time into 3½ inch pots, known to most gardeners as "sixties." You ask whether bone-meal, crushed bones, and patent manure should be mixed with the potting soil. Just a dusting of bone-meal is all that is needed at this time, and a good compost for the first shift is made up of the following items: Three parts light loam, one part leaf-soil, one part rotten manure, and a dusting each of wood-ashes or crushed charcoal, and the liberal use of coarse silver-sand. Give these a good mixing before using.

SUMMER AT MID-WINTER.

TO THE EDITOR OF "GARDENING ILLUSTRATED."

SIR,—I have read with great interest the letter from your correspondent, "Lady Amateur," in the issue of 15th inst. I am almost exactly in her position, except that I have a little more greenhouse room, but fewer frames. I entirely share her desire for flowers in my drawing-room in the winter, but am by no means so successful. If "Lady Amateur" would kindly add, and you could find space for, a few cultural hints, I think many of your readers besides myself would benefit. How does your correspondent get her bulbs into flower so early? I planted Hyacinths, Jonquils, and Van Thol Tulips in the middle of October last, but not one of them is yet in bloom! They are very promising, and one Tulip is showing colour; but that does not fill "a score of pots and vases" I have a few Chinese Primulas out, but my show plant is a Coronilla, which is a mass of golden bloom, and has been so for the past three weeks. So I have a lingering fondness for hard-wooded plants, in spite of "Lady Amateur's" excellent arguments against them. My Zonal Pelargoniums are not in flower, though struck in July and carefully attended to ever since. My house is heated by a flue, but I only pretend to keep out frost, and aim at 45 degs. to 50 degs. as average temperature night and day. AMBITIOUS AMATEUR.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2611—**Plants for winter blooming.**—In GARDENING of 15th of January, I was much interested in the article by "Lady Amateur, Berks," and she most kindly offers to give any of the readers of your paper cultural directions for plants suitable for winter blooming. I, for one, shall be most thankful if she will give a list of the best and easiest plants to grow so as to get a succession of flowers from now until February? Size of greenhouse, 9 feet by 7 feet, heated by a lamp.—QN. ANN.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2612—**German Iris** (*Cauldwell*).—Plant now, not too deeply, and in a fairly sunny position.

2613—**Auricula show at Westminster** (*R. S.*).—This will take place on April 26 next, in the Drill Hall.

2614—**Vaporiser** (*G. Tyro*).—The article you name can be obtained from Mr. G. Richards, Southwark-street, London.

2615—**Slug-infested garden** (*Elwin Holmes*).—See reply to correspondent about slug-destroying in the present issue (page 699).

2616—**Rosarian's Year-book** (*E. S.*).—Apply to Mr. Edward Mawley, Rose Cottage, Berkhampstead. Price one shilling and threepence, post free.

2617—**Clematis montana** (*Cauldwell*).—It is much the best to raise these from seed, by which means they are readily increased. Seedlings grow very rapidly.

2618—**Potato White Elephant** (*Flowing Field*).—This can be obtained from any of the leading nurserymen, especially those that deal in vegetables in particular. Look through our advertisement columns.

2619—**Cytisus not blooming** (*Constant Reader*).—There is no reason why your seedling Cytisuses should not bloom. Cut them back, and get more bushy and uniform growth than generally comes from seedlings.

2620—**Dianthus from seed** (*Pandora*).—It is rather early to sow annuals in February, even upon a hot-bed. If you sow Dianthus by March they will flower about middle of June. Your cold-frame would be sufficient for that.

2621—**Malmaison Carnations not flowering** (*F. R. F.*).—Your treatment is so correct, and the plants doing well, that we have little doubt you will be rewarded with blossom during the present season. Do not overwater.

2622—**Cannas, etc., in cold-frame** (*Pandora*).—You would not succeed with Cannas or Palms (Latania) in your cold-frame, and March is rather too early for the other subjects. Your greenhouse is the correct place, and the temperature given good.

2623—**Cutting of flowers from newly-bought plants, etc.** (*R. S.*).—It depends, of course, upon their strength. If the plants are weakly, remove the flowers. The Rockets might be planted now. The Japanese Anemones will remain perfectly constant.

2624—**Treatment of Lilies** (*Ridicule*).—Certainly you can repot; two or three weeks would make little difference. Try to discover what was the cause of the drainage crocks becoming displaced, and remedy that before standing them in the pit once more.

2625—**Tuberoses** (*Ridicule*).—After the Tuberoses had flowered, instead of repotting again at once you should have let them rest. Tuberoses are not of much use when once they have been forced. Green-fly is one of the many insect enemies all gardeners have to contend against. It is not a disease.

2626—**Flowers for bed near smoky town** (*Mungo*).—If you have a frame raise some Scabioses, Dianthus, Comet Asters, Gaillardias, Marigolds, Coreopsis, Phlox Drummondi, Salpiglossis, and similar annuals. As you do not say whether you wish for annuals, perennials, or herbaceous flowers generally, please repeat query; there is plenty of time.

2627—**Treatment of growing Pelargoniums** (*Constant Reader*).—We imagine you wish to exhibit the plants again. In that case much depends upon the sized pot you are limited to. Turn them out of pot, remove about half of the soil, and repot in a mixture of good loam and well-decayed manure; about one-third of the latter. If not wanted until August, cut back the growths half way, and root the points of these for younger stock. Your temperature is right.

2628—**Pelargonium leaves turning yellow, etc.** (*Miss T.*).—You have either washed with too strong a solution or kept your Pelargoniums too dry. If only the lower leaves are failing it is simply natural decay. Repot early in February. You should not syringe the Aspidistra too freely, and the variegated form is not suitable for a cold room at this season.

2629—**Seed for lawn** (*Nottingham*).—When making a new lawn 3½ bushels of seed per acre will be ample. For repairing old lawns one-fourth of the quantity mentioned above is enough. The best time to attend to the lawn is in September or early spring. Hops may be increased by division or seed in spring. A variegated Maple and Broom would succeed in the position you mention.—H.

2630—**Archway posts decaying** (*Isobel*).—We do not care for tar, naphtha, or similarly saturated wood to be in the soil, and plants object to it so much as to refuse to root closely. You can use the Eucomis punctata in the same way as the Yuccas. The Maiden Hair Tree (Salisburia adiantifolia) is a very slow grower, and would make little progress in two or three years.

2631—**Persian Cyclamen buds dropping** (*Disappointed One*).—It seems clear to us that after your Cyclamens had done so well upon a cool bottom you gave them just the reverse treatment upon the dry greenhouse staging Had you spread some sand and Cocoa-nut-fibre on top of this, and kept it moist, the roots would not have experienced so extreme a change.

2632—**Boronia** (*C. H. Deakins*).—Boronias need cutting back fairly hard after flowering, then stood in a warm greenhouse and given very little water. A small plant will not need repotting. A compost of good fibrous peat and coarse sand is generally used, the plants being potted firmly and well drained. You will do well to imitate the compost your plant is now thriving in.

2633—**Growing Asparagus for table decoration** (*E. B., Hants*).—Our garden Asparagus is very pretty when in tiny pots. You can sow at any time after March, and stand in a cool-frame, or in the open a month later. Most of the Asparagus so used, however, consists of the different forms of African Asparagus, often called Asparagus Ferns. These need heat to raise.

2634—**Flowers for cutting for cold greenhouse** (*New Boy*).—You really cannot have cut flowers at such a date in a house that could only be heated "about once a week on the average." Such a plan is far too erratic. Why not use it for bulbs, such as early-potted Hyacinths, Tulips, Narcissus, etc.? These could be obtained much sooner than Daffodils from the open.

2635—**The Oak-leaf "Geranium" and Fuchsia** (*C. G. H. S.*).—No special treatment from the ordinary type of Zonal Pelargonium. Keep your Fuchsias rather dry until they break into growth naturally. Then trim back a little, shake out of their pots, and place into others of rather less size, potting them on into richer soil as growth proceeds. All three are among our most easily-grown plants.

2636—**Repotting Himantophyllums** (*Doubtful*).—When these have flowered they should be gradually ripened off, and stood in a cool but dry place; a temperature of 40 degs. is good. Do not repot until the plant shows signs of new growth. Then give a rich sandy loam, a high temperature, and ample moisture. We like to repot about the end of January.

2637—**Chinese Sacred Lily** (*M. L. P.*).—We have noticed the same variations in this interesting Narcissus. No doubt many importers are slightly deceived in their purchases, but the true Chinese Sacred Lily, or Narcissus Tazetta, is semi-double, with an orange-yellow centre, large trusses, and a strong perfume. Of course, they cannot be compared to our named varieties of the Polyantha section, but they are capital room plants for winter.

2638—**Grafting Epiphyllums** (*C. H. Deakins*).—Epiphyllums are generally grafted upon the Pereskia aculeata. It merely needs a portion of E. truncatum to be inserted in a cut or slit of this stock and slightly tied or otherwise secured. You can insert in a wedge at top, or place several pieces up the stem of the stock. Graft after the Epiphyllums have flowered. An intermediate-house will do.

2639—**Bouvardias** (*R. V.*).—Bouvardias are far from ideal window plants, and cannot be grown well without care and a warm greenhouse temperature at this season. Keep yours rather dry and warm until new growth breaks next spring. Then repot into a sandy loam and leaf-soil, using a small pot and giving good drainage, but not much water until well in leaf. But if you know of a friend with a good greenhouse, get him to take care of yours for you.

2640—**Gooseberries** (*Magpie*).—You may get Gooseberry-bushes and plant at once. Break up your soil deeply, add some very much decayed manure, plant well up, not deep, and then place a mulch of manure about over the roots. Prune hard end of March for this season. Get Leader, Rumbullion, Yellow Champagne, Yellow Sulphur, and Broom Girl, yellows; and Early Green Hairy, Green Gascoigne, Greengage, Keepsake, Shiner, and Thumper, as good greens.

2641—**Bad lawn** (*Magpie*).—Your lawn is suffering from poorness of soil. It wants feeding. You should first cut out as much of the weeds and Heather as you can, then top-dress with a mixture of road-scrapings and native guano. Spread this all over the lawn and well rake it in. Get in April some Grass seed fitted for your sandy soil. Sow it, rake it, roll it well, and when growth follows give an occasional dressing of soot to wash in. You should dress your lawn once a year with Basic Slag and sulphate of ammonia, applied at the rate of 4 lb. per rod, about April.

2642—**Asparagus-bed** (*Clifford*).—Get the ground where your Asparagus-bed is to be trenched 2 feet deep, but keep the best soil on the top. Bury beneath the top spit a good dressing of half-decayed manure, mixing it with the bottom soil. Then fork a similar dressing into the top soil, adding a moderate dressing of crushed bone or basic slag. Let the ground settle. Get plants middle of April, and plant 4 inches deep in rows 20 inches apart, and 15 inches apart in the rows.

2643—**Bone-manure** (*J. B.*).—What you call bone-manure is doubtless bone-flour—that is, bone dissolved in sulphuric acid, and is thus superphosphate of lime. It would be of greater benefit if you could mix with it before using double the quantity of wood-ashes, and half the quantity of sulphate of ammonia, then you would get food for all plants. So mixed it should be applied at the rate of about 6 lb. per rod, or if alone then 3 lb. per rod, strewn over Grass, to wash in.

2644—**Grafting Apple** (*South of England*).—Select nice clean shoots or growths of last year, stout and hard. Cut these 12 inches long at least from your Apple-tree, tie them into a bundle, and when in your new garden set the lower 5 inches of the shoots firmly into soil under a north wall, where they will keep restful until April, which is the time for grafting. But have you any stocks or old trees in your new garden that you can graft? If when there you will write again and describe nature of stocks on which you propose to graft, we can advise.

2645—**Peat-Moss-manure** (*A. A.*).—This material undoubtedly does not produce the same heat in fermentation that ordinary stable-litter does. No doubt a strictly chemical explanation is needed, but we assume that whilst peat-Moss is a cold material that does not create heat in fermenting, straw does so. What heat the peat-Moss-manure gives is usually very fleeting. That from straw-manure is, on the other hand, when properly prepared, enduring. Can you not mix the two manures in making up hot-beds to test heat-production in that way?

2646—**Celery** (*S. Fletcher*).—The sort you mention is not a suitable variety for your purpose. The undermentioned are reliable, and under good treatment would answer well: Major Clarke's Solid Red is excellent, and very hardy; hearts firm, solid, and crisp. Standard Bearer is a sturdy grower; hearts compact, firm, and very juicy. Veitch's Early Rose is a good variety for early work. Ivery's Nonsuch is also very good; the pale hearts are large, solid, and of good flavour.—H.

2647—**Seedling Apple** (*G. J. C.*).—If you care to do so, open a trench 2 feet wide all round your seedling Apple-tree 4 feet from the stem, and cut off every root you can find, and especially any that strike downwards; then fill in the soil and leave the rest to nature. But as you have a clean stem 5 feet high, we should prefer to cut the head clean off just under the lower branches in April, and insert into the stem three strong grafts of some good Apple, such as Stirling Castle, Cellini, or Prince Albert.

2648—**Gas-lime dressing** (*J. T. R.*).—You seem to have done right in your application of gas-lime to your ground. Do not be alarmed at the prognostications of your wise neighbours. If you dig in the lime in some five weeks from the dressing, and will sow seeds or put out plants a couple of weeks later, we should indeed be surprised to learn of any harm resulting. We trust you will derive great good, rather. The usual gas-lime dressing is about ½ bushel per rod, or even a little more.

2649—**Twelve flowering plants for stages** (*Amateur, Exmouth*).—Ivy-leaved Pelargoniums, Campanulas, and Nierembergia gracilis are about the best for hanging over your stage. The first may be had in large variety. For foliage plants we would choose Ficus repens, Asparagus, and Smilax. Yes, you can plant the bulbs and the other subjects, but must be on the watch for slugs and snails. We do not see why a dozen of flowering, and the same of foliage plants of distinct species are necessary, those above being so varied.

2650—**Odd-shaped Potatoes** (*G. H. W.*).—Alas that there should be nothing new under the sun! The two tubers of The Bruce sent are queer-shaped, but this variety, as all the Magnum Bonum type, bring frequently some of the oddest shaped tubers. We have seen hundreds of them. Your flat one had got into a tight place between two hard lumps of soil, and had got pretty well squeezed. The other got a check from drought, then later broke with two heads. We have seen them with five heads like a man's hand.

2651—**Flowers for greenhouse** (*Greenhouse*).—What could you have better than Begonias? They give variety and are very showy. Gloxinias, Streptocarpi, Bouvardias, Caladiums, Fuchsias, Oliveas, Lilies, and almost innumerable Ferns are suitable for summer and autumn. In spring there are Cyclamens, Cinerarias, Primulas, Herbaceous Calceolarias, Genista, Camellias, Azaleas, Deutzias, Spiræas, Acacias, Heaths, Epacris, Epiphyllum truncatum, Cypripedium insigne, and dozens of others far superior to those you mention.

2652—**Heating greenhouse** (*G. Jones*).—If you provide two flow pipes upon the eastern side (which are easily connected to a single flow from the boiler), and one return upon the west, that will be ample. Of course, your return pipe will cross either the north or south end, according to the situation of the boiler. A Lapageria would grow well in such a house, but would be some time before giving much shade. We would not grow Grapes and Orchids together. What shade is necessary is easily obtained by slight washing with "summer cloud," or even whitening. The additional piping upon the east side is because of its colder aspect.

2653—**India-rubber-plant too tall** (*Spot*).—Make two upward cuts in the stem of your plant at the height you would like the future plant to be. Place a small plug of Sphagnum Moss or a piece of charcoal beneath the tongues formed by the cuts to keep them a little more expanded. Next break a flower-pot as nearly in the centre as you can, and secure the two halves together, enclosing the stem of your Ficus elastica. Fill the pot with peat, Moss, and turf; keep well watered, and when full of roots sever the stem. While the rooting process is going on occasionally make an incision in the stem below. This is to check the sap and induce freer rooting for support, and would not be necessary if your plant were not so large. We would not advise you to try to retain more than 3 feet to 4 feet of the top.

2654—**Rockery in cool-greenhouse, etc.** (*J. C. F.*).—The number of plants suited for such a rockery is very numerous. We would prefer a selection of small Ferns, greenhouse Mosses, and Panicums. Pterises, Adiantums, Cyrtomiums, and Polypodiums are useful Ferns. You might plant Lygodium scandens up the posts supporting greenhouse bench. Any of the Tradescantias, also the Lygodium scandens, Isolepis gracilis, Ficus repens, and African Asparaguses will do to hang over. All you need do is to keep them cut back to the desired length.

2655—**Maiden-hair Ferns not growing** (*V. M. Worssell*).—We think it very probable that woodlice are the cause of your Maiden-hair Ferns failing. They are terribly destructive little creatures. Lay some dry cloths down at night, and raise these every morning. Woodlice will seek any dry shelter that is handy. Your Freesias have either been growing too far from the glass, are too small bulbs, or were not sufficiently ripened. The last is an absolute necessity. We do not know of any book more suited to your purposes than GARDENING, and we shall be pleased to answer questions at any time.

2656—**Culture of Lilies** (*Amateur, T., Reading*).—Such Lilies as would thrive in a cold-house—and they are many—may all be potted in a compost of loam, peat, and very old cow-dung. Do not break the compost up too finely; always drain well; start the bulbs steadily, and give more water as they progress. When showing for flower, they enjoy plenty of weak liquid-manure. After flowering allow them to ripen well by simply withholding the supply of water in a gradual way. Quite recently, and even in the present volume, we have had long notes upon Lily culture. As was the case in your other query, we must refer you to these. It would need quite long essays to give full cultural notes of two such large classes as Roses and Lilies.

2657—**Rotatory crops** (*Durham*).—Rotating crops is good practice from a purely manurial aspect, because each crop, if of diverse nature, usually needs diverse food from that which has preceded It is also in the routine of cropping a profitable and convenient practice. If you plant early Potatoes you may get these off in time for Celery. After Celery the following spring may come Peas, and after these Cabbages, or Turnips, or autumn sown Onions. If you gow Peas you can go close with Spinach, or White Turnips; then, the following year, Potatoes, and, after Winter Greens, or Coleworts. After Carrots, Parsnips, or Beet, follow with Peas, Beans, Early Brussels Sprouts, Cauliflowers, or other leaf plants. Really there can be no hard and fast rule laid down, but the above indicates the ordinary practice of gardeners.

2658—**Table for greenhouse** (*A Constant Reader*).—You must find some means of drainage if you use a large zinc trough. Strike the tips of your Oleander in March, and cut the old plant down as desired. They need plenty of water, and a fairly warm greenhouse just before with flowering. Coleus need a light, peaty soil, and to be fed with liquid-manures. Any good florist can supply the manure you mean; if not, order direct from the maker, who lives at Chillwell, Notts. Keep the Cyclamen in a cool-frame while resting during summer, potting early in autumn and using a compost of leaf-soil, turf, and cow-manure; add a little old mortar rubble. Certainly, pot firm. You may treat Auriculas the same, and repot Agapanthus umbellatus early in the spring. The latter needs very little repotting; feed with liquid-manures. You ask more questions than we allow.

2659—**Gardening books** (*J. P.*).—Gardening books, however good, are indifferent substitutes for lack of practical knowledge; but all depends on the intelligence applied to understand their instructions. Probably the most useful book for your purpose, because it is very general in its instruction, is "The Garden Manual," price 1s. 6d., which you can doubtless obtain from a local bookseller. There is, so far as we know, no book devoted to Melon culture, but you will find in "The Tomato," by W. Iggulden, price 1s. 1½d., post free, the best book on that fruit. Write to the author, Frome, Somerset. You will probably find some reference to Melon culture in the first-named book.

2660—**Cupid Sweet Pea** (*Jersey*).—We have found Cupid a free grower, and very dwarf and showy. It was quite equal to the taller growers, and was a mass of blossom all the summer. The seed was sown upon a rich, sandy loam, in a sheltered and warm position. Although not sown before early March, the plants made such rapid progress that they were in flower as early as autumn-sown seed of other varieties. About a foot was the average diameter, and 6 inches high. Do other Sweet Peas thrive in your district? We did not find it so white as was expected.—MID-SUSSEX.

2661—**Seedling Apple** (*T. B.*).—Your seedling Apple from Newtown Pippin may when it fruits prove to be worthless, or it may produce a fair variety. That being an uncrossed or natural production it will be of special excellence is most unlikely. You may leave your tree to make its natural growth and fruit in due course, just keeping the inner branches thinned out. Or you may put grafts of it on to another tree of an indifferent variety, or you may at once get a few Paradise-stocks from a nursery, and plant them 12 inches apart. Bud them in the sides near the ground next autumn—say, middle of August. Should the buds fail you can still graft these stocks in the following spring. Budding or grafting usually induces the earlier fruiting; but much depends on variety.

2662—**Various** (*E. J.*).—Two of the first Longpod Beans are Exhibition and Green Giant. A good short-podded Broad Bean is Green Windsor. It is a green counterpart of the Old Broad Windsor. It is most unusual practice to sow Parsnip seed in September. Tiny roots are formed, which during winter lose their leaves, and get set or hard. Then in the spring they make fresh growth, and frequently bolt off to flower in the autumn. In any case it is so much better to sow seed early in April, when a good root crop will be assured. The true old Shallots have skins of a dull straw-yellow tint, and those of the Giant or Jersey variety have red skins. The true Shallot is best. Bulbs of an almost white colour are sometimes seen; but these are rare. Ask for the true old Shallot.

2663—**Vines** (*M. C. B. H.*).—Unless you specially wished to have a White Frontignan Grape in your house, we should prefer to advise planting Foster's Seedling, as it is altogether much finer, a better setter, and more easily ripened. Gros Colman Grape needs starting into growth fairly early to give it a long season for ripening. Unless colour is well laid on early in the autumn it seldom comes later, especially that the leafage is of the earliest to ripen and colour. Black Alicante always colours well in a cool-house, wanting little heat except just at blooming time, and as the nights get colder in the autumn. A good later white Grape is Lady Hutt, berries when ripe greenish-white. Flowers set well, and generally produce fine bunches. Will hang till the end of the year with some warmth.

2664—**Sandy soil** (*Puzzled*).—It is better that your half acre of pasture ground should rest on sand than on gravel. Sand usually retains moisture well; it is usually sweet and roots like to run in it. Its value, however, very much depends on how treated. We advise you, if you can afford it, to have the entire area trenched. Open a trench 2 feet wide, and of a given length, so as to do the ground in strips. Pare the turf 2 inches thick first, put that aside, then throw out on to one side the whole of the soil 10 inches or 12 inches deep; then break up the sandy bottom deeply with a fork, next throw in upon that, Grass downwards, the turves of the next 2-feet-wide trench, and on that again the top-spit soil. Then break up that bottom and go on as before. If you could do all your ground in that way, then as you planted forked in a dressing of short or half-decayed manure, you would be surprised to find how admirably it would grow all the things you name, and by constant cultivation would in time become deep, fertile, and retentive.

2665—**Heating Cucumber-house** (*Constant Reader*).—In heating a low span house 60 feet long by 12 feet wide it is difficult to understand why you should wish to bury a flow-pipe to give bottom-heat in a wooden chamber with 4 inches of rubble over it, and then above that a slate stage to carry soil. You would not in such a case get any heat whatever from a pipe so buried. A couple of pipes for bottom-heat each side, placed side by side, would not be too much. Place over them, resting on bricks or uprights here and there, stout pieces of quartering, and on these, just over the pipes, place long wooden troughs, 25 inches wide inside and 7 inches deep. Let the bottom be of narrow battens, with an inch interval between each one. On the bottom of the trough lay coarse turfy soil, and then fill up with good yellow loam, rather higher in the centre, and put out your plants in that 20 inches apart. Then you should have two returns on each side to fully heat the house, and keep up a temperature of from 65 degs. to 75 degs.

2666—**Tuberoses a failure** (*A. B. Athy*).—You were in error in placing the tubers in a cold place, especially one at all damp. You will probably fail with the whole of your present bulbs. As a rule, the Tuberose needs more heat to do it well than amateurs possess. Try the following plan next time: Pot as soon as received, using a stiff loam that has a very little sand added. Be sure to ram the soil firmly, and only half cover the bulb. A pot of 4½ inches or 5 inches in diameter is ample. Give one good watering, stand in a warm position for a couple of weeks, and then place the pots upon the hot-water pipes. The latter generally run close to a wall, and in that case the pots can rest against it, thus leaving only a very small portion of the pot in contact with the heated pipe. Give a fair amount of water. You will very seldom find the tubers break into growth evenly. As they reach 6 inches or so remove to a warm bench. This is the safest and most simple treatment we can give; but many succeed in cool-houses during summer, and by adopting various plans of hard forcing. If you will say when you would most prefer blossom, and give us a little idea of your accommodation, we will reply further.

2667—**Clematis and Tea Rose in window-boxes.**—Would Clematis Jackmani and Tea Roses do well in window-boxes, and would the use of Jadoo therein be of benefit?—WINDOW.

*** *Clematis Jackmani is very suitable for the sides of your window-boxes; but you will find the little Fairy or Polyanthas better than most Teas. Jadoo would be good.*

2668—**Bad Cinerarias.**—I have a lot of fine, healthy, and vigorous plants, but trusses are particularly small, not much larger than a shilling piece. I have over sixty plants in 55 deg. of heat, potted in from 8-inch to 10 inch pots. Can you give any explanation why trusses are so small?—E. G. D.

*** *Solely because your seed was saved from an inferior strain.*

2669—**Gentiana arvenensis**—Can you kindly tell me how to grow the above? Last autumn twelve months, I got two plants, which survived the winter, but eventually died in the spring. Last autumn I got two more, and they seem to me to be dead already.—W. W.

*** *Gentiana arvenensis is, seemingly, a difficult subject to succeed with. We have, however, seen it doing fairly well in peat and disintegrated granite. It is a variety seldom grown in English gardens.*

2670—**Swainsonia.**—I have a nice plant of this pretty climber in my greenhouse, which is only heated just to exclude frost. It did not bloom at all last year, though in luxuriant growth. It is planted in a border in the greenhouse. Any advice I shall be grateful for, as I cannot account for the absence of bloom.—J. T. Y.

*** *A too luxuriant growth was probably the cause of no flowers. The Swainsonia grows freely without so much nourishment as most climbers demand, and many fail through treating them too generously.*

2671—**Grenadin Carnation seed.**—I wish to sow some Carnation seed, so that the plants can bloom in the open this year. Will you please tell me the mode of culture?—NEMO.

*** *Sow in March, using pots or pans of a light sandy compost. A temperature of 60 degs. will be good. Like the Margaret Carnations, these have a great objection to root disturbance, except in the very early stages, so prick off singly into small pots, this time using a compost of leaf-mould and turf in equal quantities. Keep the plants in a frame after they have recovered, and plant out at the same time as summer bedding plants.*

2672—**"Geraniums" for greenhouse.**—I have a tiny lean-to greenhouse in a very bad position, for it gets no sun in winter and too much in summer, and it is very damp. In it I have some "Geraniums," which I keep as dry as I can, Freesias, Hyacinths, Richardias, Cyclamen, a Lilium Harrisi, a Eupatorium, some Nicotiana affinis, a Plumbago, and a Hoya carnosa. What temperature should I try to keep up?—H. D. STRATTON.

*** *Fortunately, the whole of the subjects named are suitable for one temperature—viz., from 50 degs. to 60 degs.; but you are not likely to do well under the circumstances you state. Try to avoid damp as far as possible by judicious use of the watering-can and ventilation. Some of the positions small greenhouses are given in towns are simply absurd.*

2673—**Clematis Duchess of Edinburgh.**—Will Clematis Duchess of Edinburgh bloom out-of-doors in—WEST HAMPSTEAD?

*** *Yes; but being a flower that is very double, and a long time coming to perfection, you may sometimes have them dirty through atmospheric deposits. You will see that the name of Clematis sent us was Duchess of Edinburgh, and neither of the two mentioned in your succeeding letter. We have answered your query accordingly. If this is not the correct name, please send again. But most Clematises are very hardy, and will do fairly well in towns.*

2674—**Himantophyllum miniatum.**—I have a large pot of Himantophyllum miniatum. Will you kindly tell me if it is possible to flower the plant at the end of July next? Also what treatment it requires? I may say I have a greenhouse heated by hot water that I can keep at 60 degs. during night now.—W. H. H., *Salop.*

*** *This is an early bloomer, generally during March under the temperature you name; but it would thrive better if a rise of 10 degs. to 15 degs. could be given. Keep it cool and dry now, but when new growth commences it must be given a rich sandy loam, a much higher temperature, and plenty of moisture. Your only plan will be to keep it cool, dry, and at rest as long as possible.*

2675—**Potting Lilium auratum bulbs.**—When can I pot a bulb of Lilium auratum to bloom in early spring, and how to get them in bloom at Easter?—C. L.

*** *Lilium auratum is not a good Lily for early forcing, and it would be very difficult to have same in flower at Easter. We think you must mean one of the white varieties, such as L. Harrisi, candidum, and longiflorum. L. auratum bulbs are only just to hand from Japan. The others can be had in autumn, and force well.*

2676—**Asters with bad centres.**—Nearly all my Asters last year came with bad centres and did not incurve well. The flowers were large. Can you account for this, and if so, how it can be guarded against?—NEMO.

*** *Overfeeding, causing a coarse and too succulent growth; a bad strain of seed; the presence of insects; and too much overhead watering late in the season. Either of the above may be the cause of your failure. Thin out the flower buds next season, and avoid what we have pointed out.*

2677—**Asparagus plumosus nanus.**—When should seed of this be sown? What heat and kind of soil are wanted for same. How deep should it be sown? How long does it take to germinate?—SUBSCRIBER.

*** *Sow the seed as soon as ripe, if you choose; but we prefer to save it in sand for a short time and sow early in February. Use a compost of sandy loam and leaf-soil in equal proportions. Drain well, and sow the seed about twice the depth of its diameter—this is always a safe guide. We cannot say just how long it will take to germinate, but our own are through from four to five weeks after sowing. So much depends upon temperature and treatment. A bottom-heat of 70 degs. with a surface-heat of 65 degs. is very suitable. If stood in a propagating-case they will come on faster. Pot off singly as soon as 4 inches high, and again keep warm and close for a time.*

2678—**Stag's-horn Fern.**—Could you give me a few hints respecting Stag's-horn Fern (Platycerium).—P., *Deal.*

*** *Platycerium alcicorne is one of the most showy and easily grown Ferns. Whether upon the wall, a rough piece of stone or cork, in pots, or upon cork to suspend, it is among the best. A compost of turfy loam, fibrous peat, and a few pieces of dry cow-dung, intermixed with Sphagnum Moss, is good. These should not be broken up finely. Perhaps the showiest method of culture is to fasten to pieces of cork, first securing a mixture of turf, peat, and Moss, by copper wire, and then fixing the small offsets. The plant soon grows, and the extreme variations of its fertile and unfertile fronds are very quaint. Simply take the plant down and soak it occasionally. As room plants they are excellent, and it is surprising they are not more used as such. P. alcicorne has stood in a room for years, and even passed through a frost of 5 degs. to 7 degs. without injury. P. grande and others are not so hardy, while all do better in a moist and warm greenhouse.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*C. G. H. S.*—The name of your plant is Sedum Sieboldi. Any ordinary greenhouse or warm window will suit it. Use a sandy loam, adding a few small pieces of sandstone, and draining the pots well. It needs very little water.——*Piper.*—You have not sent flowers of all the plants, and therefore we cannot determine them with any accuracy. 1, Euphorbia, apparently splendens; 2, Aloysia citriodora (Lemon-plant); 3, Eupatorium Weinmanniana; 4, Please send flowers; 5, Curculigo recurvata; 6, Apparently an Acacia, but flowers wanted; 7, Grevillea robusta. Flowers required of others.——*E. G. P.*—Clematis cirrhosa.——*H. Deane.*—Eupatorium Weinmannianum.——*Mrs. Brooke.*—The Winter Sweet (Chimonanthus fragrans), not a very good variety. Some forms are richer in colour than the one sent.——*Mrs. Griffin.*—Franciscea calycina.——*W. J. Baron*—Veronica Andersoni.——*R. F. F.*—Zygopetalum intermedium.——*E. F. Pearman.*—The examples sent were much too small and quite out of character. Leaves alone are not sufficient to identify specimens from. A small box should be used for sending the specimens in, as they they travel better than when enclosed in an ordinary envelope. 1, Acacia armata; 2, Cytisus var.; 3, Solanum jasminoides; 4, Tradescantia zebrina; 5, Azalea var.; 6, Not in condition; 7, Kenilworth Ivy; 8, Salvia var.——*G. C.*—A, Quercus lusitanica Turneri; B, Q. Ilex (the Holm Oak); C, Q. Suber.——*W. E.*—1, Santolina chamæcyparissus; 2, Choisya ternata; 3, Cupressus Lawsoniana var. (probably amabilis); 4, Juniperus chinensis; 5 and 6, Not in character.——*G. T. Pack.*—The plants were simply pulp when received.——*T. C.*—Pernettya mucronata.——*H. Deane.*—Eupatorium Weinmannianum.——*G. Isaac.*—Dendrobium aureum.——*Constant Reader.*—Specimen much crushed. Apparently a Eupatorium

Names of fruit.—*E. A.*—1, King of the Pippins; 2, Wellington; 3, Rotten. Other questions answered next week.——*Miss K.*—1, Blenheim Orange; 2, Rotten; 3, Probably a small Scarlet Nonpareil, but the fruits were so much past their best that it was difficult to determine their names.

Catalogues received.—Messrs. Barr and Sons, 12 and 13, King-street, Covent-garden, London.—*Seed Guide.*——Mr. B. Soddy, 243, Walworth-road, London, S.E.—*Seed Catalogue.*——Messrs. Cooper, Taber, and Co., 90 and 92, Southwark-street, London, S.E.—*Wholesale Catalogue.*——Messrs. J. Cocker and Sons, Union-street, Aberdeen.—*Seeds and Plants.*——Messrs. Daniel Bros., Norwich.—*Illustrated Guide for Amateur Gardeners.*

LAW.

Gardeners and Fowls.—A year ago I took a situation as gardener, a month's notice to be given to terminate the engagement. A house was found me, for which I was to pay the rates, but which was to be rent free. It was also agreed that I was to keep half-a-dozen Fowls, but before I had held the situation a week the master fetched the fowl-house away. On my remonstrating, he said he could not allow me to keep Fowls. As he has failed to keep his part of the bargain, am I obliged to pay the rates, which amount to 18s. 8d. for the year?—W. C.

*** When your master took away the fowl-house your best course was to have given a month's notice or to have left without giving any notice at all. If you are personally rated for the house, the overseers will compel payment from you; but if your employer is rated for it and you repay him the rates at the end of the year, you may refuse to pay him if you think proper, although it will do you little good, as he will stop the amount off your next wages. If you sue him for the wages withheld, he will counterclaim for the amount of the rates, and considering that a year has passed since you were prevented from keeping Fowls, I think it will do no good to make any claim on that account, seeing that you could have terminated the engagement by giving a month's notice.—K. C. T.

What constitutes a market garden?—In February, 1895, I took 1 acre 0 roods 28 perches of land without any written agreement, and in February last I received notice to quit in February, 1898. In one corner of the field I have planted 1,500 Strawberry-plants, and I have four fair-sized greenhouses, and I sell Cucumbers and Tomatoes. I also have another 1½ acres of land on which I grow Peas, Beans, Potatoes, Cabbages, etc., for sale. Am I entitled to be considered a market gardener? On Dec. 2 I gave my landlord notice that I claimed under the Market Gardeners' Act 4s. per 100 for the Strawberry-plants. Is the claim a good one? Or can I take the plants away?—X. Y. Z.

*** You are evidently a market gardener, and as such are entitled to the benefits of the Act of 1895 in respect of any holding occupied by you as a market garden within the provisions of the Act. It is a question of fact whether a particular holding is occupied as a market garden or not, but I think the growth of 1,500 Strawberry-plants is sufficient evidence that that part of the land is occupied as a market garden, and as you have only claimed for the Strawberry-plants it is unnecessary to consider the matter further. Although the holding is not let in writing for cultivation as a market garden, yet if it, or any part of it, was so cultivated previous to 1896, and the landlord knew of this before January 1st, 1896, the Act of 1895 applies. In this event you may enforce compensation for the Strawberry-plants as you have made the claim in good time. I can say nothing as to the amount of your claim, and if you and your landlord do not agree as to the amount of compensation, the matter will have to be settled by reference in the manner prescribed by the Agricultural Holdings Act.—K. C. T.

Land held on lease in Scotland.—I took a garden, owned by a public body, for the term of five years, and four years of the term expired on January 1st last. It was a condition of the letting that if a part of the ground was required I was to give it up, but there was a verbal promise that if I was occasioned any loss, it should be made up to me by the owners. My rent runs from January to January, but at Whit Sunday last I received notice to quit at Whit Sunday next. I have 4,000 fruit-bushes

of various kinds on the land, and a large quantity of flower-roots and bulbs. Can you give me any information?—GLENCOE.

*** I regret that I have not sufficient knowledge of Scotch law to give you any reliable information. But I do not think that anyone could advise (on the facts stated) whether the notice you have received is good or not; reference to the terms of the lease would be necessary. But I should expect to find that the notice was a good notice, and that you were entitled to compensation for the fruit-bushes and other matters (but not for the flower roots and bulbs) under the Market Gardeners' Compensation (Scotland) Act, 1897. —K. C. T.

Trespassing Fowls.—My neighbour's Fowls continually stray through the hedge which divides my garden from his property, and although requested many times to keep them out he refuses to do so. What must I do?—W. D. T.

*** Your remedy is a very simple one. You must sue your neighbour in the county court to recover damages for the injury and the annoyance caused by the trespassing Fowls.

Tenant's fixtures.—Before March 25th I intend to give notice to quit this house in September, and I have at considerable expense erected a fowl-house and enclosed with wire a large bed of small fruit. Can I remove these at any time before quitting, or should I remove them before giving notice, as my landlord, at present, refuses to take them off my hands?—C. H. M.

*** If these matters are tenant's fixtures it is immaterial when you remove them, but if they are not such, you cannot remove them at all. I do not doubt that you may remove the wire at any time you choose before actually quitting, but your right to remove the fowl-house depends upon the nature of the building and the way in which it is affixed to the ground. Buildings, which from their structure and method of fastening are evidently intended to be permanent erections, may not be removed without the consent of the landlord, and brick buildings are examples of this kind. In some places custom allows a tenant to remove all wooden buildings, unless strongly affixed to the freehold, but this custom is not universal. As you do not say how your fowl-house is constructed, or affixed, it is impossible to say if it is really removable by you; but if the matter be really doubtful it will be best to remove it at once, as there will be less danger of any stir being made by the landlord. —K. C. T.

Notice to determine service (*Notice*).—The young man is evidently either engaged as a gardener or as a man-servant residing on the premises. In the latter event his employer will be liable to duty for a male servant. A month's notice from either side is necessary to determine the service in the absence of an express contract for some other notice.

Removing Rose-trees (*A. Baxter*).—No, you cannot remove the trees.

SURPLUS PLANTS.—4 Regal Pelargoniums, 6 Superb Streptocarpus, 4 Ferns, 4 Pearson's Zonals, 2 Hydrangea, 3 Primula obconica, 3 Primula floribunda (a gem), F.C.C., 3 splendid Petunias, 2 Ivy-leaf, 2 Chrysanthemums, 6 Deutzia gracilis; bloom at Easter; 54 strong plants, 4s. 6d., free. 2 named Rose-trees for pots, gratis with order. Half lot, 2s. 6d., free.—HEAD GARDENER, 46, Warwick-road, Banbury.

CARNATIONS (border): Mrs. R. Hole, Mrs. Muir, Crim. Clove, Raby Castle, 3 of each, 1s. 9d.; 12, do., 6s. Pinks, Snowflake and Mrs. Simpkins, 6 of each, 9d.—TRUSTEES, late J. STEVENSON, Timperley, Cheshire.

HENDER'S GRAND PETUNIAS.—The best offered. Splendid mixed Double Fringed, 1s. 6d. and 3s. packet; Rose colour, ditto, 2s.; Single Striped, 1s. and 2s. Fringed, 2s.—HENDER and SON'S Nursery, Plymouth.

TUBEROUS BEGONIAS, Single, magnificent strain, our own hybridising and raising from selected plants of Messrs. Laing's, Ware's, and Box's famous productions. One-year-old tubers, mixed colours, comprising scarlet, rose, crimson, white, yellow, &c., 2s.; per doz., 12s. 6d. Our Begonias always give perfect satisfaction. Free for cash.—CRANE & CLARKE, Hillside Nursery, March, Cambs.

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GARDENING ILLUSTRATED.

No. 987.—Vol. XIX. *Founded by W. Robinson, Author of "The English Flower Garden."* FEBRUARY 5, 1898.

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CHRYSANTHEMUMS.

Chrysanthemums—eighteen Pompons for September and October flowering outdoors (*H. Green*).—Although many of these have been grown for years by the trade and others specially interested, they are scarcely known beyond the limits of the gardens of those alluded to. You should get Blushing Bride, lilac, passing to blush-lilac; Bronze Bride, rich bronze, sport from the first-named; Anastasio, small rosy-purple flowers, very dwarf and compact; Canari, brown-yellow, free, bushy, compact; Flora, golden-yellow, bushy, and fairly compact; Fiberta, rich canary-yellow, bushy, dwarf, compact, continuous bloomer from August till October; Little Bob, one of the brightest for border work, small deep red flowers, nice bushy habit; Alice Butcher, red suffused orange, nice clean growth, splendid habit; Lyon, the parent of the last-named, rosy-purple; Mme. Ed. Lefort, fimbriated flowers, colour old gold, shaded red; Mme. Jolivart, white shaded pink, a very free, dwarf, and useful plant; L'Ami Condérchet, soft yellow, deepening at the centre, nice, bushy, compact habit; Toreador, red, tipped orange, bushy habit, free flowering; White St. Croats, white, free flowering, and dwarf; Piercy's Seedling, bronzy-yellow, free, dwarf, and a continuous bloomer; Nanum, blush-white, free, dwarf, bushy and compact; Crimson Précocite, crimson, tipped gold, bushy habit, free; Yellow Gem, fimbriated, orange-yellow, nice habit.

Chrysanthemums—18 Japanese for September and October blooming outdoors (*H. E.*).—You may think this a large selection for flowering during the period mentioned in the heading to this reply, but it only represents a tithe of the many good sorts that are each year being acquired. We cordially recommend the following sorts: Arthur Crepey, beautiful canary-yellow; Francois Vuillermet, rosy-purple, very bushy and compact; Edith Syratt, free flowering, bright purple, dwarf; Edie Wright, rosy-purple, passing to pink, 3 feet, one of the best; G. Wermig, deep yellow, outer petals paler, good habit; Harvest Home, crimson and golden, the earliest of the rich coloured sorts, rather spare habit, yet free flowering; Ivy Stark, pale orange-yellow, a recent acquisition, splendid bushy habit; Mme. C. Desgrange, white, good border sort; Mme. Marie Masse, lilac-mauve, very free, bushy habit, splendid constitution; Mychett White, pure white, very dwarf, free. The foregoing are seen at their best during September, and generally continue on well into October. For a bright October display secure the following sorts: Notaire Groz, rather above 4 feet, delicate silvery-pink blossoms, and very chaste; Ryecroft Glory, orange-yellow, good bushy habit; Mme. la Comtesse Foucher de Cariel, bright orange, very free and dwarf; Vice-President Hardy, orange-scarlet, yellow reverse, rather loose habit, but useful for cut-flowers; Mlle. Guindudeau, pink suffused purple, bushy spreading habit; Lady Fitzwygram, pure white, very free and dwarf; Bronze Prince, beautiful old gold, unique colour; and M. Chauchard, pretty narrow-petalled flower, colour reddish-orange. This is a selection of the best for an outdoor display, and we are convinced you will do well with them.

Propagating early-flowering Chrysanthemums (*H. Green*).—You ask, when is the best time to strike cuttings of the early-flowering Chrysanthemums? There is little doubt about the advantage of late winter or early spring propagation of these sorts. We, therefore, strongly recommend you to commence at once inserting cuttings of the most popular Japanese sorts first. There are many excellent sorts which have more recently attained prominence, the late trial in the gardens of the Royal Horticultural Society being very good, and ably illustrating the value of this type of the plant for flowering outdoors in the open border during September and October, and even later when the weather is not too severe. The Japanese sorts are best seen to first, as they seem to need just a little longer time to develop their growths and to perfect their blossoms. At any time between the present and the end of March it is quite possible to root the Japanese varieties with a fair prospect of success. If the cuttings root quickly, and they should certainly do so within a month, by the end of May, or possibly a fortnight earlier, they should be, as the result of repeated shifts into pots of large size, just the best kind of plants for making large bushes in the open border, to bloom in profusion during the period previously alluded to. We have known of pretty little plants being grown from cuttings inserted during April and May, but of course they do not attain to anything like the same dimensions as those propagated earlier; neither is the period of blossoming quite so early. Propagate Pompons during the period best suited to the Japanese sorts, but really excellent results follow a March propagation. Most of the Pompon sorts partake of a very dwarf and compact habit, so that, although they may be propagated so late as March, the lateral growths are so numerous that in a comparatively short time a plant capable of developing some hundreds of blossoms is perfected. September and mid-October is their great time to blossom, and then they are truly most profuse in their display. You also ask, can these sorts be rooted without the aid of a heated greenhouse? To this we reply, yes, although, to satisfactorily do this, a cold-frame or pit around which there should be packed plenty of stable-refuse, or anything of that kind, is of the highest importance. The present season has, in fact, been specially suited to the propagation of Chrysanthemums; but how long the present mild weather is to continue is doubtful. You may therefore put your cuttings in pots, boxes, or anything else that will answer the same purpose, and plunge these in ashes, spent Hops, etc., in the frame. At the same time you must ensure absolute protection from frost, when we do experience it, and this is very likely to be felt very soon. In the greenhouse, in which there is a nice genial warmth, the new growths, if taken off the old plants and inserted at once, should root in two to three weeks, and go ahead right away afterwards. The latter method is by far the best, providing you can harden off the young plants properly afterwards. You will find in taking up the culture of these plants for an outdoor display far more satisfaction than in growing the ordinary exhibition sorts. These hardy sorts keep the garden gay during the autumn, and also provide you with an immense wealth of blossoms for cut-flowers during the same period.

Chrysanthemums for three months' home display (*A New Reader*).—As your object is to provide the best home display to extend over a period of three months, you should have little difficulty in obtaining this result. You state that you would like to grow three or four blooms on each plant and with the sorts mentioned in your letter you should have no difficulty in this matter, as they are all well adapted for the purpose. We have divided your selection into three different periods, so that you should obtain your blossoms during October, November, and December. Semi-early sorts are: Baron Hirsch, Source d'Or, W. H. Lincoln, and Souvenir de Petite Amie, and should be allowed to break naturally, as should those in each of the following sections, and crown-buds retained. Each of the foregoing sorts are rather dwarf. For a mid-season display (November): Viviand Morel, Rose Wynne, Ernest Capitant, Florence Davis, Eva Knowles, Mme. Carnot, and Mlle. Thérèse Rey are the best of the Japanese, while Golden Empress, John Lambert, and Lord Alcester ably represent the incurved sorts. Retain second crown-buds of each of these from a natural break. The last three Japanese are rather tall, others of medium height from the bud recommended. Late sorts are well represented by Niveum, Good Gracious, R. C. Kingston, and the Queen from late August or early September buds. The second and last sorts are rather tall. W. H. Lincoln also makes a splendid late-blooming plant if the buds be retained well into September.

Chrysanthemum Pride of Ryecroft (*Regular Subscriber*).—This variety is, as you state, a yellow sport from Niveum, so widely known and highly appreciated as an excellent December-flowering sort. We understand it sported at Ryecroft Nursery, Lewisham, S E. It should prove a valuable acquisition both for home decoration as well as for market purposes.

Chrysanthemums — stopping and bud-retaining (*Avondale*).—We are pleased to learn you value the list published in our issue of 15th January. You ask what we mean by a "late" crown-bud. When referring to sorts needing the late crown-bud retained, you will find it generally refers to plants, or rather sorts, which produce in the course of their summer growth a series of crown-buds, each one only a few weeks removed from the previous one, and often in a lesser period of time. We could not very well state whether it was the third, fourth, or what bud it would be, so we therefore suggest you should retain those buds which usually appear about the latter part of August and a trifle later. W. H. Lincoln, Emily Silsbury, William Tricker and its sport Mrs. W. S. Trafford, are each typical of the sorts here referred to. You raise the question

of date of propagation, suggesting that a variation in the date of this work would affect the ultimate results. If grown naturally there is no doubt it would, but by adopting the principle of pinching the whole manner of growth of plant is afterwards changed. By this means a grower may, to a large extent, make up for late propagation, and *vice versâ*. The points you raise as to a grower in the country as against a grower in less favourable circumstances always will arise, and the grower in unfavourable localities, crowded areas, and with other atmospheric disadvantages, must naturally always be at a disadvantage. We give our advice for those in an ordinary position in which gardening generally may be carried out satisfactorily. A grower in the country will always have an advantage over those living in less agreeable places, but the latter may be considerably helped by following the instructions given, and to which you refer above.

Outdoor Chrysanthemums at Ilfracombe.—In your issue of January 23rd, 1897, you were good enough to give a lengthy reply to my inquiry, as to some of the newer sorts being adapted to our North Devon climate. I tried most of the kinds you named with general satisfactory results, but more especially successful were Cecil Wray, Eynsford White, Souv. de Petite Amie, Mutual Friend, Mrs. Conway, Duchess of York, W. Seward, Deuil de Jules Ferry, Colonel Chase, and Elmer D. Smith. Of course the season has been exceptional; and when I instance the fact that I now (January 23rd) have Calla æthiopica blooming in a pond you will note that this district is specially favoured as regards temperature. To the above-named Chrysanthemums of modern introduction I would add the following, which have done extremely well, viz.: Commandant Blussett, Mrs. E. G. Hill, Interocean, Duke of York, and also the old varieties, Avalanche, Lady Selborne, Source d'Or, Val d'Andorre, Mr. A. H. Neve, John Salter, Viviand Morel, Bouquet des Dames, Mr. W. Holmes. I may mention that I had Bronze Blushing Bride, Early Blush, and others blooming in August, and that to-day I picked fair blooms of Golden Wreath, Eugene Dailledouze, and President R. W. Smith growing under trees with a north aspect.—Miramar.

GARDEN WORK*

Conservatory.

The early Cyclamens will now be going out of flower, but other batches will be coming on, and as the forward plants stop blooming move to a cool-house and gradually withhold water to ripen growth, and when that is completed lay their pots on the sides. Complete and gradual ripening is necessary to ensure perfect resting with the bulbs in a sound state, so that they may break strongly about next June—some will come earlier and some later. These plants are so easily raised from seeds that it is hardly worth while to keep them longer than two years. The young seedlings raised in autumn will now be pricked off in boxes, and must be kept in an intermediate-house to ensure robust and steady growth. Those who have a good strain should save their own seeds. Late blooming plants are best for seeding. Such climbers as Tacsonias, Passion-flowers, etc., will now be breaking into growth, and disbudding should begin. Where the house is fairly lofty, close training should not be attempted, as the flowering shoots look well when hanging gracefully down. The variety Cobæa scandens is a pretty climber for the conservatory when allowed a considerable amount of freedom. Mandevilla suaveolens is a good climber for a lofty house. The flowers are very fragrant. Oleanders in variety, when well managed, are useful plants for the conservatory, but they are usually allowed to run up too much. Prune after flowering, and place outside in summer to ripen growth. There is a great demand now for flowers for cutting, and it is necessary to bear this constantly in mind. No one has too many Roses, and these should now be coming on in quantity. The Teas are the ladies' favourites, but some of the dark, velvety crimsons should also be forced. General Jacqueminot is a favourite Rose for forcing; but any of the vigorous-growing H.P.'s will force well when well established in pots. A few standards and half-standards will be useful in pots to stand among other things in the conservatory. Good plants of Laburnums are useful, and the double Scarlet Thorns if brought on quietly in the Peach-house, will be useful.

Stove.

As the Poinsettias go out of bloom keep them dry for a time to ripen the wood. Many of the later plants are still very bright. April or May will be time enough to strike cuttings for next winter, and many will be struck later. All flowering plants, such as Euphorbia splendens, Begonias, Justicias, etc., should be pruned rather hard back after flowering, and when they break again shake out and repot. Some of the worst of the old plants should be thrown out, especially the Begonias, as cuttings strike so freely, and, if one wants a few good-sized specimens, they are easily made by placing three or four plants in a pot. Of course, those who grow plants for exhibition must not build them up in this way, but for home decoration, where a few good specimens are desired, these are easily created. Summer-flowering climbers, such as Allamandas, Clerodendrons, and Bougainvilleas, will soon be breaking into growth, and in order to get plenty of flowers train the young shoots up into the light. Get a stock of suitable soil into a shed ready for potting. The earliest rested Gloxinias will now be starting into growth, and should be repotted. Give them fairly rich compost and both the foliage and flowers will improve.

Cucumber House.

Do not crowd the house with other plants if the Cucumbers are expected to do well. If green-flies are taken into the house they will give trouble. Vaporising is the most effective remedy. Young plants set out now will soon make rapid progress. Do not shade till it is absolutely necessary. With a saturated atmosphere the leaves will neither scald or flag, but they must not touch the flowers. Give frequent light top-dressings of free, open, rich stuff. This will not only encourage the roots, which are constantly running out on the surface when the plants are doing well, but it will also keep the atmosphere sweet, keep it from getting stuffy, and so encourage mildew. I may say during the last ten years which I have grown Cucumbers on the non-ventilating system I have never had so little trouble with insects, and have never seen a speck of mildew.

Ferns in Warm House.

Repotting, if necessary, accompanied by division of the crowns, may be done now, as in most instances new growths will be coming away soon, and it is best in repotting to anticipate that. Adiantum Farleyense, and any others which do not produce spores, must, of course, be increased by division. We find many of the Adiantums, including the one just named, to do best in pure loam, if the loam is good. Ferns, like other plants, must be watered less frequently after repotting, and should be kept a little closer and be shaded from bright sunshine to encourage root action.

Room Gardening.

Tulips are among the cheapest of room ornaments. They are now forced thickly in boxes, and lifted as they come into bloom, and planted in vases of any kind or shape in Moss. Sometimes a small Fern is placed in the centre, and the Tulips grouped round it.

Outdoor Garden.

The winter still continues very mild, and bulbs are coming rapidly forward. Of late years more has been done with bulbs in the turf on the lawn, under trees, and on banks, and round the margins of shrubberies. These positions seem to be the natural home of Crocuses, Daffodils, and Snowdrops. Aconites are not so well adapted for planting among Grass, but they are charming on shelving banks, under trees, where the shade is not too dense. There has been no frost to stop planting operations up to the present, and this work should be in a forward state now. Of course, where large alterations are going forward, planting is often extended up to April. We did a good deal of planting last April, but though the early part of the summer was dry, with mulch and plenty of water nothing was lost. Syringing over the foliage of newly planted trees during the spring and early summer is a great advantage. One advantage of having a large garden is the opportunity it gives to produce variety both of surface and style of planting. It is pleasant in early spring to come unexpectedly upon a bank of Aconites, or Snowdrops, or Honesty; later on Bluebells, Foxgloves, Evening Primroses, and other things which grow freely without much culture. We sometimes find gardens where Roses fail, but the old China—and a charming old Rose it is—will grow anywhere, but, of course, it pays for good culture. Give the finishing touches to Carnation and Pansy-beds. There are two seasons for planting Pansies—in autumn for exhibition and in spring for summer display.

Fruit Garden.

Where the birds are eating the buds of Gooseberry or Currants dust with soot or lime. It is better to anticipate the birds. Mossy fruit-trees in orchards or gardens should be dressed with lime, and the roots top-dressed with something rich if the Moss arises from poverty in the soil. If the land is damp it may be necessary to drain it, and there is fruit land that would be improved by draining, and more that might be improved by manuring and liming. In planting young trees on clay lands place a couple of slates or something that will keep the roots from growing down, and keep the trees well up in the soil. Young trees which have been planted three years or four years may be lifted and replanted. This replanting is a great advantage, especially where the subsoil is unsuitable. It is a great mistake to dig over or among the roots of fruit-trees with a spade. This is one of the causes of the production of suckers. Where the roots are injured by the spade suckers start away. Strawberries in flower under glass should be assisted with the camel's-hair pencil. Remove all weakly blossoms. Do not crowd the plants, and ventilate freely to keep the foliage healthy and strong. The most suitable temperature for Strawberries is about 50 degs. at starting, to be gradually increased to 65 degs. when the fruits are set and swelling, to be cooled down a little later when the fruits are ripening. Bring on fresh batches of plants to make sure of a succession.

Vegetable Garden.

Make up hot-beds in succession for Potatoes, Horn Carrots, Radishes, Lettuces, Asparagus, etc. Beds 3 feet high, if well put together, will do for all these things now. If Cucumbers are grown in frames a bed should be started soon. The manure and tree-leaves should be thoroughly blended, and turned over at least once before making up the bed. If stable-manure alone is used more time must be allowed for fermentation to drive off some of the rankness before the bed is made up. Make it fairly firm to ensure a steady and lasting heat. Put on the frame, and as soon as the heat is steady and the drops of moisture which condense inside the frame clear and free from impurities anything may be planted therein. The bed for Cucumbers should be not less than 4 feet high and a foot wider on all sides than the frames. If a warm pit can be spared for other purposes plant it with dwarf French Beans. By the time the Beans come into bearing Peach-houses and vineries should be cleared of French Beans; and this vegetable is so important that an effort should be made to keep up a supply. Transplant Tripoli Onions, and plant out more Cabbages and Lettuces from seed-beds. Sow Horn Carrots, Radishes, Lettuces, and Brussels Sprouts outside on a warm site, and plant early Potatoes and sow Peas and Beans. As fast as the Winter Greens, Celery, etc., are cleared off prepare the ground for next crop.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 31st.—Planted Duke of York and Ashleaf Potatoes on warm border. Sowed French Horn Carrot, Radishes, Lettuces in warm position. Earthed up young Cabbages. A few have started away; these have been pulled up and the places filled up with young plants. Pricked off Cauliflowers sown under glass in boxes in frame. Planted out more Tripoli Onions from seed-bed.

February 1st.—Finished training Peach-trees on south wall, and Morello Cherries on north wall. Peach borders are never cropped within 6 feet of wall, but a few early Potatoes, Radishes and Cauliflowers are planted along the front. Cleared off dead leaves from Brussel Sprouts and other Greens. Used camel's-hair-brush to Peaches just in flower in second house. In addition to this the trellis is shaken daily.

February 2nd.—Potted off bedding plants and put in more cuttings. Made a new plantation of Her Majesty Pink. Planted several rather large groups of Pæonies, German Iris, and Hellebores round the margins of shrubbery. Moved a lot of Spiræas, Deutzias, and other forcing plants to warm-house. Looked over Vines in early house and tied down shoots that were not quite ready at the last tying.

February 3rd.—Planted Melons in warm-house. Commenced thinning Black Hamburgh Grapes on pot-Vines. Shall follow this up from day to day, as the bunches are ready. All sublaterals are pinched back at the same time. Potted off Tomatoes. A continual stream of Tomato, Cucumber, and Melon plants to meet every demand will be kept up now by occasional sowing. Cleared out some Laurels in shrubbery to make room for Hollies.

February 4th.—Pruned Roses on south wall. We want early blooms, and these follow close upon the Roses under glass. Stirred the surface among spring flowers now rapidly coming on. Started Dahlias in heat. Top dressed borders of late vinery with a mixture of various artificial manures, and lightly stirred them in. Disbudded Peaches under glass. Stopped and tied early Cucumbers.

February 5th.—Planted more early and second early Peas. We want a good lot of Peas as early as possible and onwards in succession. Dug over early Celery ground for Carrots and Parsnips. Gave a further dusting of soot and lime to bush fruits; birds are numerous. Set figure of 4 traps to catch mice among Peas and Beans. Shifted on a lot of young Ferns to 4-inch and 5-inch pots, and potted off a lot of seedlings from boxes. Shook out and repotted a lot of Maiden-hair Ferns.

Daffodil-buds dying (*P. B. L.*).—If Narcissus Van Sion is brought into heat too early it often produces buds that go blind before expanding. Double Daffodils are more subject to failure in this respect than are the singles, as "P. L. B." has proved by his experience of princeps and Trumpet major. The double white N. poeticus, in the open, often produces a quantity of blind buds, a circumstance that rarely occurs in the single variety. N. Van Sion should be potted late in September, and should then be covered with ashes or Cocoa-nut-fibre to the depth of 6 inches. The roots then start into growth at once, but the leaves move slowly. When these latter are about an inch high the covering material may be removed and the pots or boxes removed to a cold-frame. Here they should remain until the commencement of December, when they may be brought into the greenhouse, being moved into higher temperature after a few days. By this treatment the flower-bud will have been enabled to emerge from the bulb before the application of heat, and will more readily respond to the latter's influence than if this was applied at an earlier period. The bulbs housed in December, if accorded the treatment here recommended, will generally expand their flowers earlier than batches that were housed a month earlier. At no time is a high temperature required, 55 degs. to 60 degs. being the maximum advisable. With a steady temperature of 55 degs. and a copious water supply the double Daffodils should flower early in January. No bottom-heat is requisite to ensure early flowering.

Annual flowers for border.—Regarding "M. I.'s" inquiry, on p. 687, for hardy annuals for border, perhaps my experience would interest him. My border is 180 feet long and 6 feet wide, with a 6-foot brick wall on the south side. On the wall I grow Ayrshire, Gen. Jacqueminot, and Duke of Edinburgh Roses, and against the buttresses Sweet Peas. In the border Harpaliums, Michaelmas Daisies, Iris,

Wallflower, Campanulas, Day Lilies, Gladioli, Lilies in variety, Cornflowers, Shirley Poppies, Gaillardias, Zinnias, Salpiglossis, Silene, Pinks, Pansies, Coreopsis, Delphinium, and Foxgloves. Many of these I found in flower on November 1st last year. It is generally supposed that such flowers cannot be obtained on a north border, but I have proved the opposite; but, of course, there is no tree shade.—Herbert Stoneham, *Godstone Court, Godstone, Surrey.*

ROSES.

PEGGED DOWN ROSES.

The illustration represents shoots of the varieties Ulrich Brunner and Pride of Waltham, which are two of the most suitable kinds for pegging down. At the time I took this photograph the long shoots were completely covered with the large fragrant flowers, all much of a size. I always peg down a number of my Roses

Shoots of Ulrich Brunner Rose pegged down. From a photograph by Mrs. Deane, Fairfields, Fareham.

and plant my dwarf standards among them, thereby adding greatly to their effect, as the one relieves the stiffness of the other. It is very difficult to photograph a subject of this kind, because the Roses being so close to the ground, the camera must be sloped so much to secure an adequate representation of the flower. D.

Climbing Roses for span-roofed house.—I have a span-roofed greenhouse not heated. It is 22 feet by 10 feet 6 inches, 9 feet high, a border at each side 20 inches wide. I want to grow climbing Roses in it. Would you kindly tell me how many Rose-trees it will take, and which are the best sorts for market? I would like different colours and good growers and bloomers. Please give answer in Gardening Illustrated?—Old Subscriber.

*** Roses are really not suitable for such a house, for we have no doubt you would wish other subjects beneath. However, if you mean to try, plant 4 feet apart, and select William Allen Richardson, Maréchal Niel, and Reine Marie Henriette. Prune back hard each summer after flowering, and endeavour to get as much new growth from the base as possible. This you must keep clean and healthy, as well as getting it well matured by early winter. As your house is unheated, you will need to ventilate freely to keep the plants from breaking too early in spring. Read our frequent notes upon seasonable work; these will soon contain hints upon Roses in cold-houses.

Gallica Roses.—Will you kindly state what kind of Roses "Gallica" are? If they are double? And are they considered specially suited for growing in or near London?—W. W.

*** Rosa Gallica is the botanical name of a class of old-fashioned Roses frequently spoken of as French Roses. It is to this class that such o'd favourites as Rosa Mundi, Village Maid, and York and Lancaster belong. There are many shades and varieties, ranging from the deepest damask to blush-white. It is a particularly hardy class, and well adapted for towns. Some of the flowers are very large and double, others only semi-double. Their great fault is that many are only "summer bloomers"—*i e*, they flower well once, and give only an occasional blossom during the remainder of the season. In our other classes we find some really grand Roses for town culture. Mrs. John Laing, General Jacqueminot, Boule de Neige, Marie Van Houtte, Mme. Lambard, Gloire de Dijon, Common China, Prince Camille de Rohan, Duke of Edinburgh, Viscountess Folkestone, G. Nabonnand, and Souvenir de la Malmaison, are a dozen which give a wide variety of colour, and are equally hardy.

Moving Roses.—Last November I planted some dwarf bush Roses (H. P.). Will you kindly inform me whether it will be safe to remove same to another position in February or March next? By replying through your columns I shall esteem it a favour.—Urban.

*** In early March the plants may be moved if care be taken.

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FERNS.

THE MAIDEN-HAIR FERNS.

A. formosum.—This fine strong growing New Zealand species is one of the most ornamental Ferns in cultivation. The fronds are light green in colour, from 2 feet to 3 feet in height, and produced from slender underground creeping rhizomes. They are erect, or nearly so, with pinnules small and hairy rachis, and their stalks, which are proportionally very strong, are of a shining jet black. It is of very easy culture, and succeeds admirably in a greenhouse.

A. glaucophyllum.—This is a very beautiful, neat, small-growing species from Mexico, rarely exceeding 8 inches in height. The fronds, which are produced from a slender rhizome, are of a pale green colour.

A. hispidulum.—A very handsome species, with fronds profusely produced from a crown, and attaining the height of 15 inches to 20 inches. They are dark green in colour; the stalk rough, being covered with short, stiff brown hairs. It is an Australian species of very easy culture, and does well in a greenhouse.

A. Lathami.—A beautiful garden variety, probably a natural sport from A. scutum, from which it differs in having a graceful drooping instead of a semi-erect habit of growth. The fronds are produced from a tufted crown, and measure from 2½ feet to 3 feet high.

A lunulatum.—A very distinct and handsome species from the East Indies. It has a very slender and pendulous habit, on account of which it is considered one of the best basket Ferns by all who grow it. The fact of its being deciduous accounts for its loss in many cases, as care must be taken in the winter that it does not become thoroughly dry, or it will not start again. I have always found it to do best if kept moist at the roots all the year round; by that means it does not die down altogether, and perhaps does not get quite as much rest as if treated as a deciduous species. Stove.

A macrophyllum.—This beautiful erect-growing species, from the West Indies, is one of the handsomest and most distinct of the whole genus. The fronds, when young, are of a delicate pink or red, changing to bright green with age; they are produced in great abundance, and have their stalks stout and shining black. It requires to be well supplied with water at the roots, or it will have a wretched appearance, its beautiful fronds becoming spotted. Stove.

A. palmatum (digitatum).—A very beautiful Fern with fronds of an indefinitely elongated form, produced from a stout creeping rhizome, and very well adapted for basket culture. Grown in that way it soon makes a handsome specimen, as the fronds, which are light green in colour, attain a considerable size.

A. pedatum.—This ornamental and thoroughly deciduous North American species, although perfectly hardy and most suitable for the out-of-door fernery, makes a very fine specimen for the greenhouse, where, in fact, it shows itself to better advantage, as, being of rather a fragile substance, it is seldom seen in perfection outside unless it be in a very sheltered situation. The fronds, which are produced from an underground thick rhizome, grow to 18 inches or more in length, are of a delicate green colour, pedate or bird's-foot shaped, and smooth; they are supported upon black shining stems. Greenhouse.

A. princeps.—Not only does this splendid Maiden-hair from New Grenada possess a bold character on account of the size of the fronds and the pinnules, but the plants are also remarkably graceful from their fulness of development and the arching and pendent position which they assume. Stove.

A. rubellum.—A very pretty Peruvian species of dwarf habit. The fronds are produced in great profusion, the young ones being on their first appearance of a beautiful purplish-crimson tint, changing to light green with age, but even then tinged with pink, so that a good specimen is always more or less enlivened by a roseate hue. Stove.

A. Sancta-Catherinæ.—The fronds of this truly ornamental Brazilian species are from 1 foot to 2 feet in height; they are freely produced from an underground thick rhizome; the stalks and rachis are wiry and jet black; the

pinnules, rather far apart, are dark green, and coarsely toothed. It requires little light. Stove.

A. SCABRUM (Silver Maiden-hair).—A very compact-growing and beautiful species from Chili, very seldom met with in cultivation; the fronds, which are produced in great quantity, seldom attain more than 9 inches high; they are dusted on both sides with a white farinose powder. It is generally considered a difficult plant to grow, but it is only on account of its being kept in too great heat, and with too much moisture round it. I have seen it grown best on a dry shelf with Cacti, and very little allowance of water during winter in a greenhouse.

A SCUTUM, or, more accurately, A. Ghiesbreghti, under which name, however, it is very little known, is a beautiful plant which has sprung up in our gardens without anyone being able at present to say from whence it has come, or if it is merely an altered and improved form of some species already in cultivation. Anyhow, it has the power of reproducing itself freely from spores, as may be seen by the immense quantities yearly grown for market. It is a fine large-growing kind with somewhat the habit of A. Farleyense, but less dense, and makes one of the finest Maiden-hairs for decoration or exhibition. Its beautiful fronds are somewhat ovate, from 18 inches to 24 inches in length, and produced from a thick crown; the pinnæ, large, slightly crenate on the margins, are of a bright green colour; the stalks and rachis are black and shining. Stove.

A. SULPHUREUM.—This beautiful dwarf evergreen species from Chili, a fit companion for the pretty little A. scabrum, is always regarded as a difficult subject to manage; it is, however, well deserving any extra trouble it may cause, but will succeed well under the same treatment as A. scabrum—viz., on a dry shelf in a cool-house, with little water during the winter months. The fronds, which seldom attain more than 8 inches in height, are produced from a crown. Greenhouse.

KALMIAS.

IN the early days of May one of the brightest pictures among hardy shrubs is furnished by a mass of the little Kalmia glauca, which is then thickly covered with its charming bright purplish-pink coloured flowers. It is a beautiful shrub, which is not grown half so much as it should be, as it is quite as beautiful, though quite different from the commoner Mountain Laurel of the United States (Kalmia latifolia) (see cut). K. glauca is of a somewhat upright growth, which reaches a height of 1 foot or a little more, the oblong-shaped leaves, about 1 inch in length, being bright green on the upper surface, but glaucous beneath.

This Kalmia is not vigorous enough to hold its own in a mixed border of shrubs or in similar positions, but succeeds best in a peaty compost, or where the soil consists principally of vegetable matter, and which is not, even during summer, very dry. Such conditions also suit Ledums, many Heaths, Cassiope, some of the Andromedas, and others. Like all the members of the genus, this Kalmia is a native of North America, and was introduced about the middle of the last century. The next to flower is K. angustifolia, a little upright shrub, reaching a height of 1 yard or so. Each leaf of this is about 1½ inches in length and ¾ inches broad, usually light green above and pale beneath; but in this respect there is a certain amount of variety to be found amongst them. The flowers are not more than half the size and much deeper in colour than those of the Mountain Laurel, while there are also some very deep-tinted forms, the richest being known as rubra and superba. Besides these there is also a very dwarf variety (nana), which is valuable as a small rockwork shrub, or for associating with Heaths or similar subjects. The third to mention is the Mountain Laurel (K. latifolia), an evergreen shrub, which, from its size and cultural requirements, is fitted to associate with the Rhododendrons and similar subjects. This species, which in some of the shady ravines of North America is said to reach a height of 15 feet to 20 feet, is here more often 6 feet or 8 feet high and remarkably handsome when in flower. It does not bloom till most of the Rhododendrons and Azaleas are past their best. Of this there is a dwarf variety (myrtifolia), which is of more compact habit and smaller in all its parts than the type, while some dozen years ago a very beautiful variety was shown which differed from the type in the flowers being of a much richer and brighter colour. This form was named K. latifolia major splendens.

With regard to the cultivation of the Mountain Laurel little need be said, as it succeeds under the same conditions as the different Rhododendrons, and, like them, does well in soil of a peaty nature, provided it does not get too dry. As with Rhododendrons, however, this Kalmia often flourishes in a stiff loamy soil. Where the soil is of too stiff and adhesive a nature much can be done by mixing with it a quantity of leaf-mould. In chalky soils it is useless to expect success in the cultivation of the different Kalmias. K. latifolia is often used for flowering under glass, and there is no reason why the smaller-growing kinds should not be used for the same purpose. Like their allies, the dense fibrous character of their roots is a great advantage when they are needed for forcing, as they can be lifted and potted without injury. They must not, however, be forced too hard, otherwise the display will be but small. The little K. glauca is more at home where the soil is moister than that required by its relatives; indeed, we are told by Emerson it is almost an aquatic plant, found at times growing in a swamp. In a general way these Kalmias may be increased by seeds, which should be sown in moist peaty soil. As they are very minute, a good plan is to sow them in pots or pans and shelter them in a frame during their earlier stages, otherwise they are apt to die off should

American Mountain Laurel (Kalmia latifolia). From a photograph by Mr. Metcalfe, Mill House, Halifax.

the weather be exceptionally wet or very hot and dry. There are two other species of Kalmia, which are, however, rarely met with in this country—viz., K. cuneata and K hirsuta, the last being very distinct from any of the others, as the whole plant is hairy. It is a small-growing species, reaching a height of a foot or thereabouts, and clothed with oblong-lanceolate leaves; it bears its delicate pink blossoms in the same way as the other members of the genus. K. hirsuta is a native of the sandy Pine barren swamps of Eastern Virginia, and, like some other plants from that region, it is difficult to keep long in health in this country.

T.

OUTDOOR PLANTS.

HARDY EDGING PLANTS.

Those who are in the habit of visiting gardens in different parts of the country cannot help noticing the various kinds of edgings that are used for beds, borders, and walks. Some appear to be in favour of ornamental tiles, which at the best are ugly, hard, and apt to split in winter; others prefer Grass verges, which entail considerable labour; and a few give preference to edgings of hardy plants. The latter, needless to say, are the most effective when used with discretion and judiciously managed, but, unfortunately, gardens with edgings of this kind are rather the exception than the rule.

There are numerous plants adapted for the edgings of walks, beds, and borders. Walks, of course, which traverse lawns have turf edges, and therefore nothing need be done in this case, but with regard to the edgings of kitchen garden walks I think a revolution is necessary. Box, perhaps, is the most extensively used for this purpose, and no particular fault can be found with it other than that it is devoid of effect, and requires no little trouble to keep in good order. Tiles, bricks, or stones in various styles give little bother when once laid, but, as has been said, they, too, are ineffective, and, like all such work, masonry included, should be rigidly excluded from the garden. In selecting plants for edgings, it should be borne in mind that some regard must be paid to the general surroundings and position of the walks or garden. In some parts of the country hardy Heaths make a very pretty edging, while in others I have seen them prove an utter failure. The same may be said in regard to numerous other commonly used subjects. The Ivy may be considered a fairly good edging plant, and when judiciously used produces a good effect. It should be planted and trained in rows from a foot to 15 inches in width, or less if preferable. If given a good start it will quickly form a compact edging, and requires no further attention beyond clipping once or twice during the summer. Although not generally used as such, Mahonia Aquifolia makes a capital edging. The same may be said of Euonymus radicans variegatus, Golden Thyme, and one or two of the Retinosporas. Several other subjects of a similar shrubby nature may also be used.

It is among plants of a less shrubby character, however, that the best and most pleasing edging subjects are to be found. Take the common, though pretty, Thrift (Armeria vulgaris rosea), for example. In cottage and old-fashioned gardens this forms a charming edging, being bright with pink flowers in summer, and refreshing with its tufts of Grass-like foliage during the winter.

Another plant that makes a pretty edging is the blue Gentian (G. acaulis). A year or two ago, whilst visiting a large establishment near Belvoir Castle, I noticed that the whole of the kitchen garden walks were edged with this charming Gentian, which appeared to thrive admirably. The soil was naturally of a light loamy character, and with one or two exceptions a bare patch of vacancy in the whole of the many hundreds of yards of edging was not discernible. Besides making vigorous growth the plants bloomed profusely during the early summer months, and their deep azure-blue flowers were very striking. In addition to this kind, G. verna and G. gelida are also well adapted for edgings. Among the numerous mossy Saxifrages and Sedums a charming variety of edging plants may be found, but it is very rare that they are utilised to the best advantage. A small garden of my acquaintance has its walks edged with S. Camposi, and the effect is everything that could be desired. In early summer the edgings made thus are of snowy whiteness, whilst even in the depth of winter they are green and effective.

Other kinds, from the well-known S. hypnoides to the equally popular London Pride (S. umbrosa), may also be put to a similar use with advantage, and the same may be said of the Sedums in variety. In establishing edgings of these plants, however, particularly in walks, it is advisable to construct a single or double row of stones, pieces of rocks or burrs, and plant the Saxifrages and Sedums in the crevices. If put in fairly good soil and judiciously watered for a time, when necessary, the plants will quickly cover the stones and thus form a most delightful edging. The white-flowered Rock Cress (Arabis albida), which produces such a mass of bloom in early spring, also makes a delightful edging when utilised in the same manner as advised for the Saxifrages and Sedums, and the same may be said in regard to the variegated forms (A. a. variegata) and the Aubrietias. Then, again, the Primroses in variety are subjects of no mean merit for this purpose, as many a cottage garden can prove, and the same with the Hepaticas, Daisies, dwarf-growing Campanulas, Periwinkles, Veronicas, Oxalis of sorts, Funkias, Festuca glauca, and others. Where edgings are formed with rock margins and planted with Saxifrages, Sedums, and similar subjects, as described above, a few Crocuses, Squills, Snowdrops, Winter Aconites, and other dwarf-growing bulbous plants may be introduced, for if judiciously employed they would produce a brightness not otherwise obtained in winter and early spring.

A variety of permanent edgings should, moreover, be seen in every well planted garden, and for this reason gardeners will do well to give the subject more attention than they have apparently hitherto done.

Our illustration shows an edging of the Snow-in-Summer (Cerastium tomentosum), which is very pretty. It is very hardy, bears clipping well, and its wealth of white flowers appears in early summer. The growth is of that silvery-grey colour so bright and pleasing.

L.

Border with Standard Roses and hardy plants edged with Snow-in-Summer (Cerastium tomentosum). From a photograph by Mrs. Barton, The Grove, Wishaw.

Planting border (*F. I. P.*).—1, Ivy would do well for the back-wall, but is slow-growing. Ampelopsis Veitchi grows quickly and would soon cover the space, but this climber has the disadvantage of becoming bare in the winter. The blue Passion-flower is a quick grower when once fairly started, and is only devoid of leaves for about two weeks or a month in the spring. 2, Weigelas would do against the north paling, as would the double Deutzia (D. crenata fl.-pl.). This blooms well in partly shaded positions. 3, Hollies make an excellent background. Their only drawback is their slow growth. Berberis Darwini is a faster grower, and is very ornamental. They grow quite 20 feet in height. 4, Out of the many beautiful flowering shrubs it is rather difficult to make a selection if no climatic difficulties stand in the way. However, on the north-west coast of Cheshire, choice should preferably be limited with hardier varieties, such as Lilacs, purple and white, Syringa (Philadelphus), Weigela, Deutzia crenata fl.-pl., Kerria japonica, Ribes, Guelder Rose (Viburnum), Thorns, Choisya, probably hardy so near the sea, which remark should apply also to Olearia Haasti. The Venetian Sumach (Rhus Cotinus), sometimes styled the Smoke-bush, should be tried in a sheltered position, and where the soil is deepest Spiræa ariæfolia and S. Lindleyana should be planted. Although these grow faster in moist soil, they form handsome bushes even where it is comparatively dry. The flowering shrubs should not be planted close together, but should be allowed sufficient room to expand and show their true shapes and values. It is only when treated in this manner that such a plantation really attains excellence.

Apple-trees in pots.

Nectarine in bush form.

FRUIT.

GROWING FRUIT-TREES IN POTS.

MANY amateurs only have a little glass, and to make the best of it by growing fruit-trees in pots they may add greatly to their supplies of fruit, and also give interest to the garden. At the same time ample attention is required, as the trees suffer more quickly than those planted out. As shown by the illustrations, few fruits are unsatisfactory under pot culture, but some kinds are more amenable than others. The vigorous growers need moisture and root-space. In a note on fruit-trees in pots, it may not be out of place to give a select list of those kinds which succeed, and a few words as to culture. In this note Apples and Pears are included, and though many may object to pot culture for these, it must be remembered that the trees in pots do not occupy the house half the year, and many can grow them thus who could not otherwise do so at all. Some leading amateur growers have made pot-trees their special study and obtained great success by growing them in suitable houses, with only a small quantity of heat On the other hand, many amateurs who have studied this mode of culture advise cool-houses or glass protection only. Much depends, however, upon the trees and when fruits are needed. To get a collection of trees in a fruiting condition takes some little time. Doubtless the best way is to purchase prepared trees, as it would be useless to pot up and place such trees in heat until the pots were filled with fibrous roots and in condition to bear the strain of forcing. On the other hand, the amateur may purchase young trees at a small cost one season and pot up, give a season's growth, and another year obtain fruit. My readers may ask what preparation is necessary, and by this I mean the forming or shaping of the trees and getting ample roots to produce fruit. The roots of all fruit-trees in a curbed position must be fibrous, as large, coarse, or woody roots produce gross wood, which is often barren.

Fig Osborn's Prolific.

APPLES.

These are less grown than others, but delicious fruit may be obtained by pot culture, as all know who have tasted a Cox's Orange Pippin grown under glass. Trees in pots from 12 inches to 16 inches should be models of health if well attended to, and in the case of the Apple or Pear they are only under glass for a limited period, as the trees colour their fruits in the open much better than under cover. By colouring I mean when fully grown they are placed in the open and protected from birds, as the latter are terrible pests with pot trees, and attack the fruits close to the stalk. Trees may be placed under glass after the fruits are set, and when grown cool they produce fine specimens. Many of the American varieties do well grown thus, and I have seen large cooking kinds given glass culture for shows, but do not advise it by any means. Such kinds as Cox's Orange, Early Peach, Cardinal, Akero, a Swedish Apple of great beauty, Mother Apple, Washington, Atalanta, King of Tompkins County, Bijou, Buckingham, and Bismarck, all do well grown in pots.

PEARS

are also well worth pot culture, but as much the same remarks apply to these as for Apples, my note mostly concerns varieties. The Pears can be grown well, but there must be good culture, no coddling, or excess of heat; indeed, I prefer a cool-house, or one just frost-proof, for this fruit. Doyenné du Comice is one of the best varieties for pot culture, and probably the finest Pear under cultivation; but to get early fruits grow such kinds as Souvenir du Congrès, Clapp's Favourite, Fondante d'Automne, Marie Louise, Beurré d'Anjou, Duchesse de Bordeaux, Le Lectier, Doyenné d'Alencon, and others too numerous to name.

PEACHES AND NECTARINES

come under one heading, as they require much the same treatment, and both were noticed in these pages recently. The trees must be grown for a longer period under glass than Apples and Pears, and with this protection they should flower and set and finish their fruits, so that they cannot be

Pear-tree in pot.

grown in the same house with fruits needing different treatment. For instance, trees placed under glass in February would be in bloom long before other fruits, and would need more warmth and atmospheric moisture. The Peach and Nectarine may be seen to the best advantage and give less trouble, with a more regular crop, grown in pots than some hardier fruits. If desired they may be left out-of-doors as long as possible, and will then give fruits later. To get the best results the trees must be given ample attention, as if in the least neglected in the way of moisture, either at root or tops, the crop is lost. It is useless for amateurs to attempt pot culture and expect good results if the trees do not receive attention. The best varieties of the Peach in their season are as follows—of early varieties choose: Waterloo, Amsden June, Hale's Early, and to follow these Early Grosse Mignonne, Royal George; whilst for mid-season Bellegarde, Dymond, and Noblesse are suitable. Barrington, Sea Eagle, and Nectarine Peach for late supplies. Nectarines: Early Rivers', Lord Napier, Pine Apple, Elruge (late), Victoria, and Spenser provide a succession in order named.

Plums.

These succeed well in pots, and there is no comparison as regards the flavour of Plums grown thus to outdoor fruits. I prefer a cool-house and little forcing. Avoid large pots; indeed, in the early stage treat much like the Peach, and grow at the cool part of the house. Given pot culture the Plums bear splendidly, and the following are a few of the best varieties, named in order of ripening: The Czar, Oullin's Golden Gage, Denniston's Superb, Kirke's, Jefferson, and Reine Claude de Bavay. Late: Golden Transparent Gage and Coe's Golden Drop.

Figs.

Probably the Fig is less grown by the amateur than any other fruit, but why I know not, as it gives two crops, and may be grown to perfection. It is, indeed, by pot culture that one gets the best results, especially with such varieties as Negro Largo, which, planted out, develops too much growth. The Fig may be forced hard, but I am unable in the present article to go at length into cultural details. I would advise growing in small pots at the start, as the trees so soon get too large for the houses. Ten-inch to 16-inch pots will produce good crops, and the chief points of culture consist in stopping all shoots hard at the fourth joint, thinning out weak ones, and feeding during growth. Such kinds as St. John's, Pingo de Niel, Brown Turkey, Negro Largo, Nubian, and Bourjasotte Grise are excellent varieties. The two first-named are the best early kinds, and for forcing, but the later are of the best quality. Figs may be fruited at any season. For instance, if the plants are plunged in the open until April, then placed under glass, they will fruit well; or they may be fruited in April if forced slowly in December. They will then give two crops in one year, if well fed. For the latter purpose none are better than Brown Turkey.

Cherries

are splendid grown under glass, but I must remark that I am not fond of pot-culture, for these trees planted out in narrow borders give a splendid return. It is well to force slowly as advised for Plums, to sink the pots, and never allow plants to suffer for want of water. There are splendid varieties for this purpose, especially the following: Biggareau Jaboulay, Frogmore Bigarreau, Governor Wood, and Early Rivers for early fruits, and Bigarreau de Mezel, Emperor Francis, Napoleon Bigarreau, and Royal Duke for mid-season, and for later fruits Late Duke, Black Tartarian, St. Margaret, and Florence, or Geant d'Hedelfinger, a very late black variety.

Vines

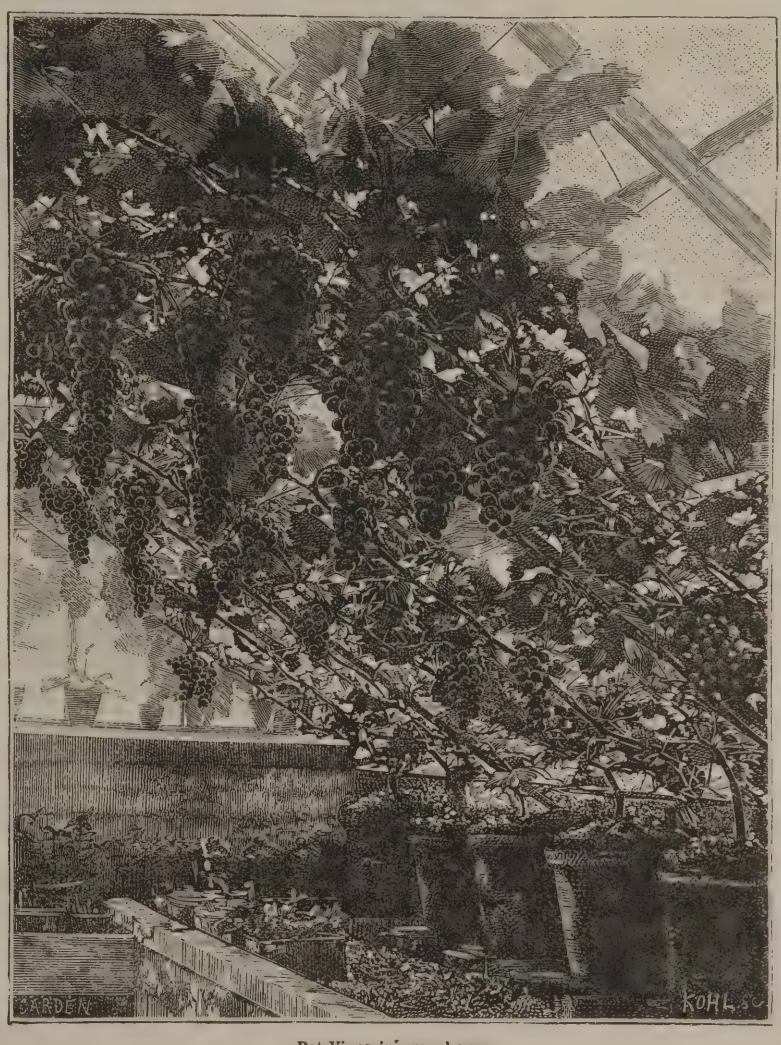
have been grown so many years in pots that there is little new to add as regards culture. The varieties are few, the best pot-Vines, forced or otherwise, being the useful Black Hamburgh and the White Foster's Seedling, both early kinds and the best setters, a point often lost sight of in fruit culture. I am aware that any variety of Vine will do with pot culture, but with poor results in some cases, compared to the varieties named. As is well known, to get fruiting Vines it is necessary to grow them in one season. I mean, in order to fruit them next year the canes must be thoroughly ripened, and if forced for early fruit it is well to have bottom-heat. Pot culture of Vines is quite distinct from that of the other fruits named, as the plants must be under glass from start to finish, and if forced hard take care to get good bunches and thin early. Give ample food after thinning, but to treat on the Vine in pots will need more room than can be allowed with other fruits. Let me add that it is well worth the amateur's trouble if ample attention to get good results can be given. The Vine grown thus fruits so freely that it would pay amateurs to grow it in this way, and, by so doing, have their house for half-a-year for other purposes. W.

GARDEN PESTS.

Insects on root crops (*Kildare*).—The small white insects which you find in your garden, and which you think are the cause of much injury to your various root crops, are specimens of one of the Poduridæ or Springtails (Lipura ambulans). This species, however, does not spring or jump in any way. I do not feel quite certain that these creatures are the cause of the injury to the roots, but they may be. I should have thought that a good dressing of fresh lime or soot well mixed with the soil would have killed them. As it has no effect, you had better try gas-lime or nitrate of soda.—G. S. S.

Pests in gardens (*P.*).—The creatures you sent are specimens of one of the centipedes (Geophilus longicornis). They are generally supposed to be carnivorous, and not to feed upon plants. Their mouths are furnished with poison fangs, which would be unnecessary if they were vegetarians. At the same time, I have had them sent me so often as having been found injuring plants that I hardly like to say that they do not, though it is quite possible that their presence among the roots of a plant may be due to their having been feeding on some insects that were really the cause of the injuries. So they are benefactors rather than pests. I should investigate the matter as carefully as possible, and see if they are the culprits or not. On account of the hardness of their skins insecticides do not have much effect on them. Watering with a strong solution of salt or nitrate of soda is as good as anything.—G. S. S.

Pests in rock garden (*Annie Handals*).—The pests in your rock garden are the grubs of the Black Vine Weevil (Otiorhynchus sulcatus), or of a very nearly allied species. From their position at the roots of the plants it is impossible to kill them with any insecticide without injuring the plants, so that the only way is to turn them up out of the ground and pick them out. In many cases you would probably have to take up the plant and search for them among the roots. The parent beetles are not quite ½ inch long, and are nearly black. They only feed at night, hiding themselves very carefully during the day. Search for them with a lantern in April or May.—G. S. S.



Pot-Vines in greenhouse.

Grubs (*Amos Leather*).—The grubs you sent are those of the cockchafer (Melolontha vulgaris). They are exceedingly injurious to the roots of most plants and trees. Insecticides seem to have little or no effect on them, and the only thing to be done is to turn up the ground and pick them out. When cockchafers are very abundant they should be shaken or beaten off the trees at midday, when they are sluggish, and picked up or trampled upon.—G. S. S.

Grubs in garden (*E. C. D.*).—The grubs you find in your garden, and of which you have sent specimens, are the grubs of the common

cockchafer, and are most injurious insects. They feed on the roots of Grass and many other plants and trees. It is practically impossible to kill them with any insecticide, and the only thing to do is to turn up the ground where they are and pick them out.—G. S. S.

TREES AND SHRUBS.

CLOSE PRUNING OF SHRUBS.

Some shrubs need very close pruning in order to increase and improve their flowering, while others are severely pruned to keep them within limits for certain purposes. For instance, under ordinary conditions Paulownia imperialis grows to a height of about 30 feet or so, and is well adapted for the park, but it is also amenable for cultivating in less restricted areas, and makes a valuable addition to the list of trees and shrubs suitable for planting in the vicinity of the flower garden. Plants look well grown as single specimens on the lawn, or eight or ten may be grown in a large circular bed, and if the whole of the young wood is cut away each autumn vigorous shoots will be thrown up in the spring, the strongest of which should be selected as a leader and the others removed. Treated in such a manner it is not only distinct, but one of the most beautiful of broad-leaved hardy trees. Rhus typhina (Stag's Horn Sumach) is another shrub that bears the knife with impunity; in fact, if plants of a dwarf compact habit are desired close pruning must be resorted to. Under such treatment this plant might with advantage be introduced more freely into the ordinary shrubbery border. With regard to Hydrangea paniculata grandiflora, it is absolutely necessary that the whole of the young wood should be cut back to a single eye or so, and at the same time all the weak and unripened shoots must be cleared away. Leycesteria formosa also takes the knife well. If cut into the old wood in spring it will break away freely. The Elder may be treated in the same way. The golden-leaved sort should always be cut in hard. Several varieties of Willows make very fine bushes if all the previous year's wood is cut away in spring. The Bladder Sennas (Coluteas) are improved by hard pruning.

The Paulownia showing result of annual cutting down.

Treatment of Bamboos *(F. H. H.)*.—Bamboos succeed best in rich loam. When in growth a copious water supply is beneficial—in fact, the clumps may be irrigated with advantage, but a wet situation is often injurious and sometimes fatal in frosty winters. In planting Bamboos shelter is the chief object to be aimed at, cold winds from east or north being very harmful to the plants, much more so indeed than frosts. The plants had better be potted and kept in a cool greenhouse till May, when they can be planted in prepared positions. A good mulch of manure over the roots would prove beneficial, as it renders the ground moist during the summer by preventing evaporation, and acts as a protection from severe frosts in the winter. If the soil in question is very heavy and waterlogged in the winter, it might be advisable to drain it, but not otherwise. There is such confusion in the nomenclature of Bamboos, many of them being labelled with various synonyms, that it is often difficult to procure plants true to name.

Berberis Darwini. — This evergreen Barberry is one of the most beautiful of spring-blooming shrubs. It is very hardy, of good constitution, and well adapted for growing in small gardens, as it is of good habit and rarely ever exceeds 2 feet 6 inches in height. Its cultural requirements are simple, no special soil or position being necessary to ensure its annual display of rich orange-yellow flowers, which are borne very liberally on erect racemes. Berberis Wallichiana is another evergreen Barberry of much merit, and quite as hardy as B. Darwini. The rich green leaves are borne in threes along the wiry stems. The small drooping flowers are borne in clusters.

Plants for hedge close to Bee garden *(F. W. Pearson)*.—The following are good: Laurus nobilis, Rhamnus Alaternus and R. Frangula. The Spanish Broom (Spartium junceum) is a first-rate plant for Bees, but a poor hedge-plant. Salix Caprea is much frequented by Bees. Honey produced from the flowers of the Lime-tree is considered very fine. The plant you name is not poisonous to cattle.

Calycanthus not flowering *(Marguerite)*.—This shrub is quite hardy, and does not need the assistance of a conservatory. Your best plan would be to lift it in spring and plant it in a somewhat shady part of the garden, and when properly established it ought to flower freely every year.

Yew-hedge *(Penzance)*.—As your plants have been cut back so severely we should recommend a top-dressing of rich leaf-mould and a free use of the syringe to the plants in spring to encourage new growths. Liberal supplies of water should be given to the roots in dry weather.

Hedge *(Moat)*.—The hedge ought to have been cut down last September. It will be safer now to wait until April, and if the wood is not too hard it will break away freely. Young growths will be encouraged if the soil near the roots is kept open and liberally supplied with water.

Violets out-of-doors.—What is the best Violet for outdoor culture (to bloom in December and January), which is scented and has fairly long stalks? When should a bed be made? I notice that most Violets with long stems are nearly devoid of scent.—E. S.

*** Ordinary Decembers and Januarys are not conducive to the free flowering of Violets in the open. Cold and absence of sun, even if there be no actual frost, prevent the flowers from opening. Perhaps the freest-blooming January Violet is the Red Russian. This is now in almost full bloom, but its colour is not admired by all. Princess of Wales is a beautiful Violet, single, very large, with stalks about 1 foot long, which blooms well in November. California is another very fine Violet, as large and long-stalked as Princess of Wales, and exceptionally fragrant, but this variety is a better spring than late autumn bloomer. Out of sixteen varieties grown here (South Devon) none, except the Red Russian, is producing flowers in any quantity in the open, though a handful may be picked here and there from almost all of the kinds. Still, the season is so open that even this is exceptional during the darkest days of winter. Beds should be made early in the year, the ground being well worked up and enriched. If this can be done during the late autumn so much the better. In April a top-dressing of leaf-mould, wood-ashes, and well-rotted hot-bed or Mushroom-bed manure should be given, and late in that month or early in May the runners should be planted in rows 12 inches apart, the individual plants being not less than 10 inches from each other. If the ground be dry at the time of planting, a copious watering should be given to settle the runners, and when absolutely necessary the watering should be continued during the summer. A mulch of well-rotted manure in June and applications of liquid fertilisers during the summer and autumn will be found beneficial in building up the strength of the plants. It is useless to expect to flower Violets really well unless they are well cultivated and their wants attended to throughout their growing period.—F.

Herbaceous Pæonies.—I wish to have a few single Pæonies with guard petals and yellow anthers, or white guard petals with pink petals in the centre. Will Mrs. Jocelyn be good enough to tell me the names in your paper? I have her article, June 24th. Will she also tell me if those I possess are good kinds? I send a list.—J. M. S.

*** I think "J. M. S." will find Beatrice, Darius, Water Lily, Cleopatra, Duchess of Portland, Gertrude, and Princess of Wales (single Chinese Pæonies which flower in June) are what you want. They are of the colours desired. Of those you have, I can only speak from personal experience of the varieties Marie Mouillon, Jeanne d'Arc, Marie Lemoine, Eugenie Verdier, Paglioni, Mme. Louise Mère, and Whitleyi, which are double Pæonies, and some of quite the best. Officinalis anemonæflora is a May-flowering single Pæony, and violacea, I think, is a Tree-Pæony. Anyway, I know of a good Tree-Pæony of that name, but not herbaceous.—Mrs. Jocelyn.

Planting beds *(Brockweir)*.—The following are effective Narcissi for massing in beds. Trumpet section: Maximus, Golden Spur, Queen of Spain, obvallaris, rugilobus, yellow; Empress, grandis, Horsfieldi, yellow trumpet, white perianth. Incomparabilis section: Cynosure, orange cup, primrose perianth; Stella, yellow cup, sulphur-white perianth; and Sir Watkin, yellow cup, sulphur perianth. Star section: Barri conspicuus, orange cup, primrose perianth, and Poeticus ornatus, crimson-edged centre, white perianth. Perhaps the best seven for the purpose would be maximus, Queen of Spain, grandis, Cynosure, Sir Watkin, Barri conspicuus, and Poeticus ornatus. It is difficult to arrange

for different varieties of various sections blooming simultaneously; indeed, varieties often differ in earliness in consecutive years. None of the seven last-named are, however, either very early or very late varieties. Three good Tulips that flower at practically the same time are White Pottebakker, Yellow Pottebakker, and Vermilion Brilliant. Two of these beds might well be filled with the new large-flowered Cannas, but the beds are too small to admit of Castor-oil-plants being mingled with the Cannas to advantage. Each bed had better be filled with one description of flower. Blue Salvias are charming when massed, and the Salpiglossis is also strikingly beautiful. One bed might be allotted to Tuberous Begonias, and the Ivy-leaved Pelargoniums Souvenir de Charles Turner and Mme. Crousse are especially pleasing in their respective shades of colour, while no more brilliant yellow can be found than Coreopsis grandiflora, which remains in bloom for a lengthened period. Narcissus flowers look charming when rising out of a blue carpet of Forget-me-nots (Myosotis dissitiflora); but these arrangements for spring flowers should have been made and carried out some months ago. A good deal depends upon the soil in the damp bed. If this is of a clayey nature or a very heavy, retentive loam, Bamboos would be liable to die in a severe frost, though in good, warm loam they will stand 20 degs. with impunity. Bamboos, as a rule, suffer more from cold winds than frost, for which reason shelter is all important. Good varieties are viridi-glaucescens, mitis, and aurea. Arundo Donax is a very suitable subject for such a position, and the Spiræas revel in moisture. The Goat's-beard Meadow-sweet (Spiræa Aruncus) should do well, as should S. ariæfolia, S. flagelliformis, and S. Lindleyana of the shrubby section. If the soil is light, Japanese Irises (I. Kæmpferi) may be tried in the bed, and in peat the Wood Lilies (Trilliums) and Moccasin-flower (Cypripedium spectabile) should flourish. In the latter soil the Swamp Lilies, L. pardalinum, L. canadense, and L. superbum should do well, and Bocconia cordata would make a fine background plant, its glaucous leaves acting as an excellent foil for other vegetation. The tall Iris orientalis, also known as ochroleuca, Iris aurea, I. Monnieri might also succeed in the drier portions of the bed. They are fond of moisture, but not of excessive damp, and when flourishing attain a height of 6 feet. The Horse Chestnut makes a fine shade-tree, especially beautiful in the spring-time. The pink-flowered variety is also handsome. Both are rapid growers, and among the first of the trees to put forth their vernal greenery. The Plane-tree and Tulip-tree are also good shade-trees, but would probably not prove so satisfactory to "Brockweir" as the Horse Chestnut.

ORCHIDS.

Ventilation of Orchid-house (*I. W.*).—A dry temperature of 55 degs. is too low for your intermediate-house; it would be better at 60 degs. Therefore, on dull chilly days, with an east wind blowing, all of the ventilators should be kept closed, as there would be sufficient air passing through the laps in the glass for ventilation. When the temperature ascends above 60 degs., those ventilators which are in an opposite direction to the wind should be slightly opened.—W. B.

Masdevallia chimæra, Odontoglossum grande, etc. (*W. H. Harrap*).—Masdevallia chimæra sends out flowers at various periods of the year, but it may be seen at its best about the end of July or the beginning of August. The plant should be grown in the cool or Odontoglossum-house during the summer months, but on the approach of winter it should be removed to the coolest part of the intermediate-house. As this plant passes its flowers in a downward direction like a Stanhopea, it should never be grown in pots. Put them in shallow Teak-wood baskets, with the rods placed wide apart, use no crocks, and give them peat and Sphagnum Moss in about equal parts to root in. Masdevallia chimæra requires abundance of water the whole year round, as dryness at the root or in the atmosphere will cause them to deteriorate. During the heat of summer it is good practice to take the plant down every day, and well syringe the undersides of the leaves. This will keep them clean and prevent red-spider from attacking them. Odontoglossum grande usually flowers during the autumn months. At the present time the plant will be passing through its resting period, and should be kept moderately dry at the root, but not so dry as to cause the pseudo-bulbs to shrivel. When the plant commences to grow it may then be repotted if necessary, potting it rather firmly in well-drained pots, using peat and Moss for it to root into. Whilst in active growth, and during the time the plant is in bloom, it requires a plentiful supply of water. O. grande requires a cool, moist corner of the intermediate-house. Established plants of Disa grandiflora commence to grow about October, from which time until the end of their flowering season, which is from May to July, they should have copious supplies of water, and during warm weather frequent light syringings overhead are very beneficial to them, as in their native habitat they are subject to dense mists. After flowering the plants require a short rest, keeping the soil neither too wet or too dry. When growth recommences the plant may be repotted. The pots should be half filled with drainage, the soil consisting of equal parts of dark boggy peat and Sphagnum Moss, with a moderate quantity of coarse silver-sand. Grow this Disa in the coolest part of the Odontoglossum-house, and shade from strong sunshine.—W. B.

Dendrobium pulchellum (*C. H. Denbies*).—This is one of the best plants for growing either in baskets or on a block of wood. Being suspended to the roof, the semi-transparent flowers are seen to the best advantage. This species is liable to be urged into second growth if kept too long moist and warm after its season's growth is complete, yet the latter condition must be fully reached before watering ceases, otherwise it will most certainly flower sparingly or not at all. The plant should be grown in the stove, affording plenty of root-moisture until the new growths are made up. When fully matured water should be entirely withheld and the plant placed in a temperature of from 45 degs. to 50 degs. at night, with all the light possible during the daytime, and a moderate amount of fresh air. Under such conditions the pseudo-bulbs will assume a yellowish-green colour, so plump in appearance that the skin seems almost ready to burst, and the future flowering eyes quite perceptible. As soon as the flower-buds begin to push out, the plant should be removed to an intermediate temperature, affording but little water until new growth commences, when the plant should be returned to its former growing quarters in the stove. When grown under the most favourable conditions D. pulchellum is a pretty object, producing hundreds of its lovely flowers, and well deserves culture where Dendrobes are grown.—W. B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2679—**Rodents in possession.**—A garden near an oyster-fishery is destroyed by a plague of rats. Everything green is eaten, and they now tackle the stalks. Brussels Sprouts and Broccoli have disappeared. Poison to 10s. worth was eaten, with no better result. Dogs kill them, but still they reign supreme. They have taken to burrowing and eating the Parsnips. Can you suggest an evictor?—F. C. G.

2680—**Old double Primroses.**—I should like to be able to get the old double Primroses, same as I used to admire years gone by in old-fashioned gardens. I have consulted a great number of seed catalogues, but have failed to find in any the seed of double Primrose, same as the seed of double Begonia. Would it be that these double Primroses are only chance plants out of ordinary seed? I shall be very thankful if you will put me in the right way of obtaining what I have always so fondly loved.—PRIMROSE

2681—**Summer at mid-winter.**—I noticed some very practical remarks by a "Lady Amateur, Berks," in GARDENING, 15th inst. (of which I am a constant reader). The note is headed "Summer in Mid-winter" I have an unheated greenhouse, 16 feet by 9 feet, which has been comparatively useless to me during the winter, as far as having flowers is concerned, and as "Lady Amateur" has kindly volunteered to give cultural directions for plants suitable for winter blooming, I shall feel very grateful if she will kindly do so. I am much interested in "A Lady Amateur's" account of her gay greenhouse, and would like to hear further if it is not a heated house? I have a lean-to greenhouse of the same size, slightly heated by a Rippingille stove, but I am unable to have a show of bloom at this season. My potted bulbs are very shy in blooming, Tulips in addition becoming infested with green-fly, while Chinese Primulas damp off. I am more successful with Azaleas and Roses, which will come in later on, and my Chrysanthemums are just over.—M. E. L.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2682—**Royal Fern** (*River View*).—Any good nursery would contain this. Look through our advertisement pages. We do not recommend individual traders. Plant in spring.

2683—**Exhibiting Cucumbers** (*H. H.*)—If the schedule distinctly states that only one brace of Cucumbers is required, then anyone exhibiting more than that number will be disqualified, and properly so.

2684—**Is Asparagus a Fern?** (*Stove*).—By no means. The Asparagus Fern is so called because, we presume, it resembles a "Fern"-frond in its feathery growth, which is useful for decoration in the same way as the Fern.

2685—**Filberts** (*H. C.*).—Yours is the true old red Filbert, and one of the very best; the Nuts should be long, and flattish, as yours are. Cob Nuts are shorter and rounder, quite stout, and lacking the true Filbert flavour, although still very good.

2686—**Soot dressings** (*R. S.*).—Soot does not burn plants, and may be applied at any time. If you want to destroy slugs dress your soot on late in the evening. If only as a manure dressing, then at any time, and hoe or dig it in as soon as you can, but in digging have it well mixed with the soil.

2687—**Carnation and Dahlia show stands** (*A. J. W.*).—Any horticultural sundriesman should supply you with these. However, you can get Carnation stands of regulation sizes and proper style from Mr. Robert Sydenham, Tenby-street, Birmingham, and Dahlia stands from any Dahlia specialist.

2688—**"Geraniums"** (*E S.*).—Almost the only substitute, as regards colour and freedom of flowering for the "Geranium" is the Tuberous Begonia, if "E S" must have scarlet; but the Ivy-leaved Pelargoniums Madame Crousse, salmon, and Souvenir de Charles Turner, beautiful cherry-carmine, are both very lovely, and are excellently adapted for window-boxes as well as for beds. In fact there is no position in which they are not ornamental.

2689—**Saxifraga pyramidalis** (*Somerset*).—It is extremely unlikely that "Somerset's" offshoots of Saxifraga pyramidalis will form sufficiently large plants to flower during the present year. By the end of 1898 they should have formed large tufts, which ought to flower well in 1899. If flower is needed this year, "Somerset" had better, as he suggests, procure some fresh plants. Then by treating them as biennials he will have some specimens in flower each year.

2690—**Tomatoes for greenhouse** (*W. B. B.*).—Almost any smooth Tomato will do for greenhouse culture, but if you can get a good stock of Perfection, Conference, Duke of York, or Polegate, you will find it to be excellent for indoor use. You may sow seed at once if you have warmth to assist it; otherwise, growth is very slow indeed. The getting of good trusses or clusters on the plants is very much a matter of treatment and culture. A good Tomato outdoors is Magnum Bonum, but it is sutured. Ham Green Favourite, smooth, also does well. Sow seed middle of February. Good turfy loam, with just a little old decayed manure and a small quantity of bone-meal, makes a capital compost. For top-dressings give soot and a little sulphate of ammonia when the fruits are well set.

2691—**Various** (*Hilda*). — You may safely lift Anemones now, as, planted in October, the tubers should have made good roots. Lift with some soil attached. If you mean should the wood-work of a small greenhouse be painted, we say yes, decidedly; but if you mean the glass, then no, certainly not. It will be time enough to give a little thin shading when hot weather comes. Then a little mixture of whitening and milk, brushed thinly over the glass, does admirably to exclude strong sunshine.

2692—**Birds and fruit-trees** (*E. W. C.*).—We quite agree with you that the assertion that birds eat Pear and Plum-buds to destroy insects is no consolation, besides which, it is not true. If it were, they would eat mite-infested Black Currant-buds, which they do not do. They eat the hard-swelled buds of Pears, Plums, Red Currants, and Gooseberries for the sake of the sweet, enclosed leaf and flower-buds. As your standard Pear and Plum-trees suffer so, if not too late, we advise you to have a good quantity, say, several gallons, of a mixture of 1 lb. of Quassia-chips, boiled or scalded with with 3 gallons of water, adding 2 lbs. of soft-soap, well dissolved; then add 4 gallons or 5 gallons more, with a free dusting of lime or soot. That should be done twice or thrice till the buds burst.—D.

2693—**Top-dressing Vine-border** (*T. G. W.*).—Your proposed top-dressing for a Vine-border is very good, but we should prefer wood-ashes and bone-dust or meal with the soil, rather than horse-droppings. Some road-grit or sand may well be added, or old mortar refuse, which is good also. When you have forked off 3 inches or 4 inches of the present old soil, and have replaced it with the fresh soil and ingredients mentioned, you may, as growth begins on the Vine, add a top-dressing some 2 inches or 3 inches thick, but not more, of short horse-manure, as that will at once help to retain moisture, and will wash in to form root food.

2694—**Gaillardias** (*Plairfield*).—Gaillardia grandiflora is the best of the perennial Gaillardias. It is a vigorous plant, and its large, brilliantly-coloured flowers are very handsome. It does well in ordinary garden soil, but sometimes perishes in heavy loam or clay that hold excessive moisture during the winter. The plant has a lengthened flowering season, and last year blossomed until the end of October. It can be raised from seed sown in gentle heat in February, or by division of the plants in spring.—F.

2695—**Seakale pots** (*Oxford*).—Ordinary Seakale pots are of the size you mention, but have large holes at the top to cover up when blanching is proceeding, with movable lids, through which access can be had to the Seakale. You may use ordinary flower-pots, but they should be very large ones, and then will have to lift them right off to cut the Seakale. You want breadth for your clump of Kale, as well as height—say, 10 inches broad and as high. When Seakale-tops, blanched, are cut, the cutting should be level with the ground. The roots will then form new crowns, which should be thinned to one or two to each root. If the old crowns are left, the new growths usually bolt to flower; that is undesirable. Newly-planted Rhubarb-roots should not be pulled from the first year. Leave the crowns, which you call eyes, on your Rhubarb-roots, but one good stout one is better than three weak ones. Your Seakale and Rhubarb are a little mixed, and we have endeavoured to separate them. If you mean Seakale as to height to cut, then 8 inches will do very well.

2696—**Orchard-trees** (*East Sussex*).—No doubt a pergola or rustic woodwork down the centre of your existing Grass orchard would have, if properly planted with climbers, a very pretty effect. We should, however, prefer to have the way beneath all turf, with flower borders on each side, as the vista then would be so charming. Were the erection eventually well covered with climbers, no matter how free growing, the view of the stiff lines of trees in the orchard behind would be less noticeable. But even these stiff lines may be greatly broken if you plant strong climbing Roses, Clematises, Virginian Creepers, Jasmines, Honeysuckles—indeed, anything free growing, even the Parsley-leaved Bramble—here and there, between the trees, training them up to poles, and later in festoons, running the long growth away to catch and intermingle with the trees, and in time draping them most charmingly.

2697—**Vines bleeding** (*J. W.*)—Vines bleed only when the pruning, which should invariably be done soon after the leaves have fallen, is left late, as the pores through which the sap seems to pass are not closed, and thus the sap escapes. When the pruning is done early, then the wounds callus over. Get your pruning done at once, if not done. Then get the ordinary knotting mixture which painters use over knotted deal before painting, or soft, heated sealing wax, or even cut Potatoes, forced on to the cut ends of the laterals, but knotting is best. All dressings, however, usually fail if the pruning be left too late, and sap ascends with considerable force.

2698—**A north border** (*P. B. S.*).—It would have been better if you had planted Morello Cherries against the wall and had kept the Black Currants to grow as bushes on the border. You should be able to get some good late Strawberries if planted between them. Auriculas, Polyanthuses, Pansies, and similar hardy spring flowers should do admirably towards the front. There is no reason why a few bush Apple or Plum-trees, and a few pyramidal early Pears should not do also down the middle of the border, if it be wide enough and the wall is not too high, but nothing is said on those points. Herbs usually do well also on such an aspect. Clumps of Daffodils will also do very well there.

2699—**Cankered Apple wood** (*H. J. C.*).—The portion of Apple wood sent does represent canker, but not nearly in so bad a form as is sometimes seen. Your cankered wood was healing over admirably, and would soon have been completely so. Still, if you have other similar wounds on your trees, scrape away any decayed or diseased bark, and, making up a mixture of soft-soap, clay, and paraffin, dab it in the wounds with an old paint-brush. The primary cause is the roots getting into poor sub-soil. Top-feeding with manure and occasional soaking of liquid-manure furnish, as a rule, the best cure.

2700—**Lean-to house** (*Cucumber Grower*).—To keep up a warmth of 70 degs. during late winter—and that is not high for forcing Cucumbers—you should have at least three rows of piping, and four would be better. The flows might run along on the front side of the path or alley, if you have such, and the returns near to the front wall. On these should lie stout pieces of wood, to carry an open trellis shelf, on which the pots or boxes carrying the plants should stand. Or the bearers might rest on other supports, and be a couple of inches higher. Orange-boxes make capital things to grow Cucumber-plants in if clean and fairly stout. Partially fill with rough, turfy material, which makes excellent drainage. The roots like it, and warmth passes through it; but be careful that it contains no wireworms or grubs. With the surface loam mix one-fifth well-decayed manure. Plant 18 inches apart, and the growths, if the plants do well, will soon reach the top of the house. Your boiler seems amply large to heat your 30-feet lean-to.

2701—**Diseased Spinach** (*Mrs. C.*)—The diseased nature of your Spinach-plants is not due to seed. That was doubtless all right. It is due to soil. We have seen similar disease in mild seasons, chiefly in market-fields, where acres have been killed off in the same way. Evidently the soil needs a good dressing of lime. Possibly it is full of vegetable humus or insoluble manure, that but needs a good dressing of lime, at the rate of a bushel per rod, to unlock this humus and make it soluble, whilst also sweetening and purifying the soil. Let Potatoes, Peas, and Beans follow the Spinach now, first giving the lime dressing, and then, if followed by Spinach in August next, no doubt you will find much better results. When the young plants are strong, in October give a good dressing of soot also, and well hoe it in.

2702—**Blanching Seakale** (*Oxford*).—We should certainly prefer drain-pipes, 12 inches high and 6 inches in diameter, to flower-pots for covering up Seakale outdoors, because, by laying movable tops over the pipes, you can get access to the Kale without removing the pots. If you use flower-pots, large or small, you must not only lift them off to see if the Kale be fit to cut, but also each time you wish to cut it. Still, pipes 8 inches in diameter would be better. Cover the tops with pieces of slate.

2703—**Cucumbers and Tomatoes** (*G. L.*)—These may be safely grown in the same house, but the Cucumbers should be in the warmest end, as they need rather more heat. Whilst a temperature of from 50 degs. to 65 degs. does for the Tomatoes, Cucumbers need a warmth of from 65 degs. to 75 degs. We have grown Tomatoes in large pots and Cucumbers on soil beds in the same house for many years. If you have a lean-to house, plant both on a shallow soil bed in front, and train up under the glass. If a span house, plant both sides, keeping the Tomatoes nearest the door.

2704—**Blood-manure** (*M. A.*)—We know of no process chemically whereby animal blood can be converted to powder. Had we to employ it—and at the best it is a gross and offensive form of manure—we should get dry sandy soil, run it through a fine sieve, then mix it with the blood until all is absorbed, and allow it to dry until it is well pulverised. When that is so, then the compound can be strewn over ground and be dug in, or over the surface as a mere top-dressing. Fine coal-ashes may be used, but dry, fine soil is best. A light admixture of bone-meal and Kainit as potash would render the compound all the more valuable as plant food.

2705—**Laying out grounds** (*M. A.*).—Presumably you wish to learn the charge for laying out gardens. Now, it is not possible to give to such a question any satisfactory answer. Everything depends on the size of the area to be worked and planted, and what is needful to be done. Perhaps much levelling or draining may be needed, or turfing, gravelling, and planting with trees and shrubs. The best course is to sketch on paper the form of the area to be laid out, with some idea as to what is required, and then to give it to a landscape gardener, who may be able to give you an estimate. That is all we can say to your question. Get a good man.

2706—**Jargonelle Pear-trees** (*Inquirer*).—This Pear is by no means a generally satisfactory one, although it is a very early ripener; especially does it seldom do well on cold clay soils. Your trees have evidently sent their roots into the clay and do not like it, because it is cold, wet, and sour, or devoid of the needful food. We advise you at once to have the trees carefully lifted, then shortening back all strong surface roots to 3 feet, cutting away all under roots, then replant, but not deep, so as to induce the roots to keep near the surface. The trees, however, should each have two or three stout stakes fixed firmly in the soil, some 12 inches or more from the stems, tying to stout branches, but not too tightly, so that the trees may settle down with the soil. Pruning may be done a fortnight after planting, but in moderation, just relieving the heads partially; also mulch about the roots with long manure. Scrape out the dead bark where canker is, and which is not American-blight, and paint over with a little mixture of soft-soap, clay, and paraffin.

2707—**Book on fruit culture** (*Lancashire*)—The book you refer to doubtless is "The Fruit Grower's Guide," by J. Wright. It is published by J. S. Virtue and Co., City-road, London, both in volumes and in parts. If you, however, want "Profitable Fruit Growing," price per post, 1s. 2d., you can get it from G. Bunyard and Co., Maidstone, who have also an excellent book, price 2s. 9d., "Fruit Farming for Profit."

2708—**Asparagus-beetle** (*Polton*).—This little garden pest is so little complained of generally, that mention of it is rare, and nothing definite seems to be known concerning its treatment, or preventing it from doing harm. Probably you would do well to smother your beds with lime in the spring, but it is not possible to advise the employment of any poisonous material, as that would render the consumption of the Asparagus dangerous. We should like to see examples of the harm done, if, later, you should be infested with the pest. Its proper name is Crioceris Asparagi.

2709—**Fowls'-manure** (*A. H.*).—There is no good reason to assume that fowls'-manure breeds wireworm. These insects can only be created from eggs of the click-beetle, and these are more common in soil seldom disturbed than in fowls' runs, where everything of insect life is rapidly destroyed. But whilst fine coal-ashes make the best of flooring for a fowl-house, the excreta being raked off every other day, it is a good plan to mix the manure with soil or road grit, and have it occasionally turned ere it is used as a dressing. A dressing of fresh soot strewn over it and dug in is good also.

2710—**Trapping moles** (*H. H.*)—Moles are exceedingly difficult rodents to catch, requiring all the skill of a professional trapper to do so. You may try the effect of placing pieces of cloth or flannel steeped in paraffin in their runs to try and drive them away. You may watch the runs at certain times of the day, when the moles are working, and with a fork throw them out. You may get numerous spring iron traps, and put them down in all directions, but still it is difficult to get rid of the pests. Certainly strong or obnoxious smells they abominate.

2711—**Dwarf perennials for narrow border** (*W. J. T.*).—The following perennials might suit "W. J. T.," although his limits of height naturally shut out many very beautiful and showy subjects. The heights given are approximate: Armeria rosea, bright rose, 6 inches; Achillea Ptarmica fl.-pl. The Pearl, white, 1 foot 6 inches to 2 feet, very floriferous; Campanula turbinata, purple, 6 inches; Coreopsis grandiflora, bright gold, 1 foot to 1 foot 6 inches, a very abundant flowerer; Dianthus Napoleon III., bright crimson, 6 inches; Gaillardia grandiflora, crimson and gold, 1 foot to 1 foot 6 inches; Geum coccineum fl.-pl, scarlet, 1 foot to 1 foot 6 inches; Inula glandulosa, orange, 1 foot to 1 foot 6 inches; Linum flavum, yellow, 1 foot; Lychnis Haageana, scarlet to white, 1 foot; Lychnis Viscaria splendens plena, rose, 1 foot; Oxalis rosea, bright rose, 6 inches; Papaver nudicaule (Iceland Poppy), white, yellow, and orange, also its double variety, 1 foot; Plumbago Larpentæ, blue, 1 foot; Ranunculus speciosus, yellow, 1 foot; Tradescantia virginica, purple, 1 foot to 1 foot 6 inches; Tufted Pansies, in varied colours, 6 inches. The Hybrid Alstrœmerias, with their beautiful colour gradations; double white Rockets, very sweet; and Montbretias, orange-scarlet, are well worth a place in the border though rather taller.

2712—**Planting** (*Potatoes*).—In asking when it would be safe to plant Potatoes in a garden sloping north it would have been helpful in answering to have known whether in the north or south of the kingdom. If your site is cold or naturally late, the soil being rather heavy, the tuber growth in the ground would be slow. Thus, if planted early in April, the tops may be looked for fully a fortnight sooner in the south than in the north. If you have your own seed tubers, or if not will at once obtain them, then set them on end in shallow boxes, keeping them in full light and air, but in a cool place. Shoots will naturally break, and by planting time may be an inch long. As you may be in danger from late frosts we should prefer planting such tubers early in May, as they would be through the ground in about a fortnight. If you can have young Potatoes in October you are fortunate in being free from disease.

2713—**Fertilising** (*Tomatoes*)—There are few Tomatoes grown on very early in heat and under glass that are not the better for fertilisation of the flowers. Later, when there can be more air given and there is more light, then flowers, as a rule, self-fertilise freely. The mere tapping of the trusses of bloom when flowers are expanded often suffices to disperse the pollen and fertilise the pistils. Still, it is easy to hold a sheet of note-paper beneath each truss of flowers to catch falling pollen when they are shaken, and then with a tiny brush these pollen grains can be taken up and applied to the flower pistils. This may be done on two or three successive days to ensure fertilisation. All the seeds named will readily germinate in a warm greenhouse now.

2714—**Marie Louise Pear decaying** (*E. A.*)—The rotting of your Marie Louise Pears prematurely on the tree, may have been due to punctures by insects, such as flies or wasps, or by birds. No sooner is the skin broken than fungus seems to take possession of the impure flesh, and preys upon it, producing rot rapidly. Or the decay may have proceeded from spores of some fungus getting into the bloom, possibly through the pollen, but not becoming active until the fruits had long been formed, then eating away the flesh of the fruits. Or it may have been due to very imperfect fruit formation, arising from the roots being in sour sub-soil, and failing there to find the needful food. If you will give the tree a moderate syringing with a mixture of sulphate of copper and lime, dissolved at the rate of 2 lb. each to 10 gallons of water, repeating it just before the bloom opens, and also giving about the roots a liberal dressing of bone-flour and muriate of potash, 1 lb. about each tree, you may do great good. Cracking, or splitting of fruits, or splitting due to fungus, invariably comes from the roots having got into sour soil that is devoid of the needful food.

2715—**Up-to-Date Potato** (*S. P.*).—This now somewhat famous Potato is, we understand, not of the Magnum Bonum type, although it grows tall and strong, like that strain. The tubers are roundish long, but not of the long form of the Magnum. The long ones bear resemblance to the long oval rounds of Satisfaction, whilst not a few also resemble the old Lapstone Kidney. At present Up-to-Date is the largest cropper probably in commerce. We have grown it and seen it grown elsewhere, and the tuber produce in each case was enormous. How long it may maintain this fine character will no doubt depend on treatment. Those who store their seed tubers properly through the winter have little cause to complain of deterioration.

2716—**Cankered Apples** (*Old Subscriber*)—The sample shoots of Apple-trees sent show a very bad attack of canker (Nectria ditissima), which, by-the-bye, is the title of the canker fungus. Canker arises from diverse causes, but we believe the chief to be the roots getting down into sour or poor subsoils that cannot furnish the needful wood constituents, and these eruptions follow, as similar ones do in the human body. These eruptions induce cracks in the bark, upon which the canker fungus preys, and so causes the evil rapidly to spread. You may cut away all the diseased parts and burn them, as you should, dressing the wounds; but that will only temporarily check the evil. If you could open a trench all round your trees, and grub under and sever the large, downward roots, then refill the trenches, forking under the roots some half-decayed manure, and about twice during the summer sprinkling about each tree about 1 lb. basic slag, bone-flour, and sulphate of potash, mixed, well hoeing it in, you will do permanent good. Occasionally a soot dressing will do good, and, in very dry weather, occasional soakings of water. Proper food for the trees is the great essential. Then, if any cracks on large limbs, scrape out rotten bark, and well dress every such place with a mixture of soft-soap, sulphur, and paraffin, dabbing it in a paint form well into the wounds with a brush. American-blight has nothing to do with canker, but it may later fasten into the wounds. Some varieties of Apples canker readily; others never do so. It is a severe disease, and can only be recovered from in the way we have described.

2717—**Chrysanthemums** (*Sparrow*).—All the kinds named may be grown by an amateur. Any good catalogue will supply the colours. We would gladly give them you, but our space, through pressure of advertisements, is very limited now. We are about to publish a long article on Carnations, with many illustrations. This will give you all needful information. You cannot plant outdoor kinds until March.

2718—**Small forcing-house** (*Be*)—It is needful to know something as to site to be able to determine fully as to shape or form of greenhouse. If you have a south wall to build against then a lean-to, with a front wall 2 feet in height, on which stands a framed glass front 18 inches in height, and from the top of that springs a sloping roof to the wall to a height of about 7 feet, you would find a cheap and easily warmed structure. You could, to get head room inside, have the floor a little sunken. If you have no wall, and prefer a span-roof house, then place it

as nearly as you can north and south, having the door at the warmest end. You would need side and end walls, 2 feet in height, of 4½-inch brickwork, except where the door was; then sides, 16 inches deep of glass and frame-work, to carry the span-roof, which on each side should have a rise to the centre ridge of about 2½ feet, and if you had a sunken path in the centre you would thus get plenty of head room; or the house should have a small brick-set saddle-boiler, sufficient to heat for forcing, a 4 inch flow and return pipe all round the house, and not too low. Such a boiler as you name may do very well if it be fixed inside the house, and can be trusted to keep up heat for twelve hours at least without attention. Boilers that will do very well for a greenhouse will not answer for forcing, where the heat must be regular and reliable. When you refer to growing vegetables in your proposed small house, we presume you mean Tomatoes and Cucumbers and perhaps Mustard and Cress, but it would be useless to hope to grow ordinary vegetables there. You could raise Cauliflowers, Celery, and Lettuces from seed in it, of course.

2719—**Various** (*E A. B*).—Fruit-trees thrive generally on almost any soils, provided these be fairly porous, and either naturally or artificially drained. Excessive drainage is not essential, but the soil should not be habitually, or all the winter, sodden or water-logged. Of prolific Apples you will find Manx Codlin, Stirling Castle, Duchess of Oldenberg, Cellini Pippin, Bismarck, and Lane's Prince Albert, for cooking, to be all wonderfully prolific, and not coarse growers. The best for eating or flavour are Irish Peach, Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Adam's Pearmain, and Cockle Pippin. Of Pears, good varieties are Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, and Alexander Lambre. These have good flavour, and are good croppers Some of our richest flavoured Pears are not the most prolific. In planting young fruit-trees it is unwise to apply fresh animal manure direct. The soil should be deeply worked, and if fairly good—that is, good enough to grow good vegetables—will do well for fruit-trees. But if planted in the autumn it is good practice to place about the roots on the surface a mulch of long manure to protect them from frost. That may be removed in April to admit sunshine and warm the soil, a fresh mulch being applied after growth has begun for the autumn. A little bone-meal, Basic Slag, or muriate of potash, may be strewn over the soil in planting. As to time of fruiting that depends on sort, on treatment, soil, situation, and many other things. Still, as a rule, fruit should appear about the second or third year after planting.

2720—**Mule Pink.**—Some twenty years ago I used to grow a mule Pink, which grew strong and well, like a Sweet William, but after some years I lost it. I did not know its name. It was in colour just like the mule Pink Napoleon III, and this now I cannot do anything with. Can you kindly tell me if this (Napoleon III) has been in commerce twenty years, and what is the probable reason I cannot grow it? My old mule Pink I used to grow in beds, making a great blaze for a month in June.—W. W.

*** *Napoleon III. is quite an old introduction, which, for a time, passed out of favour, but has of late been resuscitated. This was in all probability the variety grown of old by you. It is a good grower in heavy loam, and a very continuous bloomer. Possibly "W. W.'s" stock has, for some reason, become weakly. A fresh importation might very possibly give satisfactory results.—F.*

2721—**Erythrina Crista-galli.**—Would you kindly inform me if there is anything particular about the treatment of the above? I saw it doing well in the parks in London in August, but at Kew it was a failure.—W. W.

*** *Erythrina Crista-galli does well in the open in the south-west, growing to a height of 5 feet, and living through the winter unprotected. It is well to plant in front of a wall or glass-house rather than in the open border. A situation that suits Belladonna Lilies will generally be found to be satisfactory for the Erythrina. In colder spots a cone of ashes or Cocoa-nut-fibre over the roots, after the plants have died down, will generally preserve them alive, or the roots may be lifted and stored in dry soil or Cocoa-nut-fibre in the greenhouse, starting them into growth in the spring, and planting out in May.—F.*

2722—**Pruning Clematises.**—Must I cut down Clematises alba magna and Miss Crawshay in the same manner as Jackmani?—S. R H. G.

*** *C. alba magna belongs to the Lanuginosa group, and C. Miss Crawshay is a member of the patens type. Neither of the varieties named require such hard pruning as is advisable with the Jackmani varieties. All that is necessary is to cut away the weak, unripened growths and a part of the old flowering wood. Pruning should be done in February.*

2723—**Trilliums, etc, from seed.**—How long would it take to get flowering plants from seed of Trillium grandiflorum and Anthericum liliastrum and white Martagon Lily?—M. O.

*** *Probably from three to five years, though the Anthericum might bloom somewhat sooner.*

2724—**Treatment of Box-edging**—I have taken a garden in which the Box-edging has grown to the height of 1 foot and 6 inches in width. As this is too high I shall be obliged if you will let me know, through your columns, the right time to cut them back, and whether they will shoot out again all right?—Larkinshaw.

*** *Cut the Box-edging down as soon as growth commences in the spring. If this does not prove satisfactory you had better renew the edging in the autumn.*

2725—**Pruning Clematis montana.** — Ought Clematis montana alba to be pruned now, or when?—R. S.

*** *If you wish to prune Clematis montana this should be done immediately after flowering. If pruned now the flowering shoots will be cut away, with the result that there will be little or no blossom this year.*

The Garden Part.—*Now ready, for January, 1898 (containing all December, 1897, Nos.), with four beautiful coloured plates of flowers, also many articles on the best and newest plants, with numerous illustrations. Of all Newsagents and Booksellers, 1s.; or from this office, post free, 1s. 3d.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor *of* Gardening Illustrated, *37, Southampton-street, Strand, W.C.*

Names of plants. — *B.* — Garrya elliptica.——*L. Macgill.*—Pelligera canina, a foliaceous lichen.——*E M. Notch.*—It is difficult, without knowing anything about the flower, or the size to which the bulb inclosed grows in "Notch's" garden, to give a definite opinion as to the name. It probably belongs to the tribe of the Scilleæ. We should advise potting some of the bulbs, and growing them in the greenhouse; transplanting others, and growing in different aspects and soils. One or more of the bulbs might then flower, when cultural directions could be given with greater precision.——*Ignoramus.*—The plants you sent were not suitable for naming; kindly send again, better specimens, and in flower; 5, Abutilon Boule de Neige.——*Leaf*—1, Pelargonium Bijou; 2, Happy Thought.——*L. E. M* —Cœlogyne ocellata.——*A. B.*—Cornus Mas.——*Fern* —1, Pteris tremula; 2, P. cretica albo-lineata; 3, P. serrulata cristata; 4, Please send a better specimen. You cannot plant these out-of-doors. They are greenhouse Ferns.——*F. F.*—1, Please send a flower; 2, Anthericum variegatum; 3, Habrothamnus elegans; 4, Sparmannia africana.——*Smoke.*—1, Libonia floribunda; 2, Variegated Pelargoniums; 3, Begonia nitida alba; 4, Aralia Veitchi; 5, Begonia heracleæfolia; 6, Strobilanthes Dyerianus.——*Thankful* —1, Adiantum concinnum; 2, Cyrtomium falcatum; 3, Phlebodium aureum; 4, Next week; 5, Anthericum variegatum; 6, Pteris serrulata cristata; 7, P. serrulata ——*P. Deal* —1, Adiantum Legrandi; 2, Adiantum concinnum latum; 3, Begonia metallica; 4, Please send flowers; 5, Selaginella Mertensi ——*K D Read.*—Sparmannia africana.——*C Y.*—Cornus Mas.——*E. Sealy.*—The shrub is Lonicera fragrantissima; the other, Sparmannia africana.

TO CORRESPONDENTS

Fenton.—We do not recommend individual traders. Please look through advertisement columns.

Catalogues received.—Henry Eckford, Wem, Shropshire—*Sweet and Culinary Pea Catalogue*——Messrs. F Dicks and Co, 66, Deansgate, Manchester.—*Seeds.*——Messrs. Vilmorin-Andrieux and Co., 4, Quai-de-la-Mégisserie, Paris.—*Seeds.*——J. Green, Norfolk Nurseries, Dereham.—*Annual Guide.*——H. Doverill, Royal Seed Establishment, Banbury.—*Seeds and Plants.*——T. S Ware, Hale Farm Nurseries, Tottenham, London.—*Begonias etc.*——Messrs. Fotheringham and King, Corn Exchange, Dumfries.—*Garden Seeds.*

BIRDS.

Insects in cages (*M. Forman*)—Old wooden cages are frequently infested with what are known as red mites. Their natural colour is a greyish-brown, however, they becoming a bright red when distended with the blood of their victims, and are then more easily seen. These parasites lurk during the daytime in every crack, fissure, and possible hiding-place within the cage, and come forth at night to torment the poor prisoner, covering it beneath its disarranged plumage—eating out its very life; a bird soon dies if not speedily relieved of these horrid pests. Young Canaries while still in the nest are often subject to the attack of red mites. An infested cage, if too valuable to be burnt, should be immersed in boiling water, well cleaned, and dried or baked in an oven, care being taken not to char the wood while allowing sufficient time to kill all the insects and destroy the eggs. Then with a small brush well paint every crack, crevice, and joint with Fir-tree oil. The bird, being removed during the operation, should bathe frequently in lukewarm water, allowed as much air and exercise as possible, and be well dusted under the feathers with Pyrethrum-powder; great perseverance is necessary in order to entirely banish these pests, for they possess great vitality, and it may be ascertained if the bird is still troubled with them if a white linen cloth be placed under the cage at night. If any are present they will be found next morning adhering to the cloth, and the operation must be repeated till no more are to be observed. The loss of feathers probably arises from irritation of the skin. A rusty nail in the drinking water and a small piece of salt for the bird to peck at will assist in purifying the blood.

Hartz Mountain Canary (*Miss H. Jervoise*).—On examining this bird a large clot of blood was seen occupying a position just above the heart; this was due to the rupture of a blood-vessel, and would account for the suddenness of the bird's death. It had in all probability been alarmed. The liver was found to be in a bad state of congestion, which might be accounted for from the bird having been kept in too warm a room. You appear to have fed it judiciously. The sneezing you speak of may have arisen from a chill brought on by a sudden draught of cold air through the warm room. An old remedy for the cure of coughing and sneezing in birds is to infuse some leaves of the common Speedwell, which have a small degree of astringency, adding to the liquor a little honey. Some of this pectoral-tea is supplied daily for a week or ten days, after which a good allowance of green food is given, such as Dandelion and Watercress, and a small supply of Flax-seed.

Gulls in garden (*Dr. Cresswell*)—Although the food of the Gull tribe is, of course, fish, these birds will in a state of captivity thrive upon any kind of animal food, as to the freshness of which they are not at all particular, being extremely voracious. In a garden they will consume large numbers of earth-worms and slugs. It is usual to clip one of the wings or draw out a few of the flight feathers to ensure against their sudden departure over the garden wall when allowed their liberty. It is seldom a cat attempts an attack upon these birds, their formidable bill and powerful wings rendering them very difficult of approach. Still, it would be well to provide a covered-in shelter for your birds at night, tempting them into it at the close of the day by means of a few dainty morsels. We cannot say what other sorts of birds could be kept with them, unless it were other members of the Gull family. The species are exceedingly numerous, among the principal being the common Gull (Larus canus), which breeds in inland moory districts as well as on the sea coast; the Lesser Black-backed Gull (L. fuscus), the Black-headed Gull (L. ridibundus), the Ivory Gull (L. eburneus), the Iceland Gull (L. islandicus). If you could provide your birds with a small pond—the water need not necessarily be salt—it would be very much appreciated by the captives.

POULTRY.

Lice in Fowls (*Daisy*). — Your best remedy is to thoroughly limewash the interior of the Fowl-house, paying special attention to the perches and the crevices in the walls. In the limewash you should either put some paraffin or carbolic disinfecting powder, and a little of the latter ought also to be mixed with the dug earth or dusting material in which the Fowls clean themselves.—Doulting.

Poultry-keeping hints (*G. C M. N.*).—The number of eggs you may reasonably expect to get in the year depends upon two things: first, the class of hens you keep; secondly, the way in which they are managed in other respects besides feeding and housing. The hens which should be kept for eggs should be specially bred for that purpose, say on the lines so often laid down in these columns. From the hens thus bred I can calculate on an average of above 150 eggs per annum, and this, I may add, is not confined to a few fowls, but to a varying number, ranging between 100 and 200. At present we have more than 200 hens and pullets; and to-day (January 26) I have collected 71 eggs. The hens are specially bred for laying, but they breed good table chickens if mated with an Indian Game-cock. Secondly, I hatch my laying stock in the months of March, April, and May; they begin to lay in October, and we are never without new-laid eggs. The hens are principally sold off at 18 months old, when they moult, and thus the stock is always kept young. The Fowls are fed twice a day—early in the morning on a mixture of Spratt's-meal, Sharps, or middlings, and (in cold weather) Indian-meal; and in the afternoon they receive a meal of hard grain—Wheat or Buck Wheat, or heavy Oats. They are allowed just as much as they will eat, and no more—that is to say, I never permit the food to lie upon the ground from one meal to another. It is absolutely impossible to calculate upon the exact quantities of food to use, because the hen's appetites vary when they lay or are resting. A good and observant feeder can estimate their requirements to a nicety after he has fed the birds for two or three days. I never use Maize in its whole state, as it tends to promote the formation of internal fat, and this does not favour egg production. You should occasionally visit your yards, and see whether the Corn lies about from one meal to another.—Doulting.

Ailing Fowls (*A. H. Lewis*).—I am much obliged by your second letter. It would have answered my purpose better had you given me

the dimensions of the runs. As the case stands, I have no hesitation in saying that the cock and hen referred to in your second letter were unhealthy when you bought them, the hen particularly so, and your somewhat limited space practically settled their chances of recovery. With reference to the 1896 Leghorns which you bought in December, and one of which you have lost, I am inclined to believe that unsoundness was also present in this case when the fowls were brought on your premises. You must bear in mind that Leghorns are very free layers, and it is not an unusual occurrence for hens of this breed to be exhausted at the end of the summer, so that they have really no strength left to withstand the strain of the autumnal moult. For example, on the last August Bank Holiday I was asked to judge the eggs and poultry at a cottage garden show. The first prize eggs were a splendid sample as regards size and uniformity, and I afterwards found that they were laid by a white Leghorn hen. I thereupon offered her owner the use of a male bird for this season, in order to secure every egg for sitting purposes, the strain of blood being so valuable. Unfortunately, the hen failed to survive the [illegible] and so all connected with the ar[illegible]gement are disappointed. The chickens may or may not have been affected with the liver disease; but under the circumstances I think it more likely that their failure to survive the risks attending chickenhood to be due to the use of too limited a run, coupled with a lack of nutritious food. Chicken-raising cannot be satisfactorily carried out in small runs, particularly when the chicks are compelled to run with adult fowls. It is absolutely necessary, when they are in a growing stage, that they shall be supplied with muscle-forming foods, and, in cold weather, heat-forming foods should be also available. You do not say how you feed; well soaked bread is a favourite food for chickens, but is the worst possible to imagine. Meal mixed into a stiff paste with sound Wheat in the afternoon is far better; an occasional handful of meat-scraps will do good. An excess of Potatoes is to be avoided. Liver disease would scarcely be pronounced contagious, although favourable to an unhealthy state of things; but it is certainly hereditary. With lung disorders I should expect all fowls affected by the same cause to be likely victims.—Doulting.

FOOD FROM GARDEN, ORCHARD, AND FIELD.

To cook Salsify (*W.*).—Scrub the Salsify to remove all the dirt. Then scrape off the skin, putting them as quickly as possible into a basin of cold salt water. Have ready a saucepan of quite boiling water—salted—with a teaspoonful of Lemon-juice, or white wine vinegar; let the Salsify boil quickly, and cover, until it can be easily pierced with a fork. Melt a good lump of butter in a saucepan with the juice of half a lemon, well seasoned with pepper and salt. As soon as the Salsify is tender, take it out of the water, and put it into the Lemon-juice. Let it simmer a few minutes; then lay the Salsify on a piece of toasted bread, pour over the same, and serve as hot as possible. Salsify may be served with any nicely made sauce—brown or white—Parsley, or Tarragon, Chervil, also cut through, and then in short lengths. After boiling, dip each piece in flour, then in egg and bread-crumbs, fry a golden brown in boiling butter; it is also very nice scolloped.—B.

2726—**Fruit of Pyrus japonica**.—To what uses—if any—can the fruit of the Pyrus japonica be put?—H. B. H.

LAW.

Notice to quit.—Five years ago I took an acre of land as a garden at the yearly rental of £1, upon a verbal agreement for a yearly tenancy; the land had been previously let for £2 a year. Three years ago I took another acre of land of the same landlord, also at £1 a year. He now says that unless I pay the old rent he will let the land to someone else from Lady Day, without giving me notice to quit. One acre of the land is sown with Wheat, ½ acre with Clover, and ½ acre is fallowed and the fallow worked. Can I claim for work and crops? What notice to quit is necessary? I hold 2½ acres under this landlord, and he wants me to pay half a year's rent which was in arrear before the late tenant had done with the land. Can he compel me to pay this?—Constant Reader, J. H.

*** As you have no written agreement and the land is occupied—at least, in part—as agricultural land, your landlord can only compel you to quit by giving you a year's notice, and the notice must expire with a year of tenancy. So if your year of tenancy begins at Lady Day he cannot compel you to quit until Lady Day, 1899, and if he does not give you notice before or at Lady Day next he cannot compel you to quit in 1899. If you choose to quit at Lady Day next you make your own bargain with your landlord as to payment for crops and for work, and you will be much to blame if you quit without he makes payment for all work done and for the crops. If he gives you notice your position will depend largely upon the terms on which you entered on these pieces of land. If you paid for nothing when you entered you will be entitled to no payment for anything when you quit. After you receive notice to quit you should sow no crops which you cannot remove before your tenancy expires, and you must do no work to the land after the notice is served on you. But you say you took the land as a garden, but it is evident you do not cultivate it as a garden, although the point does not concern the answer now given. You do not say how it is you come to hold 2½ acres, but probably you have recently taken half an acre. If you took this land of the late tenant, and so are really sub-tenant, your landlord may distrain on this half acre for the rent that is in arrear; but if you took the half acre of the landlord himself, you cannot be compelled to pay the arrears. Your landlord seems to have some peculiar ideas as to his rights, but he can no more compel you to pay an increased rent without your consent than you can compel him to accept less rent than you have been paying. Should he carry out his threat and let any or all the land to anyone else, you must treat the person who enters as a trespasser, and you may either turn him off by force when he comes on the land, or you may bring an action of trespass against him and your landlord and recover substantial damages. I should recommend you to put the matter into a solicitor's hands if the land is let and the would-be tenant tries to cultivate the land or to take possession of it.—K. C. T.

Servant's claim for references.—I have just left a situation, and my late employer refuses to give up the references he got with me. Can I claim them?"—J. J.

*** If the references were given to you by your previous employers, and you produced them to your late employer in the ordinary course while negotiating the contract of service, you should have stipulated for their immediate return; but, in spite of the omission, you may recover them, or substantial damages, in the county court. If the references were not sent to you, but were sent by your previous employers direct to your late employer, they are his private property, and you cannot enforce any claim to them.—K. C. T.

Market Gardeners' Compensation Act.—Five years ago I took some land for market garden purposes, and, with the written consent of the landlord, I erected some greenhouses. At the end of my lease can I compel my landlord to take these greenhouses at a valuation, if I so desire? How is the value arrived at? Does he call in the valuer or do I? Does the Act give the landlord the right to take or to refuse to take the greenhouses at a valuation, as he may think proper, or does it compel him to take them if the outgoer so desires?—Z. Y. X.

*** The procedure under the Market Gardeners' Compensation Act is just the same as under the Agricultural Holdings Act. To secure compensation you must, not later than two calendar months before the expiration of the tenancy, give to your landlord written notice of your claim, and in the claim you must set out as far as possible the particulars and the amount of the claim. In the case of such a claim as this there can be no difficulty in giving full particulars in the notice. You and your landlord may then agree between yourselves upon the amount of the compensation, but, if you do not so agree, you may jointly appoint some person to act as referee, and to determine the value of the greenhouses. If you fail to agree in the appointment of a single referee, you must each of you appoint a referee, and the two referees will settle the value between them. The landlord has no option in the matter; if the tenant claims compensation and gives the proper notice, the landlord must take the greenhouses by valuation, whether he wishes or not.—K. C. T.

TOOGOOD'S ROYAL GARDEN SEED GUIDE,
Containing hundreds of beautiful illustrations, sent gratis and post free to intending purchasers from
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SURELY IT'S NEVER TRUE? YES, but I am sure it is! I had a Collection last year, and he sells thousands of them. The Villa Collection, 21 large packets of genuine flower seeds, all different, carefully packed, and free, 1s.—G. LETTS, Seed Merchant, West Haddon, Rugby.

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MARGUERITES, yellow or white, 1s. doz; 6s. 100. Primrose or Violet roots, 1s. 3d. 100. Desgrange Chrysanths., 2½, 1s.; 3s. 100. Ivy Geraniums, Crousse and Lemoine, 1s. 3d. doz.; 7s. 100. Fuchsias, 1s. doz. Marguerites, 3 new varieties, sports from Etoile d'Or, Edburtonia, Cream, Distinction, sulphur, bronze, with dark glazed leaf; 2 of each above, with 3 white and 3 yellow, 2s. 6d., carriage paid.—WILLIAMS, Marguerite Grower, Fulking, Beeding, Sussex.

LORD PENZANCE'S HYBRID SWEET BRIERS.—One dozen strong plants of these lovely new hybrid Sweet Briers, in nine distinct varieties, carriage free for 10s. 6d. Strong plants with long shoots that will flower freely this year. Full description of these and other Garden and Old-fashioned Roses in Cooling's Rose Catalogue, gratis and post free.—GEO. COOLING & SONS, The Nurseries, Bath.

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SPECIAL CLEARANCE SALE of HARDY PLANTS.—Canterbury Bells, 2 year-old plants, 25, 1s.; 50, 1s. 6d.; 100, 2s. 6d. Pansy, best sorts, mixed, 50 1s. 3d.; 100, 2s. Salvias, Hollyhocks, Iceland Poppies, Oriental do., Gaillardias, Pyrethrum, Perennial Cornflowers, &c., 12, 1s. 3d.; 25, 2s., free. All good, strong, healthy plants.—LEIGH, Florist, Broughton, Hants.

LILIUM AURATUM! LILIUM AURATUM!—My usual good quality. Every bulb sound, fresh, and plump. Magnificent bulbs, measuring 12 inches round, 1s, each; 10s. doz. 10-inch bulbs, 7s. doz. Good flowering bulbs, 4s. doz; ½ doz., same rate. 3s. orders and above, free. Car. pd.—E. ROBINSON, 82, Shaftesbury-rd., Hornsey-rise, London.

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HOT-WATER BOILER (Saddle), with furnace fittings; capable heating 480 feet 4-inch pipe. Good as new.—Quay Leather Works, Gloucester.

GARDENING ILLUSTRATED.

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INDOOR PLANTS.

WINTER FLOWERS IN AN AMATEUR'S GREENHOUSE.

Having been very successful this winter with flowering plants in my greenhouse, which is only 17 feet by 11 feet, I thought it would interest some of your readers to know the kinds I have found especially useful, easy to manage, free flowering, and making the house cheerful through the dull winter months. I do all work myself and try to get as large a variety as possible in the limited space at my disposal. I will only mention those plants in bloom at the present time. First in the list is the Genista, several plants being a mass of bloom, a large-flowered yellow Abutilon, various sorts of Polyanthus Narcissus, Bermuda oxalis, Lachenalia Nelsoni, and Linum trigynum, which is a very effective yellow flower. Amongst blue-coloured flowers there are some pots of trailing Lobelia, several plants of blue Daisy (Agathæa cœlestis) and Campanula isophylla. The last-mentioned has been in bloom a very long time. White flowers outnumber coloured ones and are always favourites. Six well-filled pots of Arum Lily have 17 blooms and more coming. A few double white Azaleas are well covered, especially the older plants, Spiræa japonica and Deutzia gracilis, just opening. Marguerites, Primulas double and single, Roman Hyacinths, White Abutilon, Paper-white Narcissi, Sparmannia africana, Hyacinths, and several pots of the charming Cape bulb, the sweet-scented Freesia. Salvia rutilans with Begonia fuchsioides, red and pink, have bloomed since November. Directly the flowers of the Salvias are past their best they are picked off and the plant soon pushes out new growth.

Zonal Pelargoniums have been constantly in bloom since they were brought into the greenhouse, and with a great variety in colours have made quite a display. I treated in the way advised in Gardening Illustrated, and am very pleased with the results. Cuttings were taken in the spring, and the plants grown on till November, every bloom that appeared till that month being removed. They have been in bloom more or less ever since. I give the names of some of the kinds grown, double and single, Raspail Improved, Lady Chesterfield, John Waterford, Corunna, Goldfinder, Mrs. Cordon, Miss Edith Strachan, John Gibbons, Grand Duke, Mrs. Robinson, Lord Derby, Niphetos, General Billot, Mrs. G. Lowiage, and that most useful free bloomer, H. Jacoby; of the last-mentioned variety I have large plants taken from outdoor vases. They were slightly trimmed to shape, and have flowered profusely, as well indeed as in the summer, but the colour is not quite so bright as in sunny weather. Solanums and a few pots of Cyclamen, with some Heliotropes and one or two Fuchsias, have done well. Malmaison Carnations and Rose Reine Marie Henriette will soon follow and help to increase the variety. I cut 33 blooms from the Rose-tree last spring and hope to have more this season. When the plants are grown indoors the colour is very fine, but, unfortunately, being such a rapid grower, it has to be cut back so hard. Managing a greenhouse is pleasant work, especially to the amateur. One has to be always looking forward, trying to get a good succession of bloom, and hoping for good results to follow. A. Cooper, *Marston, Frome.*

CAMELLIAS IN POTS.

Camellias were once much in favour, but stiff flowers have been superseded in popularity by others more graceful and elegant in form. Most people think of Camellias as large bushes growing in a permanent bed in the conservatory or elsewhere, and though under these conditions they are handsome specimens, it is as pot plants they are most suitable to the amateur.

They are so easily grown that anyone having the accommodation of a greenhouse may succeed with them without much trouble. The frequent complaint of amateurs is the difficulty in obtaining plants to bloom in the winter, and for this reason alone pot Camellias are worthy of a place, for during the summer they may be stood outdoors, and then be removed to a house of cool temperature on the approach of winter. Propagation is a slow process and is not recommended, as sturdy, well-budded imported plants may be purchased in the autumn, and it is the after treatment of such specimens to which these remarks apply. The idea should be to keep the plants healthy and well furnished with foliage, as lanky specimens with bare stems have anything but a prepossessing appearance.

After the plants have done flowering they should be placed in a light, warm position and fed with a little liquid-manure occasionally to encourage new growth. This is important, as the growth made after blooming has to carry the next season's flowers. When the shoots are matured is the best time to repot if the plants require it. Potting is not necessary every season, and when the operation is not performed, it is a good plan to remove a little of the surface soil by pricking it up with the point of a sharp stick, and top-dressing with good soil. When potting, large shifts are not advisable, and after, by pricking away the old soil, the plants may be removed to the same sized pots again, the compost being formed of good fibrous loam, with an admixture of peat or leaf-mould and coarse sand, with charcoal or lime-rubbish added to keep the soil open. It is important that the balls of the plants are not dry when removed, and firm potting is essential. Good drainage is also necessary, otherwise the pots are apt to get waterlogged, which causes the soil to turn sour. Camellias require abundance of water, but the conditions must be such that it can escape freely, as stagnation of the roots causes the leaves to turn yellow and fall.

While making fresh growth the plants may be syringed freely, as this not only keeps the foliage clean but assists the young shoots. After potting the plants should be shaded from strong sunlight, and judiciously watered till the roots are in vigour, when more copious supplies may be given. The plants will do well outdoors during the summer months, preferably on a bed of ashes near a wall, where they are shaded during a portion of the day. After the buds have set great care should be taken that the plants do not suffer from drought at the roots, as this causes buds to fall more than anything. Judgment must be used in this matter so as to apply water when the plants require it without making the soil sodden with an over-supply. Sometimes large clusters of buds are formed at the tips of the shoots, and in such cases a portion should be removed when swelling, leaving one or two to expand, by which means large flowers are ensured. Leaves of Camellias often get dirty and infested with scale, therefore frequent spongings with soapsuds are necessary. Any old specimens that have grown lanky may be cut hard back in the spring, when, if placed in a warm temperature, they will break again freely, and in time make sturdy plants.

There are many varieties of Camellias in cultivation, of different colours. Amongst the favoured are the pure whites, such as alba plena fimbriata and alba casoretti. Lady Hume's Blush is a white, suffused with a delicate rose-blush. Among reds, imbricata, Jeffersoni, and Mme. Lebois are charming varieties; and C. H. Hovey, Countess of Orkney, Donckelaari, Reine des Fleurs, and tricolor are all striped sorts. Though there is nothing novel about the Camellia, one rarely meets with good specimens in pots; yet so simple is the cultivation that no amateur's greenhouse need be without a few of these bright flowers in the early winter. H. H.

The Silver Wattle (Acacia dealbata).—Among the most characteristic groups of plants which constitute the wonderful flora of Australasia none has held a more important place in European horticulture than the Acacias. A generation or two ago they were popular in gardens, and it says much for their value that they are still common greenhouse plants. One of the most distinct, and perhaps on the whole the most beautiful of them, is the Silver Wattle. Unfortunately, it cannot be satisfactorily grown as a small pot plant, but requires enough head room to develop into a small tree. In the temperate-house at Kew it is in flower. The foliage is very finely divided into minute and numberless leaflets, which are of a beautiful silvery hue, and resting against them are the soft, plume-like clusters of clear yellow flowers. It is rarely that one sees so marked a combination of beauty in flower and leaf. For cool conservatories with a height of 20 feet or more there are few more desirable plants than this.

Primula obconica rosea.—This is undoubtedly the most decided break in point of colour which I have seen in the above-named species, and when fully developed plants are secured with their wonted mass of spikes the plant will create a welcome change among mid-winter flowering plants. P. obconica is just the reverse of formal, either in foliage or flower. At the same time the numerous spikes of bloom are well lifted up, sufficiently so, in fact, to render them useful for cutting. In habit it is a counterpart of the type, differing merely in the colour of the flowers, which are of a beautiful rose shade and pretty in the extreme.—J.

GARDEN WORK*

Conservatory.

Bamboos are graceful plants under glass, and I am surprised that a larger use is not made of them in large conservatories and for room decoration. They are light and elegant, and form a pleasing contrast to the other greenery of Palms and Ferns. There is a great show of Narcissus available now. They are charming and are much in demand for cutting. We grow a few of the double Van Sion to start with because they flower so well; but afterwards there is no demand for double flowers. The Pheasant's-eye ornatus is a charming bulb for cutting, and also for growing in 7-inch or 8-inch pots for the conservatory. The bulbs may be planted thickly after the earliest Chrysanthemums are over in the same pots the Chrysanthemums were in, and after forcing, cool down and plant out in the shrubbery or in the orchard, or anywhere. Some day they may be lifted and forced again. White flowers are always in demand now, and among the most useful at this season are Arum Lilies, Paper-white Narcissus, double Primulas, Deutzias, Lilacs, white Azaleas, White Camellias, Lily of the Valley, Solomon's Seal, white Cyclamens, and white Rhododendron Cunninghami. Zonal Pelargoniums that were cut down immediately after flowering will be breaking now, and should be shaken out and repotted. Pelargonium cuttings of the Zonal and scented-leaved sections will strike now over hot-water pipes, but will damp in a close frame on a hot-bed, though nearly all other kinds of cuttings will do best in the hot-bed. We shall probably have colder nights now for a time, and steady fires will be necessary, but it will be better not to exceed 50 degs. at night. In mild weather, if a fire is lighted at all, it is difficult to keep the temperature under 50 degs., and rather than exceed that I should give a little air. We have been doing that with our Pelargonium-house more or less all the winter, and the plants show by their sturdy growth that they appreciate it. We do not want to let in frost or rain or cold winds, but at other times night air is beneficial. Still continue to do the watering in the morning, so that the damp may dry up before night, but with fires lighted a little damp will do no harm, and the time is coming when more moisture in the atmosphere will be a necessity.

Forcing House.

With a night temperature of 65 degs. and a corresponding warmth during the day progress of many things will be rapid now. French Beans will be up in a few days. Cucumbers and Tomato-seeds will germinate in a week or less, and cuttings of soft-wooded plants will root in a surprisingly short time in a brisk bottom-heat. Not much ventilation will be required just yet in roomy houses. Very small houses get stuffy if no air is given beyond what comes in through the laps of the glass; but there is always circulation in a large house still for growing certain classes of plants. I prefer a smaller house. I should like to have a small house for Crotons and Dracænas, another for Amaryllis with a bottom-heat bed, and so on to classify things a bit. Those who can command these advantages ought to excel in their culture. At this season a house of Malmaison Carnations will be not only intrinsically valuable, but also very charming. How beautiful, too, through the early winter and spring would be a house full of Pancratiums, and another of Clivias, but with most of us these are only dreams never likely to be realised. More water will be required now, both at the root and also in the atmosphere. Use the sponge, if necessary, to clean dirty leaves, and vaporise to kill insects. Repot Ferns which are starting into growth. Put in cuttings of Gardenias and Euphorbias.

Late Peaches

will soon be starting into growth under glass, and all necessary tying should be done before the buds move. Peaches do best in firm borders, and if there is any tendency to over-luxuriant growth, dress the borders with old plaster or mortar from the pulling down of old buildings. In some cases root-lifting may be necessary, though this should be done in the autumn. I do not like the Brompton-stock for Peaches. The trees make too much growth on it.

Mushroom House.

This house should be in full work now. As a rule the Mushroom-house is too small for doing all the work it might do profitably. Where there is a range of lean-to houses, the whole of the back wall might be utilised for Mushroom-houses. The cost of building would be very small, and if well constructed a large house would require no fire, as the warmth of the beds would keep up the temperature. In a large house some beds are being taken out and refilled weekly now.

Pines.

It will soon be time to overhaul the Pines and see what condition the forcing beds are in. In old days the bottom-heat was kept in many places by tan beds, and these had to be renewed at stated periods. But Pine-growing will soon be a lost art, as gardeners practised it in the past. Certainly Pines require very careful management, especially in winter. If the fully-developed successors are late in showing, lift them out of the bed and keep rather dry for a time, then when the beds are removed the warmth will shoot up the flower stems, to be followed by the fruit as the flowers set. In some cases repotting will be necessary. What are termed stage-plants, which have missed fruiting, may be made to start by shaking out and disrooting, repotting, and plunging in bottom-heat.

Window Plants.

Green-fly will appear on Pelargoniums. If the plants are looked over occasionally flies may be picked off before they have done any damage. Turn the plants round sometimes, so that all sides may have equal shares of light. Fuchsias which have been kept dry may now have moderate waterings. Maiden-hair Ferns which have partially dried off should have moisture.

Outdoor Garden.

As soon as a frame can be spared make up a hot-bed to sow a few seeds in which require to be started early. Among these may be named the usual kinds of sub tropicals, such as Castor-oils, Solanums, Cannas, etc. Tuberous and other Begonias may be sown now in heat, and if Sweet Peas were not sown outside in autumn, sow a few now thinly in pots to plant out in April, or earlier if ready. The new Cannas will be a success early in sheltered places, and the beds must be well prepared with deep, rich soil. If the soil is heavy lift the beds up and place a layer of brick-rubble beneath to insure drainage and warmth. Marguerite Carnations may be sown now in gentle heat, so as to have strong plants to put out early. Iceland Poppies are indispensable for cutting, and if not sown in autumn give them a start now in gentle heat, and prick off when large enough. Choice Hollyhocks that were potted up or that were laid in the warm border may now be divided and started in pots. This division may suffice when only a few extra plants are required, but if many are wanted the young shoots may be struck as cuttings, though, as a rule, the hardier Hollyhocks are brought up the better. This is why seedlings have been so much used since the disease became so destructive.

Fruit Garden.

It is sometimes advisable to regraft old Pear-trees on walls and espaliers. If the trees are healthy, in a couple of years an unfruitful tree of perhaps an inferior kind may be converted by grafting into a fertile one. It is better to divide the tree into two portions and regraft the bottom half first, and when some progress has been made cut away the upper branches and regraft them. If desired, more than one kind may be worked on each tree, and so a greater variety be obtained. Grafts should be taken and laid in damp earth in shady place now, and the branches sawn off the old trees which are to be regrafted, leaving a piece of stem to be cut off when grafts are put on. Prepare ground for Strawberries if to be planted in spring. March is a good month for planting. The distance between the plants may vary a little, according to the usual size of the foliage, but 2 feet between the rows, and 18 inches from each other in the rows, is a suitable distance, and if the ground is prepared now, and the plants set out early in March, at the same time a row of Onions may be sown midway between the rows of Strawberries. If the Strawberries are to be planted in August get the ground trenched now and heavily manured, and about the 1st of March plant early Potatoes Duke of York or Beauty of Hebron. These will come off by the end of July, leaving the ground in good trim for the Strawberries.

Vegetable Garden.

The busy season in this department will soon be here, and every bit of vacant land should be got ready for cropping. In consequence of the mild winter things are in a forward condition, and probably some may be inclined to get the bulk of the crops in rather too early, but it will be something wonderful if we escape severe weather altogether. Early crops of all kinds should be got in. These are usually planted in small quantities on the warmest sites in the garden. Plant Jerusalem Artichokes. There is a pale coloured variety of better shape than the old sort, and this is the most profitable sort to plant. Fresh roots of Mint may be placed in heat. Tarragon and Basil will also be required—the last-named is an annual, and should be sown in a warm-house or pit, and potted off when large enough. Sow Brussels Sprouts in a box under glass, and prick off when large enough. I have sown outside in autumn for the earliest lot, but prefer to sow now under glass and prick off when large enough on the warm border outside, so as to have strong plants to go out in May, sowing again outside in April for later crops. Hot-beds may be made of much use now for raising early Carrots, Radishes, Lettuces, French Beans, dwarf early Peas, Potatoes, etc. Success is only a question of management. Plant Shallots and Garlic, also Horseradishes. Prepare ground for Seakale-roots.

E. HOBDAY.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

February 7th.—Put in cuttings of various bedding plants, also a good batch of Ruspail Improved to grow on, flowering next winter under glass. This and La Oygne (double white) are grown largely for winter, the cuttings being struck now. Shifted earliest-struck Chrysanthemums into 4-inch pots. They will be grown quite cool from this onwards. Cut down old plants of white and yellow Marguerites, and put in cuttings. We are giving liquid-manure now to various plants coming into bloom, including Hydrangeas, Cinerarias, Pelargoniums, and Genistas.

February 8th.—Cleared off old green crops. Manured and dug land. Planted more early Potatoes. Put sticks to autumn-sown Peas, and stuck in a few evergreen branches on windward side to keep off cold winds for a time. Rearranged stove and repotted several plants of Allamanda, Bouganvillea, Stephanotis, and Clerodendron Balfouri. Repotted Gloxinias and some of the early-rested Achimenes. Gave less water to Gesneras to ripen off growth of the late-blooming stock. The season can be prolonged by starting some later.

February 9th.—Tied and stopped Cucumbers. These are growing fast now and need frequent attention, with occasional light top-dressings of rich compost. We do not ventilate, but use abundance of heat and moisture. Commenced to replant hardy edging plants round large flower-beds, these including Sedum glaucum, Golden Thyme, Cerastium tomentosum, Santolina incana. These are best planted annually, though I have had edgings of Santolina last several years. Young cuttings of the latter must be taken, as nothing can be done with old plants. We always strike a lot in frames.

February 10th.—Planted a warm pit with Ne Plus Ultra French Beans. Removed old forced Asparagus from frames, and planted early Potatoes therein. Raked down one of the open-air Asparagus-beds, and covered it with movable frames and lights. The Grass comes early in these frames, and is of excellent quality. We do not always cover the same bed, but generally select one of the strongest. Placed more Seakale in Mushroom-house. Mushrooms are plentiful now.

February 11th.—Potted Cauliflowers raised in heat. They will be grown on shelf in greenhouse, and hardened off and planted out when weather is suitable. I have cut from these plants raised in heat from a January sowing quite as soon as from the August sowing, and the plants are more reliable. Commenced watering Cactuses again in greenhouse. They are kept dry through the winter (except Epiphyllums), and as soon as moisture and warmth are given the buds appear. They are charming and interesting plants.

February 12th.—Now that Early Strawberries are set, weak liquid-manure is given at nearly every watering till the fruit begins to colour. When Strawberries are forced early there are nearly always a few blind plants to throw away, even if the runners are carefully selected. But the plants introduced now will be better. The early flowers are always artificially fertilised from day to day till enough are set for a crop. Commenced thinning Grapes on pot-Vines—Hamburghs and Foster's Seedling. Staked early-flowering Pelargoniums; these are now in bud.

Planting border *(Mrs. F. B.)*.—The bed described should do well for Lilies. The sun not being on the bed after 11 o'clock would be much in their favour, their lasting powers as regards blooming being much diminished if they are exposed to scorching mid-day sunshine. Evidently the first thing necessary is that the bed should be entirely remade, as the dense mass of Euonymus must have robbed it of all nutriment. It should be dug out to a depth of 2 feet 6 inches 3 feet is better—and the lower foot filled in again with the old soil and manure in equal quantities. The remainder should be made up, if possible, of fresh loam, with which well-rotted manure and leaf-mould should be incorporated. Herbaceous Pæonies should do well in this bed, and grow strongly. A writer has lately said that these Pæonies will flourish luxuriantly on a hot, dry spot, where their roots are robbed by the roots of trees. This is, however, not a usual experience, the best results invariably following deep, well-manured soil and a plentiful supply of moisture. Now is a good time to procure and plant the roots, which should not be placed nearer together than 2 feet. In the spaces left clumps of Lilies may be planted—say, six to ten bulbs in a clump, the bulbs 4 inches deep, and 4 inches apart. In planting these latter care should be taken that no manure comes in contact with the bulbs. If sand is plentiful it is well to surround the bulbs with it. Close to the Pæonies Narcissi may be planted, such as Golden Spur, Emperor, Maximus, Horsfeldi, Sir Watkin, Stella, Cynosure, Barri conspicuus, and Poeticus ornatus. Good varieties of Lilies will be the Orange Lily (L. croceum), the Madonna Lily (L. candidum), the white Turk's Cap Lily (L. Martagon album), the pale buff L. excelsum, the scarlet Turk's Cap (L. chalcedonicum), the golden L. Henryi, and the Tiger Lilies, L. tigrinum splendens and L. t. Fortunei. Of named herbaceous Pæonies the number is legion, new varieties of merit being introduced every year. Of single whites, the early-blooming P. Emodi is beautiful, as is P. albiflora, and its named offspring, The Bride, also white; Agnes Mary Kelway, sulphur-rose; Leonie, flesh colour; candidissima, primrose-white; Reine des Françaises, pale rose; Lady Leonora Bramwell, silvery-rose; Lady Beresford, rose; Prince Prosper, crimson; and Whitleyi, satin-white, are all good doubles, while Arietina and its varieties are well worthy of cultivation, and the new Yellow Pæony (P. lutea), it is to be hoped will turn out a success. Pæonies had better be procured from firms that make a speciality of that flower, and who grow thousands of plants. Advertisements of such firms may be seen in GARDENING ILLUSTRATED every week, and they will send price lists on application. This bed will be a permanent one, and will, if prepared as suggested, require nothing done to it for two or three years, when it may be given a top dressing of manure. This will, however, have to be applied earlier, if the bed is not at its first making composed as richly as advised. The Narcissi will flower while the Pæonies are making their young, crimson shoots. Later on the Pæony blossoms will expand, and when they are past the Lilies will thrust tall spires through the leaves and bloom until the autumn. On no account should the Pæony leaves be cut off until the sap has retreated into the crowns.

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* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

FRUIT.

APPLE WARNER'S KING.

Few Apples have become so popular as this old variety. As an amateur's Apple for early supplies for cooking it probably has no equal, and its good quality also commends it to growers for the market, as it is a most profitable variety. As will be seen in the illustration, it is a handsome fruit, and though the fruit here shown was grown in the favoured Kent county—one of the best in the kingdom for Apples—Warner's King is not at all fastidious. It will grow in most counties. In the Thames Valley, in anything but a good soil, we get our best fruit from this variety; but it does not keep so long as that grown in better soil, as the stem soon gets spotted and decays. I note this failing, as my readers who do not know this variety should be aware of its failings as well as its good points. On the other hand, it must not be kept when grown for sale, as it loses weight and shrivels, owing to the soft, tender flesh. This variety has no fewer than a dozen synonyms, such as—Nelson's Glory, D. T. Fish, and Poor Man's Friend; the latter, doubtless, because of its cropping, market value, and size. I have frequently seen fruits of this variety 18 oz. to 20 oz., and they are frequently 1 lb. in weight. This variety does not like heavy wet soil, but in land well drained it crops splendidly, and bears when others fail. Owing to their softness the fruits need care in gathering or storing, as they bruise quickly. At the Apple Congress, in 1883, when so many splendid fruits were brought together under the auspices of the Royal Horticultural Society, in their Chiswick Gardens, no less than 150 exhibitors staged this variety from all parts of the country. This shows its popularity, and that it is not grown in any one part of the kingdom. I note this latter point as of interest to amateurs who may live in less favoured fruit localities than Kent. I have omitted to give the season for the fruit, and though in many catalogues it is mentioned as from November to March, I would advise its use from October to December. Doubtless, in northern localities, it may be kept much later than December. It is at its best at time named.

The tree is a vigorous grower, very hardy, and less subject to disease than many others—in fact, I have had this variety in close contact with others that it has been almost impossible to keep free of American-blight, and yet it gave no trouble whatever. This, to the amateur especially, is an important point in culture, as trees which get diseased quickly are a great nuisance. I prefer it as a standard. If the land is not too cold, and the heads are not crowded, there will be fine fruit. On the other hand, given orchard culture, there must be no crowding and free exposure is necessary, and by the term keeping the heads thin I mean cross-branches should be removed, as the best fruit is produced on the portion exposed to full light and air. Some amateurs with small gardens cannot grow standards, and in their case the bush form is most suitable, as grand fruits may be obtained. The trees in this form may be highly fed, and the fruit when thinned is very large and of a beautiful colour. This variety makes rather a spreading bush, and does not need too much pruning. I mean if hard-pruned yearly, a portion of the crop is cut away. Doubtless, it is more at home as a standard, and in no case would I advise pyramid trees that have to be kept in shape if grown as a bush. Give a little freedom if possible. The trees must also be root-pruned occasionally. As a market fruit it is grand. Last September and October this variety realised 10s. a bushel, and the finest fruit even more when properly packed and carefully gathered. So far as my experience goes, it commands a ready sale, and owing to its size the bushel is soon filled. Any Apple that sells well, picked direct from the trees, is more valuable than fruits that require store room. Even for home use Warner's King is one of the best. W.

Apple Warner's King.

NOTES ON PEAR CULTURE.

Some kinds of Pears may be grown in any or all aspects; good Jargonelle and other early kinds have been grown on a wall with a north aspect, but the fine late kinds require a better climate and a longer season of warmth, and a freer circulation of air than can be had from the north side of a wall. There is no doubt that the shelter of a wall does give increased size to the fruit, but I have met with many instances where the large, handsome fruit from an east or west wall has been inferior in flavour and melting qualities to the smaller specimens from pyramids or espaliers that are growing fully exposed. In our changeable climate there are seasons when a thick, heavy atmosphere prevails for many days together, and the sun is scarcely able to struggle through the clouds. It is in view of, and to meet, such times that I say plant Pears on walls; in short, plant them anywhere and everywhere there is something to train the branches to. If there is no space for a full-sized tree, plant a five-branched palmette, and if there is only a foot or two vacant, plant a cordon. Let the early kinds occupy the worst aspects, and reserve the best places for the choice winter fruit that requires all the warmth possible to mature properly. The same rule holds good with regard to espaliers. Let all available space be filled up, and plant cordons and pyramids too wherever there are suitable positions. I am certain that no one having space for fruit-trees will regret planting good kinds of Pears, as their value in a commercial sense is greater than most other kinds of fruits. In planting these fruit-trees against a wall, leave 3 inches or 4 inches of space between the lower part of the stem of each tree and the wall. When planted close to the wall the stem has not sufficient room to swell, and it is no uncommon occurrence to see the tops of old Pear-trees forced from the wall by the pressure of the swelling ball at the base. It is well to have Pears on walls in every conceivable aspect. It is also a good plan to have Pears in the open border under all the conditions as regards training, aspect, etc, that I have noted, in order that some good fruit may be obtainable in bad seasons. Many instances could be given where the same kind of Pear varies so much in the same garden as to appear a different kind, owing to the influence produced by aspect and training. In planting a wall of Pears, unless the subsoil is dry and warm, the bottom of the border should be paved or concreted 6 feet wide from the wall, and the concrete, if that material is used, should be of sufficient thickness to be impervious to the roots—from 4 inches to 6 inches will suffice in most cases. The depth of soil should not be less than 2 feet for the palmette and cordon, or other small or moderate-sized trees, and 3 feet will not be too much for large-growing trees on the Pear-stock. The distances the trees should be planted from each other should vary according to the stock used, kind of training, etc. Pears on Pear-stocks trained horizontally will cover a large space. I have seen such trees covering 40 feet in length of a 12-feet high wall; but I do not believe in such trees. Generally speaking, I would rather have two or three trees occupying the same space. The same remark holds good with trees of all forms of training. Full-sized standards in the orchard may stand 20 feet or more apart if left to grow unchecked, but if root-pruned then less space will suffice, as after they are brought into bearing they make less wood. So it is with the pyramids. It is a cultivator's question. If he likes to lift or root-prune, the distance may be reduced; but if on the Pear-stock and full growth is permitted, 20 feet will not be too much; if moderately pruned, 12 feet will be enough. When grafted on the Quince the trees may be planted nearer to each other; though, of course, the treatment it is intended to give the trees must be taken into consideration. If lifted or root-pruned, from 4 feet to 6 feet will give space enough for years; but if an opposite course is followed, 8 feet or 10 feet will be better. Some allowance, too, must be made for character of the soil and the climate of the place, as these have an important bearing upon the trees' development. No practical man will lay down any hard-and-fast line, either for depth of border or the space a particular form of tree is to occupy, as such a course prevents a cultivator taking advantage of any particular situation, and making the most of his circumstances.

H. B.

Adonis amurensis.—In this we have a plant which will doubtless commend itself to all lovers of choice hardy flowers. Of its beauty there can be no two opinions when the established plants are seen. Apart from this, the species undoubtedly possesses a fine vigorous constitution. If it has a fault, it is that its flowers come just a little too early in the year. The growth is free and strong, in this respect surpassing that of the other known species of this small genus.

Sowing Boronia, Chorozema, and other seeds.—"Lady Amateur" will find the raising of the plants named in her query rather slow work. Most of them, under favourable conditions, would take three or four years before they reached the flowering stage. The Lotus would, however, probably flower in two years. All the seeds should be raised in heat.

OUTDOOR PLANTS.

PHLOX SUBULATA.

THE well-known Phlox subulata or setacea, perhaps better recognised under its English name of Moss Pink, is one of the most charming of rock plants. A native of North America, it has the advantage of being perfectly hardy, and is remarkable for its profuse-flowering habit. The accompanying illustration gives an excellent idea of the beauty of this plant, of which there are several varieties now in cultivation. The type has blossoms of a soft, rosy-pink; P. s. aldboroughensis has flowers of a pale pink hue; atropurpurea of a deep purplish-rose; Fairy has cream-white blooms; grandiflora, as the name implies, has large flowers of a mauve tint; Nelson is pure white with a pink eye; The Bride, which is the subject of the illustration, is also pure white, with a suspicion of red at the base of each petal; in Vivid we obtain crimson; while P. s. nivalis is snow-white. Phlox subulata, from its densely-tufted growth, forms an excellent carpeting plant, and is very effective when planted as an edging. It seems most at home in porous soils, peat and disintegrated granite affording it free root-run, whilst being retentive of moisture. Although delighting in a sunny position, this section of the Phloxes does not show its true form when grown in soil that becomes dust dry or cakes in hot weather. In the rock garden the stones always retain a certain amount of moisture, and it is in such a situation that these plants appear to the best advantage and form perfect sheets of blossoms. Cuttings strike readily in a cold-frame during the summer if afforded a slight shading.

S. W. F.

Phlox setacea The Bride. From a photograph by Mr. C. Mayor, Paignton, Devon.

Making a rock garden *(Raphael)*.—Rock plants do not thrive under the shade of trees. The rock garden should be situated in an open situation, not beneath overhanging boughs; but such spots as "Raphael" describes may be made beautiful with other subjects. The bank and waterside may be planted with Snowdrops by the thousand. I know of a spot where the steep banks and waterside paths are now lined with countless Snowdrops that form an enchanting picture. Then the wild Hyacinth (Scilla nutans) may be neutralised. In spring woods the silver boles of the Beech-trees are bathed in the spreading flood of the "Bluebells," one of the most beautiful sights in Nature. Primroses also should do well, and the more vigorous Narcissi, such as Horsfieldi, Golden Spur, Queen of Spain, Maximus, obvallaris of the Trumpet section; Cynosure and Stella of the Incomparabilis; and biflorus, Poeticus ornatus and Poeticus recurvus of the true Narcissi. Anemones may also be planted—the wild-wood Anemones and its lovely silver-blue variety Robinsoniana, as well as the blue Apennine Windflower. Of taller subjects, Solomon's Seal does well by the waterside in partial shade, as does the tall blue Monkshood (Aconitum napellus). German Irises often flower well in spots not too densely shaded, and the great Hydrangea-bushes nowhere show to better effect than when flowering around the feet of large deciduous Irises. Where the soil is fairly moist, Spiræas may be planted, the herbaceous S. Aruncus and the shrubby S. ariæfolia and S. Lindleyana, while the tall Plume Poppy (Bocconia cordata) is also very ornamental and a strong grower. In the peaty soil, Rhododendrons, Ghent Azaleas, and Kalmia latifolia should flourish, and very pretty effects are possible where these are tastefully grouped. In the opener and steeper parts of the banks a naturally-modelled outcrop of rock might be formed on which Arabis, Aubrietia, Megasea, and the stronger-growing rock plants might grow; but if the shade is at all dense much flower must not be expected. In other places hardy Ferns could well be made a feature; Hearts-tongues, Male Ferns and Lady Ferns, while the North American Ostrich Fern (Struthiopteris germanica) also flourishes in England and Ireland, and the Royal Fern (Osmunda regalis) is valuable for waterside effects. As regards the strong-growing weeds which are such a trouble to "Raphael," the best plan is to root out as much of them as possible this winter, and during the ensuing spring and summer to cut off every particle that appears above the ground. No plant, however rampant its growth, will long survive the immediate destruction of its every attempt at expression above ground. White Foxgloves also create a charming effect in such a spot as "Raphael" describes, and can be easily raised from seed. The Rose of Sharon flowers best in full sunlight, and in any open situation would, doubtless, succeed. From grounds so naturally beautiful all traces of formality should be carefully excluded. For this reason the path by which it is intended to connect the higher level with the riverside walk, should be preferably laid out on a gentle slope, without steps, unless the nature of the ground renders the use of these imperative. For the same reason, the proposal to edge the path with stones would detract from the atmosphere of unconventionality that should invest a woodland walk, whose verges are never too accurately defined by Nature. As to climbers, Honeysuckle grows well on trees, not too closely planted, and flowers freely in such a situation. Clematis montana is also well adapted for the same purpose, and is exceedingly beautiful when garlanding bough and trunk with its mantle of ivory-white blossom. It is far more effective when grown in this manner than when closely trained to a wall. The blue Passion-flower and its white variety Constance Elliot are rapid growers, and are only bare when changing their leaves in the spring. If the soil is impoverished it should be enriched previous to the planting of climbers, shrubs, and herbaceous subjects.

Violets in clay soil.—Will you tell me the best treatment for Violets in a clay soil, where Wild Violets grow very abundantly? I have all the best sorts and have given them plenty of manure, but the flowers are small.—HANS PLACE.

*** The clay soil should be lightened with leaf-mould, road-scrapings, lime-rubble, or other porous material until it works freely. It should be well dug up and enriched now, and at the end of April or commencement of May runners from the old plants should be set out in the prepared bed in lines 2 feet apart, the individual plants being 10 inches distant from each other. A good watering should be given if the weather is dry at the time of planting, and also during the summer if the sun is scorching and the Violets show signs of flagging. A mulch of well-rotted hot-bed manure is beneficial during the early summer, as are periodical waterings of liquid-manure. All runners should be carefully picked off as soon as they form, until the end of August, any showing themselves after that time being allowed to remain. Treated in this manner the plants should form good clumps, studded with flower-buds which will open in October, November, and the early spring, should the weather permit. Some varieties flower naturally in the early winter, while others do not expand their blossoms freely until the spring. In an open winter like the present, with a good collection, there ought to be flowers on plants in the open ground from September till April.

Clematis *(Reader)*.—As your district is not a particularly mild one we should recommend you to plant only those varieties that are thoroughly hardy. One of the best all-round sorts is unquestionably C. Jackmani. The flowers, though not particularly large, are borne with great freedom, and the colour is a mixture of violet and purple. C. Jackmani alba is one of the best white varieties, and almost as free flower-

ing as the first-named. Both varieties are good growers, and when in bloom are exceedingly attractive. The Clematis delights in a rich soil, and it is of great importance that perfect drainage should be provided. In spring a mulching of manure will be of great assistance to them. Frequent supplies of water should also be given, and when the flower-buds are being formed weak liquid-manure will be very beneficial. The plants may be trained up the porch by means of a trellis or wire. The varieties under notice should be pruned in November, and the wood cut down to within 9 inches or so of the ground.

A BEDFORDSHIRE COTTAGE.

The accompanying illustration shows a charming Bedfordshire thatched cottage, with a peep of the well cared-for garden in the foreground where many summer flowers luxuriate. Roses cluster over the simple doorway and Pelargoniums are flowering gaily in the diamond-paned window. It is a true English cottage and garden, far more interesting for its flowers than many larger gardens in which plants are formally set out and shown in a very poor way. We often discover bold and picturesque grouping in the cottage garden, and pretty effects from pleasing associations of colour.

A Bedfordshire cottage and garden in Wolmer-street, Ampthill. From a photograph by Mr. E. W. Billington, Hill View, Park-hill, Ampthill.

Planting beds (*Staffordshire*).—Alstrœmerias of the hybrid strain are very beautiful flowers, having delicate colour gradations ranging from crimson to cream. Planted 6 inches to 9 inches deep they improve in loveliness year by year. The hybrid Aquilegias are also especially charming, and a packet of seed will produce a quantity of plants. The seed should be sown thinly in a spare bed, and the strongest of the seedlings weeded out and thrown away, as these are always coarse and often double. The weaker seedlings develop into plants bearing graceful, long-spurred flowers, with perianths of purple, blue, slate colour, red, pink, and blush, and cups of white and every shade of yellow from palest sulphur to gold; some flowers are entirely yellow and some white. These should be planted in the quarters where they are to bloom in the autumn. A yearly sowing is advisable in order to fill vacancies and to admit of the abolition of plants that do not reach the required standard of excellence. The double white Sweet Rocket is an old favourite border plant, deliciously fragrant, and Coreopsis grandiflora is invaluable from its colour, a bright gold, as well as from the length of its flowering period, which extends for many weeks. The Iceland Poppies, white, yellow, and orange, are very ornamental, and produce a long succession of bloom. The Iris family is a host in itself. The Spanish Irises (I. xiphium), white, yellow, and blue, and the English Irises (I. xiphoides), purple, blue, lavender, and white, are both exceedingly decorative. In these sections care should be taken to procure only self-coloured varieties, and to plant these in clumps of one colour. In Flag Irises there are many beautiful flowers: Iris pallida and I. pallida dalmatica, with faint lavender tints; I. flavescens, light yellow; aurea, golden; atropurpurea, dark purple; florentina, grey-white; Princess of Wales, white; Madame Chereau, Celeste, Victorine, Queen of the May, Celeste, and many other ornamental named varieties. The beauty of these Irises is only appreciable when they are grown in masses, as they may well be in a border 34 inches wide. Here and there a clump of the Giant Oriental Poppy (Papaver bracteatum) would make a brilliant spot of colour, in front of which the white Japanese Anemone or Nicotiana affinis would, later on, hide the withering foliage. The old Lychnis chalcedonica has a bright effect in the summer-time, and the charming light blue Scabious (S. caucasica) adds a welcome note of colour to the garden. Of dwarf-growing perennials for the front of the border there are white Pinks, the Mule Pink, Napoleon III., with its vivid crimson blossoms; Gaillardia grandiflora, the scarlet double Geum (G. coccineum fl.-pl.), yellow Linum (L. flavum), Campanula turbinata, and the Tufted Pansies. A very effective large bed can be formed of the Ivy-leaved Pelargoniums Souvenir de Charles Turner, bright carmine, and Madame Crousse, salmon. The former colour, however, does not associate well with the scarlet of the so-called "Geraniums," whereas it blends not unpleasingly with the salmon of Madame Crousse.—S. W. F.

Sending out hardy plants in pots.—Great numbers of plants in 2 inch or 3-inch pots are sent out yearly in this way, and even if these, or the bulk of them, do not perish it is rather due to the endurance of the variety or the season of planting than to aught else. Under the circumstances it cannot be too widely known that the safest treatment for these pot-grown plants is to take them to a tub or tank of water, and, having thoroughly soaked them, wash all the soil from the roots without delay. This done, the roots should be disentangled with as little loss as possible. After the roots are freed they should be planted without delay, spreading them out more or less horizontally, and in covering with some old potting material a little care beyond the ordinary will be needed on account of the roots being twisted, or such like. The difference between plants so treated and others planted in the hard ball of earth as received is surprising, while to neglect so doing in those instances that require it is in reality to court failure or indifferent results. Even the most pronounced of fibrous-rooted subjects, as the Pyrethrums, Michaelmas Daisies, Sunflowers, Phloxes, Delphiniums, Hepaticas, etc., are best cleared of all the soil first, and much better if never put into a pot at all, the latter a very convenient cover for the sending out of single crowns instead of pieces of a sensible size. In many instances of alpines, of course, pots become more or less a necessity, and being to some extent grown in pots in collections, and with little fear of being pot-bound at all, are regarded as outside the above remarks. But with the more vigorous and free growing, it is not necessary, and for years I supplied from open ground splendid plants that would make half-a-dozen of those often sent out in pots. One of the greatest absurdities amongst pot-plants in this way is that of potting up single crowns of the common Hepaticas, that, kept a year, or possibly two, and then planted in the ordinary way, would possibly perish the first hot summer through lack of moisture. Delphiniums, Pyrethrums, and the Statices all quickly form a good deal of root-fibre, and care should always be taken to thoroughly liberate them prior to planting. This is even more essential with those subjects planted in early spring than with those autumn planted, as the greater moisture as well as the more extended season for rooting will afford opportunities for renewed root-action that spring-planted subjects would not enjoy. All the same, it cannot at any season of the year be regarded as either safe or prudent to plant in the hard, solid ball of earth as received, but with the soil thoroughly removed and careful planting there need be no fear of the results.—*Field.*

Poppies in succession.—I should be obliged if you would give me the names of the best Poppies to have a succession from May to August? Are there any perennial ones, or must I sow them every year? Or do they seed themselves? I like especially the big, brilliant sorts; and would you tell me if I ought to sow them in heat and then prick out, or if I could sow them at once in the bed? And when I ought to sow? —Lindsay.

*** There are many beautiful perennial Poppies. The Iceland Poppies (Papaver nudicaule), white, yellow, and orange, and their double forms. The graceful Welsh Poppy (Meconopsis cambrica), with its slightly pendent yellow blossoms. These commence to flower in May, but are rarely flowerless until late autumn. Then there is the giant Oriental Poppy (Papaver bracteatum), with its gorgeous blossoms, some a foot in diameter, of flaming scarlet, and the beautiful, but little grown, P. pilosum, with its apricot-tinted blooms. These two Poppies, though their flowering season corresponds with that of the Flag Irises, give occasional flowers throughout the autumn. Other perennial Poppies, or so-called Poppies, are the Californian Bush Poppy (Romneya Coulteri), an exquisite white crêpe-like flower with a golden mass of stamens and sweetly scented, and the blue Himalayan Poppy (Meconopsis Wallichi). Of annuals there are the Opium Poppies, of which the best is the single white, the well known "Shirley" Poppies, and the Danish Poppy Danebrog, so-called after the banner of Denmark. The first four of the perennial Poppies here mentioned and the annuals bear seed freely, which may be sown as soon as ripe in the open ground, removing to their flowering quarters in late autumn or early spring. Do not sow now, as the ground is too cold for the seed to germinate. Procure seeds and sow in the late spring. When your own plants flower and seed they will provide more than sufficient for your wants.

Megasea Stracheyi.—This is perhaps one of the handsomest of this beautiful race of plants so far as its flowering is concerned, and yet it must be admitted that its beauty is considerably lessened by the fact of its being somewhat tender and nearly, if not absolutely, a deciduous kind. The handsome blossoms are fine indeed, but to see these to the best advantage some foliage is needed also. The strictly hardy kinds with persistent foliage are among the handsomest of hardy subjects all the winter long, and seen in established masses or in beds, or draping the sides and margin of a rugged bank, or providing the margin to a fine belt of Rhododendrons, are productive of an effect peculiarly their own. M. Stracheyi is now blooming finely in the cool greenhouse, where its handsome flowers quickly attract attention.

Phlox Drummondi.—Remembering the long season over which this annual flowers, it is surprising that it is not much more largely used for summer bedding than it is. Gardeners get so much into the habit of depending for a summer show on plants of semi-perennial though tender nature propagated by cuttings, that many singularly lovely things easily raised from seed get overlooked. Few of such plants bloom

longer or have more dwarf compact habit than have the annual Phloxes. Wonderfully pretty are masses of them as seen in seedsmen's trial grounds, where varieties are numerous. Most of them, especially those of compact yet spreading habit, have fine flowers borne in exceeding profusion of rose, carmine, red, crimson, and other rich hues. When strong plants are put out into good, deeply-worked soil at the end of May and about 9 inches apart they soon grow into a dense mass and bloom with exceeding profusion late into the autumn. Seed should be sown in shallow pans about the second week in April, and stood in gentle warmth. The seedlings need to be dibbled out into other shallow pans or into boxes thinly, and be kept growing till it is safe to expose them outdoors to harden before planting out.—A. D.

THE SNOWFLAKES.

THESE pretty flowers are allied to the Snowdrop, and though there are several species in cultivation, two only are generally known, these L. vernum and L. æstivum (the Summer Snowflake). The Acis are now, however, grouped with them, so we have L. autumnale, better known to many as Acis autumnalis. The species and forms given in the Kew list are L. æstivum, L. autumnale (Acis autumnalis), L. hyemale (Acis hiemalis), L. pulchellum, L. trichophyllum (Acis trichophylla), and variety grandiflorum, L. vernum, and variety carpaticum. The

SPRING SNOWFLAKE (L. vernum) is one of the prettiest of spring hardy bulbs, and may be associated with the Winter Aconite and the Snowdrops, of which Galanthus Elwesi is the finest. This Snowflake succeeds well on the higher tiers of the rockwork, and, as is well known, carries its flowers on a stem about 6 inches high. Snowdrops and Snowflakes succeed well in a light, well-drained soil. The variety L. carpaticum blooms a few weeks later,

The Spring Snowflake (Leucojum vernum).

and its flowers expand when leaves and stalks are just above the ground, while the petals are tipped with yellow and not green.

SUMMER SNOWFLAKE (L. æstivum) is very

Autumn Snowflake (Leucojum (Acis) autumnale).

vigorous, the stems about 18 inches in height, the flowers white, drooping, and tipped with green. By shrubbery margins, at the base of orchard-trees, and in similar spots this species will succeed.

LEUCOJUM (ACIS) AUTUMNALE.—What a graceful little plant this is when doing well and flowering freely. It is somewhat delicate, requiring therefore a little care. The soil must be well drained, sandy, leafy soil suiting it best, and choose a warm sheltered spot to plant it in The flowers are medium-sized, white, faintly diffused with rose, becoming more intense towards the base of the segments They are borne from three to eight on a longish stalk, and droop.

Pruning Azaleas.—A good deal of misconception exists touching the amount of cutting back that Indian Azaleas will stand or, in fact, require. On taking charge of some very ragged and ungainly-looking specimens a few years since, I was requested to try and tie them into shape a little, and rather astonished my employer by applying the garden shears rather vigorously. The end in this case justified the means, for by placing the plants in a vinery then at work and keeping the syringe among them during the summer, they made a capital growth, clean and full of flower. It is quite a mistake to be tying these plants in every season, twisting and contorting the branches in doing so. By all means tie any loose shoot into place a little, but let the plants grow freely and naturally. An extra strong shoot or two may be pinched while growing and will break again in plenty of time to form flower-buds. A nicely-balanced and regular specimen will by this means be built up, and the regular flow of sap all over the plant will cause the production of flowers equally all over. Many cultivators are averse to cutting even the smallest bit of wood with the flowers, but this does no harm, provided the plants are healthy at the roots and are encouraged to make a vigorous growth after blooming.—R.

Rondeletia amœna.—The value of the genus here named for free and almost continuous flowering in some species is well known to gardeners generally. The species here named, however, may not be specially noted for its freedom in this respect, though it is unique when the snowy purity of its beautiful wax-like blossoms is taken into consideration. Its flowers are produced in a rather dense, compact, pyramidal panicle, somewhat after the manner of the Lilac, and the white form here referred to should well repay attention for forcing into bloom at this season. The flowers are singularly chaste and beautiful, and a close inspection reveals greater beauty than is at first apparent.

STANDARD FUCHSIAS.

WELL-GROWN standard Fuchsias, with handsome heads and stems of varying height, are very useful in any garden, but especially so where a lofty conservatory has to be embellished. This structure is often a source of much vexation when attached to a large mansion, inasmuch as there must nearly always be one dark side attached to it. In its erection architectural harmony is, of course, and no doubt properly so, the first consideration, but the result is a house ill-adapted for the healthy growth of anything except Ferns, Palms, or Camellias. Place well-grown specimens of almost any other greenhouse plant in it, and they will quickly deteriorate. Perhaps the most satisfactory method of dealing with such houses is to employ for the shaded part plants of a dwarf evergreen character, chiefly Ferns, that will maintain a permanent undergrowth, as it were, so as to hide the pots, and among which flowering plants can be grouped or interspersed at all seasons. Here standard Fuchsias might be introduced with the best effect, their sumptuous drooping heads of bloom encircled by the surrounding foliage, at once attracting attention. As regards

CULTURE, if kept growing during the summer in a genial temperature, and shifted into larger pots as required, all the stronger-growing sorts may be, in two seasons, made into handsome specimens. In the formation of standard Fuchsias it is only necessary to allow the leading shoots to grow without stopping until the desired height for the stem is reached, pinching off all the side growths as they appear, and leaving five or six of these intact at the top of the stem to form the future head. The shoots thus left must also be "stopped" above each pair of leaves until a sufficient number has been obtained to form a symmetrical head. The same plants may be grown for many years in succession by cutting the old wood well back and shaking out the old soil from the roots and repotting in the same size pot each spring. Old dwarf plants also having straight stems may be easily in one season converted into very good standards by trimming up the stems; when they break into growth train up the strongest upright shoot, and remove all others. It is important that the supporting stake for each plant should be strong and sound at the bottom, as should that give way the weight of the

The Summer Snowflake (L. æstivum).

falling head will instantly snap the stem, and so all the labour bestowed will be lost. Those who may not have grown standard Fuchsias hitherto are strongly advised to give them a trial, for if in good condition they are very beautiful.

TREES AND SHRUBS.

MAGNOLIA GRANDIFLORA.

The Magnolia family comprises a host of really useful and beautiful flowering trees and shrubs. M. grandiflora, the kind here illustrated, is a stately evergreen tree, which in its native habitat grows to a height of from 70 feet to 90 feet. Whether regarded for its large smooth bright green leaves, or the beauty of its white cup-shaped flowers, which fill the air with a delicate perfume during July and August, it is unsurpassed, and stands out as one of the most valuable members of the genus. Even when out of flower it is handsome by reason of its distinct foliage, and in winter it is very cheerful. Unfortunately, it is not in every garden seen in a flourishing condition. A very sheltered part of the garden should be selected for it, but it will be found safer to plant it against a wall, provided plenty of head room is available. It succeeds best when planted in good turfy loam, enriched with leaf-mould or peat-earth, facing south or south-west, and on no account should it be planted in a cold, wet, or badly-drained soil, with a north or north-east aspect, as the cold spring winds are more destructive to it than frosts of ordinary severity. In planting, care should be taken not to injure the roots, as it is not a very good plant to move unless it is in a small state. The roots should be spread out in every direction, so that they may be enabled to take up nourishment on all sides. When planting is completed a good watering should be given to settle the soil about the roots, and if dry weather should ensue the plants will derive much benefit from frequent supplies of water. It does not require very much pruning, but when it is necessary to prune very early spring or immediately it has done flowering is the best time. AJAX.

Flowers of Magnolia grandiflora. From a photograph by Mr. W. Wilkins, St. Germans-road, Forest-hill, S.E.

Eucalyptus citriodora.—This species of Eucalyptus is very different from the Blue Gum (E. globulus). In both of them the young leaves are totally distinct from the mature foliage, those first produced by E. citriodora being covered with glandular hairs, which, when gently rubbed, emit a very pleasing odour, like that of the Lemon-scented Verbena (Aloysia citriodora). As the specimen develops, smoother leaves are produced, in which the fragrance is much less pronounced. In its young state this Eucalyptus grows quickly, and it is then much appreciated in the greenhouse by reason of its agreeable perfume, but in the neighbourhood of London it is terribly affected by the sulphur-laden fogs which often occur during the winter months. After twenty-four hours of such fog I have seen thriving specimens look as if they had been exposed to a fiery blast, and soon all the leaves drop, while most of the plants quickly succumb. Eucalyptus globulus is, in a young state, also much injured by these fogs.—T.

Pruning shrubs (*Mrs. Berry*).—All the shrubs you mention are spring and early summer-flowering sorts—consequently, pruning should be deferred until after the flowering of each is over. The straggling shoots should be shortened and the thin growths in the centre of the plants thinned out so as to allow a free circulation of air, as it is of the greatest importance that the shoots should be well matured to ensure a good display of blossom. The Polygonum may be cut down now.

How to propagate Garrya elliptica (*H. E. Walker*).—This favourite winter-flowering shrub can be propagated in various ways—*i. e*, by cuttings, by layering, and by seeds. The first-named method is the one most generally adopted. Cuttings of half-ripened shoots should be taken off during the summer and planted in well-drained pots of light soil, and placed in a warm, close case. They should be watered two or three times a week, and shaded from the sun on bright days. If a warm case is not available they will root, though not so readily, in a cold-frame, or under a hand-glass on a warm border. Layering is simple, and can be done successfully in July or August. Shoots of the current or previous year may be selected. The part that is layered should have the leaves removed, and a slit an inch long should be made through a joint. A peg should then be driven into the soil to keep it in place, and the whole covered with soil and well watered. When seeds can be procured they are best sown in sandy soil, and placed in a gentle heat to hasten germination.

How to propagate Clematis (*N. A.*).—There are several methods by which the Clematis can be propagated, but only three are in general use—*i.e.*, by seeds, by cuttings, and by grafting. The seeds should be sown in shallow pans of light soil and stood in heat, and the soil kept moist by watering with a fine-rose watering-pot. Cuttings of the young shoots taken off before they get too hard, and inserted in sandy soil and placed in a gentle heat, root readily. Grafting is the method adopted where large quantities of plants are raised. Cleft and splice-grafting are very successful, and April is a very good time for the operation. Fleshy pieces of the roots of C. Flammula or any of the commoner sorts should be cut up into lengths about 5 inches. When the scions have been secured by matting, the roots should be planted into small thumb pots and plunged in a bed of tan in a warm, moist propagating-case.

Pink Hydrangea (*Scottish Reader and a Constant Reader*).—As you have not given us the name of the Hydrangea you refer to, we cannot say for certain how it should be treated; but from your meagre description we should say it belongs to the Hortensia group. If so, the growths may be cut back now and the plants grown on in a mixture of rough fibrous loam and leaf-mould, to which a little peat might with advantage be added. Good drainage and an abundance of water during the growing period are essential, if the best results are to be obtained. A sunny position should also be chosen, as the plants delight in a good share of sunshine, so that the shoots may become properly ripened.

Height of shrubs (*E. A. Simpson*).—Corchorus grows to a height of about 4 feet, Cydonia 6 feet, Althæa 5 feet, and Cerasus Chamæcerasus from 2 feet to 4 feet. They are all quite hardy shrubs, and would grow well and flower freely in pots provided they get proper treatment. See that the pots are well drained and the mould sweet and good. Plenty of water must be given them while growth is being made, and the plants stood in an airy, sunny position.

Birch-tree covered with Ivy (*M. N.*)—It is now a struggle for the survival of the fittest, and as your Birch is in such a bad state and the Ivy so full of health and vigour, it seems to us that the best plan would be to let the Ivy have its way. If the Ivy were removed from the stem and branches of the Birch, what would the last-named look like? If, by so doing, its health and beauty could be restored, then by all means take it away; but not otherwise. Ivy should never be allowed to climb up the stems of good trees.

RHODODENDRONS.

I think there are possessors of either a small or large garden who would like to see them beautiful, but who either do not know how to make them so or are unable to spend much money upon them. At a very slight cost, however, they might have a garden more interesting and beautiful than the gardens of many large places where they are "kept up" in an expensive, gaudy, and wholly uninteresting way.

Many have little idea how beautiful the Hybrid Rhododendrons are, or how varied their colours, from darkest crimson, brightest scarlet, the loveliest shades of rose and pink, whites and creams, some almost self, and others blotched with brown or yellow. Anyone who has a long border could plant a row of these at the back of it, at about 2 yards apart, and if they were procured from a good nursery garden, as they certainly ought to be, quite nice, bushy flowering plants would be sent for about three shillings each. At first they would make very little show, but many of them would have beautiful trusses of flowers on them at their flowering season, and as a collection they would be interesting from the first. The more so, too, because so few people have a collection of Rhododendrons, and it would be highly improbable if there was another anywhere in the neighbourhood. After a time this row of Rhododendrons would be a really glorious sight, and they grow more rapidly than is generally supposed. As to the soil, if you have not a naturally peaty one, and you can afford it, there is no doubt Rhododendrons like peat, and it would assist them if you added some to that part of the border in which they will root. If, however, you buy good flowering, strong growing hybrids, they will grow and flower quite well without peat, though I am sure they prefer a light soil (and some manure added to it to start with). They grow in a heavy one, I know, but if they are to be planted in a soil which is not peaty one thing I strongly advise—buy them from some nurseryman who grows his plants (after he has planted them out, previous to their going to you) in ordinary garden soil, without peat in it.

So much depends upon their being well rooted, too, to begin with, and in the selection made. Some fine kinds are straggling growers, others hardly flower at all, and some have very little

constitution, and even with the best of treatment hardly condescend to either grow or flower at all. On the other hand, there are scores which flower and grow as well as one could desire, and as I have been making a study of the various kinds and their habits, I feel I can be of some assistance to those who do not know which are the best kinds to buy.

There is no way so likely to bring disaster and disappointment as by making a selection at shows, where the plants have been grown especially for exhibition and have had exceptional treatment. A great many people are led into this mistake by the beauty of the flowers they see, but "once bit twice shy," and when I want a collection of any special plant or shrub no shows or catalogues for me! One may see new kinds at the shows and feel interested in them; but take my advice and see those kinds after they have been grown under ordinary circumstances before you purchase them yourself.

Very suitable subjects to plant under the Rhododendrons would be Tufted Pansies, one kind in each bed. And of these for this purpose I recommend Archibald Grant, Duchess of Sutherland, Ardwell Gem, and William Neil.

London Pride is another thing which answers well for this purpose, covers the ground, and looks light and pretty when in bloom. But, if London Pride was used, I should underplant with Snowdrops, Scillas, early Tulips, Grape Hyacinths, Crocuses, and small-growing, early spring-flowering bulbs; and I should keep one kind of bulb in one bed, and another in another. (Indeed, if these beds were mine, I should have them all full of Crocuses or early Tulips, one named kind in each bed, as, personally, I prefer a collection of one thing to a patch here and there of many things. But this is entirely a matter of taste, and either way would really succeed equally well.)

Arabis is another of the things which could thus be used and underplanted with bulbs of this kind. In one way, Arabis is preferable (especially if Crocuses, Snowdrops, or Scillas were selected). It would flower after these were over, and yet before the mid-season or late-flowering Rhododendrons were in bloom, and the London Pride sends up its feathery pink spikes at the time the Rhododendrons flower. The colour of the London Pride harmonises well with the red and pink shades of the Rhododendrons, but by planting Arabis instead there would be a longer season during which the beds were gay with flowers.

Forget-me-nots would make a cover for the soil, look well when in bloom, and could be thus underplanted with bulbs. It is of small matter which of these plants is chosen. The Arabis and London Pride would be permanent, the Forget-me-nots would replace themselves by seed and thus also give a permanent effect; but the Pansies want replanting in the autumn, pulling to pieces, and firmly planting again well up to their crowns.

It is not wise to disturb the soil in which shrubs are planted, although it is a common practice to turn over the surface of shrubbery beds. It is an easier way of treating such beds, of course, than to lightly stir them, and occasionally top-dress with manure; but the latter is the better way, and if a little of the care which is bestowed upon an ordinary garden Cabbage or Onion was given to valuable and beautiful shrubs there is no doubt they would benefit by it in quite equal proportion.

So I think Arabis, or London Pride, or Forget-me-nots are perhaps better for the Rhododendron than Pansies. The bed, having been well manured to start with, will get on very satisfactorily for some years without further nourishment. I know by experience that this kind of planting of the surface round them does them no harm; but as the roots of the Rhododedrons would be below the Pansies (if the latter were planted in a prepared soil slightly raised above the level of the bed, and this soil, which ought to be a mixture of leaf-mould, good soil, manure, and some sharp sand, was renewed every autumn when the Pansies were replanted) I do not think the Pansies would do any harm to them, and if anyone who had not a large garden wished to combine these two plants the effect would be good.

As to the size of the bed, I should let it be about a yard across and round in shape. The Rhododendron would only be a small shrub with from five to seven or eight little stems at first, and if the bed was dug and liberally treated for about a yard deep there would be plenty of good prepared soil for it to flourish in for some years—indeed, until it had obtained a thoroughly good start.

In recommending Rhododendrons I shall name first those which I think most highly of, though I shall not name one which I have not seen growing sturdily and flowering freely in ordinary garden soil. The colours are good (or, at any rate, are so in my opinion!)

Lord Ongley is a good dark crimson, with a large truss of flowers which are freely borne. Mrs. W. Agnew is pale rose in colour, and beautiful in every way. The Queen is a free-flowering white, with a yellowish blotch, and Fair Helen is another white which is especially good. Helen Waterer is very bright crimson, and so is B. W. Currie, though the latter bears rather small flowers; there are a profusion of them, and their colour is a brilliant shade of red. Fleur de Marie is bright rose, and Sigismund Rucker is a beautiful crimson with a dark blotch. Lalla Rooke, a darker one, is of a more plum-coloured shade; and Lady Frances Crossley is a rose-coloured one and very pretty. Lady Rolle, creamy-white with a dark blotch, is another I can very highly recommend; and Marie Stuart is a mauve, which has beautiful flowers of a lovely shade; it does not resemble the old Ponticum in the least. Michael Waterer is a good crimson, and so is H. W. Sargent. Barclayana, Alexander Dancer, Achievement, Baroness Lionel Rothschild, Henry Bohn, Lord Derby, Mrs. Fitzgerald, Mrs. Milner, Sir William Armstrong, and Sir Charles Napier are all good, and shades of rose or red, and Sherwoodiana is a beautiful and desirable light rose variety. Old Port is a peculiar shade of plum, and flowers quite as freely as the others I have named, and Baron Shroeder is another very desirable plum-coloured variety, though of a different shade. Baroness Lionel Rothschild has rather smaller flowers of a bright crimson colour, and is in every way good; and Concessum, though it does not flower so freely as the others, grows well and is a very pale pink. Stella is another pale one, very good; it flowers freely, but has a smaller flower than Concessum. The Bride and Snowflake are both fine whites, and so is Sappho; and Mr. George Hardy and Mrs. Russell Sturgis are both excellent white ones with dark spots. Manglesi is another very good white, and Baroness Shroeder, Countess of Cadogan, Everestianum Fastuosum flore-pleno, Lady Eleanor Cathcart, Lady Greville, Lady Howe, Lady Tankerville, Mrs. Charles Leaf, Sir Thomas Sebright, and Sir William Armstrong all flower freely and are of robust habit.

I have only mentioned those which I know to be really satisfactory. Mrs. Jocelyn.

Hedge for dry bank (*J. M. Jeatles*).—The position is a rather difficult one to deal with, for in addition to the soil being little more than a sandy bank, it is in some places overhung by large trees. Taking all points into consideration, we should recommend any of the following: English Yew, Arbor-vitæ, and Thuja Menziesi. The oval-leaved Privet, Euonymus, and Myrobella or Cherry Plum would answer. The Laurel, Holly, and Hornbeam are also very good.

Leggy Broom (*Balnacarron*).—The extent of the cutting down will depend largely on the age and size of plants. If they are not too old they will break away from the bottom. If you cut them down now you will lose a season's display of bloom. Better wait until after the flowering period is over.

Lenten Roses as cut flowers.—I have had these flowers kept perfectly fresh for ten days by this method. When treated in the ordinary way they would not have lasted as many hours. The stems should be slit vertically for about 2 inches or 3 inches. A second cut at right angles to the first, dividing the stalk into four strips, may also be made if desired. Many other flowers which are usually short-lived in water may be treated similarly, especially the large-flowered Clematises, such as C. lanuginosa and its varieties, which will last when split for a long time, and if faded will rapidly recover. These if not split are almost useless, as they die nearly as soon in water as out of it.

A FLOWER SHOW IN EGYPT.

The third annual show of flowers and vegetables of the Cairo Horticultural Society was held in the suitable gardens of the Esbekieh quarter of that town. The flowers suffered from the very cold season and also from the early date—which was necessary owing to the fact of Ramadan occurring earlier this year than usual. For the first time also the authorities wisely joined the agricultural show with it. Large and highly ornamented tents as are usual in Egypt were arranged round the central lake. In our walk round, we commenced on the left of the entrance opposite the Boulac-road, and here we found pens of very fine poultry. Many of the Brahmas had been hatched and reared in Egypt and would appear well in an English poultry show. Artificial incubation, which has been the custom in this country for thousands of years, has however apparently caused great degeneration in the size of both fowls and eggs. The Daira Sanieh had erected an entire "kiosk" of Sugar-cane, and inside were specimens of molasses, alchohol, and sugar in the various stages of refinement from "foots" upward. In one very large tent was a splendid assortment of Cotton of many kinds, and grown in various districts, some pure white, others a shade of yellow. One specimen of "rovings" and some woven material were shown.

Feathers and engraved ostrich-eggs from the ostrich farm, near Cairo, were also exhibited. Indian Corn was freely exhibited, and was varied in colour from black, red, speckled, orange, to pure white, and the size of the grain differed somewhat.

Timber of various kinds from trees originally brought from India and now grown in Egypt showed how well they succeed in the country, as we noticed "Sissoo" and others well known in India as good timber. A whole set of office furniture sent by the pupils of the Government School showed a variety of woods and excellent workmanship, the inlaid work being of Lemon-wood.

A block of Casuarina equisetifolia (Tree Horse-tail) showed the grain, rough-planed, varnished, and stained, and by its side was a pretty unvarnished and beautifully-made table, exhibited by Mr. E. A. Floyer, who also proved by the contents of two neighbouring cases that fresh and important commercial development was possible in the Gum Arabic trade.

The pupils of the Agricultural College were busily engaged making the best of butter, from the separation of the milk, the churning, etc, up to the prettily-stamped pat ready for sale. The vegetables sent from the college and grown by amateurs and by professional gardeners were universally considered a very fine show. Among the Potatoes we noticed a small dish of "Sutton's Black," which was more curious than attractive.

There was also a kiosk entirely made by the inmates of the Cairo prisons, and included woven materials, also rustic flower-stands. The last tent was a fairy-like grotto, with waterfall and gold-fish, and garden with foliage plants—Lily of the Valley, Violets, Hyacinth, white Lilac, and "floored" with Adiantum. This was erected by Prince Hassan, uncle to the present Khedive, and he is an enthusiastic gardener. The gardeners and what we should call the labouring classes were much interested in a plant of Brussels Sprouts, a hitherto unknown vegetable in this country. There were some fair Roses, but the unusual cold of this season was against them. All honour to the committee for the useful work they are accomplishing.—Salf, *Cairo, Egypt*.

Plants in flower outdoors in Wexford.—Having read with interest accounts of the great variety of flowers in bloom in the open at present, I would mention two in flower here not alluded to in other reports. Arums, grown in a large clump in a pond, and crimson Rhododendrons in two situations. Of course we have the usual spring flowers, including Daffodils (Tenby) and Polyanthus Narcissus, and Lobelias flourishing in borders all the winter; also climbing Nasturtiums in blossom.—Wexford.

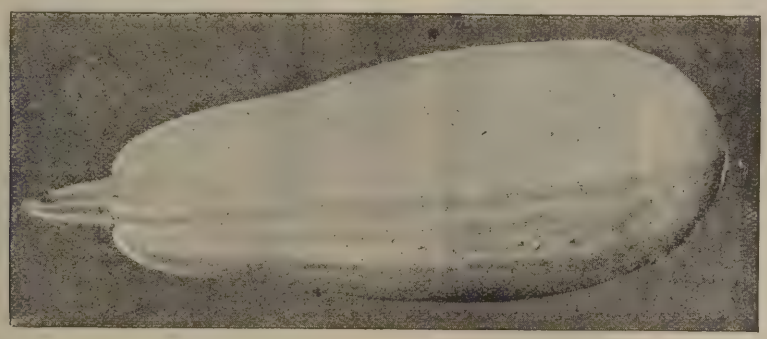
Rare and interesting plants.—We shall be pleased if any of our readers will send us examples of these either for illustration or comment. Flowers travel best with wet Moss round the base of their stems. Cotton wool should never be used for packing. Photographs also of interesting subjects will be welcome.

THE KITCHEN GARDEN.

VEGETABLE MARROWS—WHY SO MANY FAIL.

Few amateurs fail with Marrows as regards their growth, but many do not get a full crop. The plants receive too liberal treatment, and hence make far too much growth and set few fruits. Many growers will now be selecting their varieties for next season, and as this phase of the subject was considered fully on p. 588, it need not be repeated here. The variety illustrated—Moore's Vegetable Cream—was briefly described, and it is certainly one of the best Marrows grown, an excellent free-fruiting variety of medium size and fine flavour. The fruits are oval in shape, cream-coloured, and a very free setter, thus making it a most prolific variety. There is no want of good Marrows, but much depends upon how they are grown.

We now come to the common mode of culture—viz, the usual hot-bed system. The hot-bed is satisfactory as a start, but at the finish is the cause of many plants failing to fruit. We see acres of these plants in fields grown by market growers with only a little help at the start giving heavy returns, but the plants are not allowed to cover much ground with a stray fruit here and there—quite the reverse. They are allowed a certain space, fruits are cut regularly, and not allowed to get too large. The Marrow is at its best as a vegetable before the seed matures, as then it is fit for table. We do not leave Peas, Beans, and other vegetables to seed before using—why Marrows? They should be eaten when young, and the plant is then less



Marrow Moore's Vegetable Cream.

exhausted and can furnish fruits in greater quantities. I am aware that for market such fruits would be too soft, and would show every bruise, but when one grows their own Marrows there is no need to have them past their best or in a seedy, pithy condition, as is often the case.

The result of growing Marrows upon large heaps of manure is that it encourages a coarse or gross top-growth and few fruits. Although in some gardens it may be necessary to grow Marrows on large heaps, my advice is curb root-growths by chopping round the plants at a certain distance from the roots. I have adopted other ways with success—viz., by inserting a large pot or making a restricted root space. I am aware that in some gardens Marrows are grown as screens to hide other portions of the garden. In some cases, of course, my note does not apply; but the best results cannot naturally be expected under such circumstances. Some of the best fruit I ever had came from an old heap of soil chiefly composed of wood-ashes and burnt garden refuse; but the fruits were gathered when quite young.

To get profitable results stop all leading or strong shoots after the plant commences to fruit, and also thin out small, useless, or side shoots. Indeed, this regular cutting is the secret of success. Let the plant make a fair growth, then give fruit, and feed freely. So far I have found nothing to equal liquid-manure from stables as food, and it may be given three times a week if diluted to plants in fruit. Another equally good practise with plants freely exposed is to damp overhead after a hot day; and I advise free exposure. Plants under shades or trees are a failure. I have seen many plants covered with mildew given a rich root run and grown in the shade. In wet seasons it is well to pay unusual attention to stopping and thinning. W.

THE CULTIVATION OF HORSE-RADISH.

There is a great demand for this root, especially during the winter months, and whether required for market or private use, it well repays cultivation. Many grow it in the worst corner of the garden, and the result is that when required for use only coarse, knotty, and ill-flavoured roots are to be had. In many places where more careful attention is given it, the method adopted is not that which gives a quick return of high-class roots. The old plan that we used to adopt fifty years ago was to trench the ground from 24 inches to 30 inches deep. Mark out beds 4 feet wide and have walks 18 inches wide between four rows of sets. Make holes with a wood dibber 15 inches or 18 inches deep where the roots are to go, and take a cutting from the top of the root with the crown-bud and about 4 inches of the root. Drop these into the holes, and the result will be good straight roots. Two seasons' growth is necessary to get them of a suitable size. But if the following simple method is adopted, splendid roots, as straight as arrows, from 12 inches to 16 inches in length and from 4 inches to 6 inches in circumference, can be produced in eight months. Select an open sunny situation and give the soil a fairly good dressing of stable or cow-manure. Dig a good spade deep, mark out beds 3 feet wide, with walks 11 inches between, and dig out 3 inches or 4 inches of soil out of the walks and place on the beds. Then make them neat with spade or rake. Select some straight young roots and cut them into lengths; from 12 inches to 15 inches is a suitable length. Cut them off square at each end. No crown is required, and carefully remove any small roots or roughness from the sets with the back of a knife. The roots are best about the size of the little or second finger. Next take a straight flower-stake, or iron rod, about the length of the sets, and make holes a foot apart on both sides of the beds in a horizontal direction. About 2 inches beneath the surface of the bed carefully insert a set in each hole, leaving the end of the sets even with the opening of the hole. Nothing more is required but to keep the beds free from weeds throughout the summer. The first week in February is a capital time to plant. The roots will be fine by the end of September.

H. Ellis.

Mushroom-beds and lime.—It does not appear that the Mushrooms actually "care" for lime (see Gardening, December 18th, p. 608), which does not afford them any nutriment; but Dr. Repin explains that calcareous material in the casing of the bed has a specific physical effect on the spawn, when this is passing through it, in causing it to lose the loose, filamentous form which it exhibits when running through the manure, and to collect itself into thickish, cord-like processes, from the extremities of which, when they reach the surface of the casing, Mushrooms are produced. The lime in the casing appears to act specifically in arresting the running of the spawn in a filamentous form and bringing it into a condition of development in which fructification will very soon ensue. Ocular demonstration of this can be given with spawn and alternate layers of manure and calcareous soil placed in a large glass vessel.—W. M.

ORCHIDS.

CULTURE OF CERTAIN ORCHIDS.

(In reply to Mathew Alderson)

Your newly-imported plants of Dendrobium Dalhouseanum, D. densiflorum, D. fimbriatum, D. Farmeri, D. nobile (Wallachi), D. moschatum should be placed in pots just large enough to hold them, the pots being filled up to their rims with crocks, making the plants quite firm by tying the tallest of the pseudo-bulbs to neat sticks. Afterwards place the plants in a moderately cool, dry atmosphere, and afford little or no water for about a week, then the crocks in which the plants are placed should have water poured through them about every other day. As soon as the young growths and roots have fairly started, a few of the crocks may be removed, and peat and Sphagnum Moss may be packed firmly around the base of each plant. Then give them generous growing treatment in a hot, moist, stove-like temperature. D. ochreatum, better know as D. Cambridgeanum, should at first be treated as for those above mentioned; but as soon as growth commences it should be placed in the cool-house. When the flower-buds appear it should be removed to the stove to open its flowers and to complete its growth. D. infundibulum requires a light position in the cool-house the whole year round; plenty of root-moisture is essential at all times. The Aërides should be placed either in pots or Teak-wood baskets, which should be three-parts filled with drainage, surfacing up to the rim with freshly gathered Sphagnum Moss. These plants require the warmth of the stove or East Indian-house. During summer, which is their growing season, sufficient water is necessary to keep the Moss on the surface fresh and green, but in winter very little is needed. Bulbophyllums also require warm, moist treatment. They thrive best when suspended close up to the roof glass on the shady side of the house. Shallow pans or Teak-wood baskets are the best receptacles to grow them in. They will root freely if planted firmly in well-drained peat and Moss. When growing they delight in plenty of root-moisture, while at rest they require but little water to keep them in a plump condition. Cœlogyne barbata, C. corymbosa, and C. corrugata will grow well in peat and Sphagnum, but as neither species makes any large quantity of roots, the pots or pans used should be as small as is possible to get the plants into.

An intermediate temperature will suit them admirably. C. ocellata grows best when placed in a shady position at the warmest end of the Odontoglossum-house. It requires plenty of root-moisture at all times. For the requirements of C. cristata see answer to "A Beginner." Cymbidium giganteum, C. Mastersi, and C. eburneum should be grown in a cool, moist, shady corner of the intermediate-house. Being strong, free-rooting subjects, they require rather large pots, which should be one-third filled with drainage. Over this place a thin layer of Moss. Use for the compost one-half fibry loam, the other half consisting of peat, leaf-mould, coarse silver-sand, and Sphagnum Moss. Pot them as one would an ordinary greenhouse plant, leaving a good space on the surface to hold water. When well rooted Cymbidiums require plenty of water, especially during the summer months. Phaius grandifolius and P. bicolor should be potted in the compost recommended for the Cymbidiums. They require liberal and frequent waterings during their season of growth, but during the resting period only sufficient water should be given to keep the compost moist. The warmest part of the intermediate-house is the proper place for them. As regards Phaius tuberculosus, this requires the highest temperature available in houses. The imported rhizomes should be laid upon damp Sphagnum Moss. When they commence to grow it will be necessary to pot them. Use rather large pots, which should be filled to two-thirds of their depth with drainage, over this place a layer of peat, upon which the rhizomes should be laid, filling up around them with fresh, green Sphagnum. Afford plenty of root-moisture always

and keep the plants well shaded from the sun at all times. Thunias require the same kind of compost as the Cymbidiums. Until growth commences keep the plants quite dry. When the young shoots appear water may be afforded, but sparingly, until the plants become re-established, when abundant supplies are necessary. Give them the lightest position in the plant stove. Aracnanthes also require a warm temperature; pot them as advised for the Aërides. If the plant is a tall-growing variety, it will be advisable to train it up a raft made of Teak-wood, around which it will cling and thrive luxuriantly. Keep the stem of the plant well moistened by syringing it once or twice daily. W., *B.*

Cœlogyne cristata *(A Beginner).*—The name of your Orchid is Cœlogyne cristata. This useful species will succeed in any house where an intermediate temperature is maintained. It should occupy a position in the house where it can obtain plenty of light, but not strong sunshine. When grown too shady the spikes rarely produce their full complement of blooms. When the plant is in full growth it should be thoroughly watered each time the compost becomes dry; but unless the new bulbs are fully made up less water should be given—in fact, only sufficient is necessary to prevent the bulbs from shrivelling. The proper time to repot plants of this species is at the end of March or the beginning of April. The compost for this purpose should consist of a mixture of fibrous peat, turfy loam, and Sphagnum Moss in equal proportions, adding a fair amount of broken crocks to keep the soil free and porous. If properly attended to as regards shading, watering, etc, the plant will make strong, healthy, flowering growths.—W. B.

Cypripedium bellatulum.—I am convinced that many growers keep the atmosphere too moist around this plant, the moisture settling on the leaves at night, to their detriment. A few small plants purchased at a sale last season in very bad condition have been growing in a Melon-house quite close to the hot-water pipes, and they have the best of foliage on them now, with flower-spikes on most of the growths. Possibly this may be an exceptional case, but it shows that the plants will thrive without much atmospheric moisture, and it is well known that this often causes injury to the leaves.—R.

Angræcum eburneum virens.—This plant is smaller in all its parts than A. eburneum, the leaves seldom attaining more than 1 foot in length, the flower-spikes also being shorter and more arching. The flowers are similar in shape, have green sepals and petals, the lip green with a white centre. Grown in the East India-house it will give very little trouble and is constant and regular in blooming. It may be grown in fairly large pots half filled with drainage, the compost consisting of Sphagnum Moss and charcoal. It delights in copious supplies of moisture all the year round, both in the atmosphere and at the roots, the latter being seldom at rest.

Lælia Dormanniana.—Plants of this now in flower have a bright and telling effect among other Orchids. Owing to a certain likeness to Cattleya bicolor and Lælia pumila, it is supposed by some to be a natural hybrid between these two species. Whatever its origin, it is well worth growing, the olive-tinted segments with the reddish purple markings and the bright and telling lip being quite distinct from anything else now in bloom. The stems are slender and somewhat cylindrical, bearing a pair of roundish leaves, from between which the flower-spikes issue. It may be grown in rather small pots or baskets in equal parts of peat and Moss at the cool end of the Cattleya-house.

NOTES FROM ARGYLLSHIRE.

THE weather has been most favourable for winter flowering plants, as it has been, and is now, very mild. To testify to the effect of the same we may make mention of the fact that on the Rhododendron banks here Rhododendron Nobleanum and its varieties have been flowering freely since the 1st of December and are now masses of scarlet, rose, etc., dotted throughout the banks which brighten the surroundings in this dull season. Should weather be favourable, they will convey a wealth of beauty to the pleasure grounds for some time to come as well as the dinner-table. These banks are well sheltered from the north and east winds by deciduous shrubs and trees, Pinus sylvestris, and under these are Hollies and Laurels, which form a good protection against these cutting winds.

HAMAMELIS ARBOREA.—In the shrubbery this beautiful deciduous shrub is now very attractive with its pale yellow flower-clusters on the leafless branches. G. S. MACDONALD.

Poltalloch-gardens, Argyllshire.

HOUSE AND WINDOW GARDENING

ROSE CUTTINGS IN WATER.

(IN REPLY TO "ROSA.")

ROSE CUTTINGS strike readily, especially such as belong to the hardier and stronger-growing kinds. Our illustration represents a mode of striking cuttings of this kind in bottles of soft water, a plan as simple as it is practicable, inasmuch as cuttings taken off at any time during the summer will root in this way in from five to six weeks, after which they should be potted carefully, and placed in a cold-frame for a week or so, until they become established, when they are quite ready for planting out in either beds or borders. The bottles may be of any convenient size, and may be placed on shelves in the greenhouse, in a frame, or even in a sitting-room window, the attention they require being less than that bestowed on cuttings inserted in pots in the usual way.

Rose-cuttings in water.

Hardy annuals for border.—In "S. W. F.'s" interesting answer to "M. J.," *re* "Hardy Annuals for Border," in the current number of GARDENING, No. 985, he writes as though such annuals as Asters, Petunias, Stocks, Zinnias, etc., would germinate and produce flowers if sown in the open border. I have always understood that artificial heat is required for germination of the same. As an old reader I should like to know if I might expect a full crop of flowers here in Derbyshire, and when they would be expected to bloom if I followed out "S. W. F.'s" instructions and sowed my seed as he advises towards the end of April, and whether I might expect the flowers to be equal to those transplanted from the hot-house? I have no doubt large numbers of your readers are as interested in the matter as I am myself.—A. W.

*** As regards "A. W.'s" query concerning the advisability of sowing the tenderer annuals in the open ground, instead of pursuing the usual method of raising the seed in hot-houses or hot-beds, much depends on the nature of the soil, climate, and situation. In heavy or damp soils, in cold climates, or in exposed or shady spots, I should not advise open-air sowing. In warm, open loam in the south-western counties, and in genial, sheltered situations, I have seen Asters, Petunias, Stocks, and Zinnias flower well in the autumn from seed sown at the end of April. Naturally these seedlings should be accorded every attention. The soil should be enriched with spent hot-bed manure, and well and deeply worked. Seed should be sown thinly, and the seedlings vigorously thinned out as soon as easily handled. In dry weather copious waterings should be given, and in the summer a mulching of well-rotted manure and leaf-mould should be added. At the time of sowing, as much care should be taken to get a smooth and fine surface as if the seedlings were to be raised in heat. Of course, the planted-out seedlings will for some time appear far in advance of those sown in the open bed, but the former, however carefully put out, always receives more or less of a check; whereas, those sown where they are to bloom, if their seeds are never neglected, keep growing uninterruptedly from germination to their flowering period.—S. W. F.

ROSES.

Gloire de Dijon Rose *(J. P.).*—It would have been better had you pruned your Roses earlier, and had put in portions of the wood as cuttings then. Still, it may not be too late, especially if you make the cuttings of hard wood. Let them all have a clean, even cut, close under a leaf-bud or joint, and have about two leaves above. That may mean a length of some 8 inches or 9 inches. You may plant these close under a south wall or fence, setting them half their length into the soil, and adding to the bottoms some sharp sand. If hard weather comes, lay some Fern or leaves amongst them. Or you may set them into pots 8 inches wide, putting eight cuttings into a pot and keeping them in a frame or greenhouse. Use plenty of sand in the soil. Do not use green wood, as that will be soft, pithy, and useless.

Aphis on Roses *(G. B).*—All Roses under glass, especially grown in heat, are peculiarly susceptible to attacks of green-fly, and these pests can only be kept in check by frequent fumigations.

Roses for border.—I have a border 6 feet wide and 80 feet long. Can anyone advise me of the best class of Roses to plant it with—three colours—one to blossom in June, one July, and one August and September, and most profitable for bouquet cuttings? Also a few of the most profitable annuals for cutting throughout the season?—C. W. T.

*** For bouquet cutting the old General Jacqueminot and Jules Margottin, Hybrid Perpetuals, crimson and carmine respectively, should suit "C. W. T." These would bloom in June, while Tea Roses would keep up the supply through the autumn. Good varieties of these for cutting are Hon. Edith Gifford, flesh-white; Catherine Mermet, flesh-pink; Madame Lambard, salmon-rose; William Allen Richardson, orange-yellow; and Ma Capucine, orange-red. The latter is only semi-double, and must therefore be cut in the bud state. As regards annuals, there is often a good demand for the blue Cornflower, while Stocks, Wallflowers, Forget-me-nots, Coreopsis lanceolata, and C. Drummondi, annual Gaillardias, Scabious, Asters, Sweet Peas, Sweet Sultan, and Mignonette, should find a sale, though annuals, when there is a good supply of handsome perennials in bloom, do not, as a rule, fetch remunerative prices.

Sternbergia Fischeriana is among the very earliest flowers of the year, and, so far as can be seen at present, likely to prove an acquisition. The blossoms, which are of the richest golden hue and rather larger than S. lutea, expand in the earliest days of February. The blossoms appearing with the foliage should make it a welcome addition to the spring flowers for the rock garden and like places.

Music in flowers *(Music).*—We do not quite understand your question. We have heard of such things in fairy tales.

CHRYSANTHEMUMS—STOPPING AND BUD-RETAINING.

IN reply to queries from "W. H. P.," "E. N. P.," "J. T. R.," "Constant Reader," "Signor," and others, we are able to supplement the lists published in GARDENING for January 15th and 29th. Readers will find those varieties not mentioned below in the lists previously published. Considerable time would be saved if our correspondents would compare their lists with those already published. Regarding the difference of time in commencing stopping as applied to readers in different parts of the United Kingdom, we can only refer to our remarks on page 700, in our issue of January 29th last.

Names.	*When to stop.*	*Which bud to retain.*	*Feeding required.*
E. Molyneux	Natural break and pinch these July 1	First bud after July pinching	Liberal
H. L. Sunderbruck	End April	First crown	Liberal
Pallanza	Natural break	Second crown	Fairly liberal
Comte F. Lurani	Natural break	Second crown	Moderate (small pot)
Coronet	End March	Second crown	Liberal
Lady Fitzwygram	Natural break	Terminal (severely disbud)	Liberal
Cullingfordi (reflexed)	First week April	Second crown	Liberal
Beauty of Exmouth	First week April	Second crown	Moderate
W. G. Newitt	April 10	First crown	Fairly liberal
Mme. Chas. Capitant	April 10	Second crown	Moderate
Mons. Gruyer	April 15	Second crown	Liberal
Golden Gem (decorative)	Natural break	Terminal for December and January display	Liberal
Alberic Lunden	Natural break	Second crown	Fairly liberal
Belle Mauve	Natural break	First crown	Liberal
Mrs. A. Harris	Variety not known		
Baronne de Buffieres	April 10	Second crown	Liberal
Helen Bloodgood	Last week March	Second crown	Fairly liberal
M. B Spaulding	First week May	First crown	Liberal
Mons. H. J Jones	First week April	Second crown	Liberal
Mr. E G. Whittle	First week April	Second crown	Moderate
Mrs. C. H. Payne	April 15	Second crown	Liberal
Bronze Queen	Variety not known		
General Hawkes	Natural break	Late crown or terminal	Fairly liberal
Mme. Eulalie Morel	Natural break	Terminal	Moderate
Beauty of Sholing	Natural break	Second crown	Liberal
Duchess of York	First week May	First crown	Fairly liberal
Mrs. W. S. Trafford	April 10	Second crown	Liberal
Gold Dust	First week April	Second crown	Fairly liberal
Le Colasse Grenoblois	April 15	Second crown	Liberal
Mme. C. Molin	First week April	Second crown	Moderate
Miss M. Blenkiron	End March	Second crown	Liberal
Mons. Geo. Biron	April 10	Second crown	Fairly liberal
Mons. Hoste	Natural break	Second crown	Moderate
Robert Flowerday	Second week May	First crown	Liberal
Mlle. A. de Galbert	End March	Second crown	Moderate
Mons. G. H. de Clermont	April 15	Second crown	Liberal
Noces d'Or	April 10	Second crown	Fairly liberal
Mons. Chas. Molin	April 10	Second crown	Liberal
Lady E. Saunders	First week May	First crown	Moderate
Princess Victoria	End April	First crown	Moderate
Miss Ethel Addison	End March	Second crown	Liberal
Vice-Pres. Audiguier	April 10	Second crown	Moderate
Edith Rowbottom	Variety not known		
Mrs. Bruce Findlay	Second week May	First crown	Fairly liberal
Mr. H Broomhead	First week May	First crown	Liberal
Ryecroft Glory	Natural break	Terminal	Liberal (gross feeder)
M. Cambon	Natural break	First crown	Liberal
Ernest Fierens	First week April	Second crown	Moderate
Pelican	End April	First crown	Liberal
Soliel d'Octobre	Natural break	Second crown	Liberal
Chas. Blick	May 7	First crown	Liberal
Mrs Chas. Blick	First week April	Second crown	Fairly Liberal
Chas. Shrimpton	Third week April	Second crown	Liberal
Lilian Bird	End April	First crown	Moderate
James Myers	Second week May	First crown	Liberal
Julia Scaramanga	April 10	Second crown	Liberal
L'Isere	First week April	Second crown	Moderate
Milano	Natural break	Second crown	Liberal
Mephisto	April 10	Second crown	Liberal
Royal Standard	End March	Second crown	Not too liberal
Mrs. W. Blake	Variety not known		
John Neville	End March	Second crown	Liberal
Lord Justice Lopes	Second week May	First crown	Liberal
Indiana	First week May	First crown	Liberal
Royal Sovereign	First week May	First crown	Liberal
Falaria	End March	Second crown	Liberal
Miss Rita Schroeter	First week April	Second crown	Liberal
M Alf. Recoura	First week April	Second crown	Fairly Liberal
Mrs. J. Lewis	April 10	Second crown	Liberal
Tuxedo (decorative)	Natural break	Late crown	Liberal
Amos Perry	Third week May	First crown	Liberal
Ponderosum	First week April	Second crown	Liberal
Mrs. Chas. Keyser	First week May	First crown	Liberal
Mrs. G. W. Palmer	April 15	Second crown	Liberal
General Roberts	First week April	Second crown	Liberal
Owen Thomas	Third week May	First crown	Moderate
A. H. Wood	First week April	Second crown	Liberal
Mrs. Richard Jones	First week April	Second crown	Fairly liberal
W. Wright	End April	First crown	Liberal
C W. Richardson	April 10	Second crown	Liberal
President Armand	April 15	Second crown	Liberal
Mrs. Libbie Allen	End March	Second crown	Not too liberal
Sir E. T. Smith	Second week May	First crown	Liberal
Eugene Dailledouze	End March	Second crown	Liberal
Robert Owen	End April	First crown	Liberal
Mrs. E. G. Hill	Natural break	Second crown	Fairly liberal
Surprise	First week May	First crown	Not too liberal
W. E. Rosette	April 10	Second crown	Moderate
INCURVED.			
Mme. Ferlat	End March	Second crown	Liberal—grow 6 to 8 blooms on each plant
Hero of Stoke Newington	First week April	Second crown	Moderate
Mrs. S. Coleman	End March	Second crown	Not too liberal
Prince Alfred	Second week April	Second crown	Not too liberal
Empress Eugenie	Natural break	Second crown	Moderate
Lady Dorothy	First week April	Second crown	Moderate
Jardin des Plantes	Early March	Second crown	Liberal
Alfred Salter	Second week April	Second crown	Moderate
W. Tunnington	First week April	Second crown	Not too liberal
Ami Hoste	End March	Second crown	Moderate
Refulgens	End March	Second crown	Moderate
C B. Whitnal	Early March	Second crown	Not too liberal
Mlle. Lucie Faure	End March	Second crown	Fairly liberal—grow 6 blooms to each plant
Miss Dorothy Foster	First week April	Second crown	Not too liberal
Miss Violet Foster	First week April	Second crown	Not too liberal
Rose Owen	Third week May	First crown	Moderate
Duchess of Fife	Second week March	Second crown	Not too liberal
Lady Isabel	End March	Second crown	Liberal—grow 6 blooms to each plant

Chrysanthemums—how to obtain eight good blooms on each plant (*J. H.*).—We have carefully considered the system of culture which you have laid down in your letter to us, but it seems far too complicated for us to appreciate fully. You cannot well do better than follow the instructions which will be given under the heading "Chrysanthemums for market," paying particular attention to the first method of culture as recommended for the ordinary mid-season sorts—November-flowering varieties. By following the lines laid down there you will see how easy it is to get nine good flowers on each plant from second crown buds. Do not use pots which are very large. Those known as sixteens should answer your purpose in most instances. Only the very strong rooting sorts need a 10-inch pot.

Chrysanthemums—stopping or natural break (*Chrysanthemum*).—You will see your varieties included in the table in this issue or among those in two previous issues of recent date.

Plants for north border.—I shall be glad to have a list of plants suitable for a mixed border, facing north, with a high wall with fruit-trees for a background, and consequently rather shady, but very warm. Also information as to the proper way of raising ordinary bedding plants—I have a small greenhouse (heated) and another unheated—and when to sow, soil, temperature, etc?—M. P., *Colchester*.

*** "M. P." does not give length nor width of border. Presumably it is at least 4 feet wide. This will afford room for taller plants to be planted at the back, and those of dwarfer growth at the front. In a rather shady bed, if the soil is fairly rich and of sufficient depth, Lilies should succeed admirably. Good garden varieties are L. umbellatum and L. davuricum, orange-red, dwarf; L. croceum, orange; L. excelsum or testaceum, buff; L. candidum, the well-known Madonna Lily; L. Martagon album, white; L. chalcedonicum, scarlet; L. auratum, white, banded yellow; L. tigrinum splendens and L. t. Fortunei. Herbaceous Pæonies should also flourish in a warm, partially shaded border. Many of the double and single varieties of P. albiflora are very beautiful, such, for instance, as Agnes, Mary Kelway, Eugène Verdier, Jeanne d'Arc, Leonie, Madame Lebon, Reine des Français, and a host of others. Lilies and Pæonies associate well together, the leafage of the Pæonies sheltering the young growth of the later Lilies. In front of the Pæonies and in close proximity to their roots the finer Trumpet Narcissi will be effective, handsome varieties of which are Emperor, Horsfieldi, Empress, Maximus, and Golden Spur, while of the incomparabilis section, Sir Watkin, Stella, Cynosure, and Barri conspicuus will prove a good selection. The Narcissi are in bloom while the Pæonies are throwing up their carmine shoots, and later on their withering leaves are hidden by the spreading foliage. The tall, light-blue Delphiniums are striking plants for the back row, as are white herbaceous Lupines, perennial Sunflowers, H. multiflorus, Soleil d'Or, H. lætiflorus, and H. rigidus Miss Mellish; the best of the Starworts or Michaelmas Daisies, such as Robert Parker, Archer Hind, Harpur-Crewe, and Puniceus pulcherrimus, and Japanese Anemones; while giant Oriental Poppies and the old scarlet Lychnis chalcedonica make a brilliant display in the summer. Other choice perennials that may be utilised are Hybrid Alstrœmerias, the Peach-leaved Campanula (C. persicifolia alba), and its double variety, Achillea Ptarmica fl.-pl., The Pearl, Coreopsis grandiflora, Day Lilies, Doronicum plantagineum excelsum Harpur-Crewe, Erigeron speciosus, Geum coccineum fl.-pl., Gypsophila paniculata, the double white Rocket, the Lyre-flower (Dicentra spectabilis), Libertia grandiflora, the Sea Hollies, Eryngium amethystinum and E. Oliverianum, Gaillardia grandiflora, Platycodon Mariesi, Rudbeckia Newmanni, Scabiosa caucasica, and Statice latifolia; while the Flag Irises give a wide selection of colour, ranging from the white of Princess of Wales to the deep purple of atro-purpurea. Good decorative varieties of this section of Iris are florentina, flavescens, aurea, pallida and pallida dalmatica, Celeste, Darius, Mme. Chereau, Queen of the May, and Victorine. The term bedding-plant

covers rather a wide area. Annuals are naturally raised from seed, such as Coreopsis Drummondi, Eschscholtzias, Annual Gaillardias, Godetias, French Marigolds, Stocks, Sweet Sultans, and Shirley Poppies being sown where they are to bloom, while Asters, Lobelia, Salpiglossis, and Zinnias are generally raised in heat and planted out later on. Pelargoniums of the Zonal and Ivy-leaved sections are raised from cuttings, wintered under glass, and planted out in the early summer. Tuberous Begonias are grown from seed sown in heat in January, and are planted out in June. A mixture of finely-sifted peat, loam, and silver-sand in equal quantities forms a good compost for seed-pans.

GARDEN PESTS.

Cineraria-leaf diseased *(G. P.)*—The disease on the enclosed Cineraria-leaf is caused by the grubs of the Marguerite Daisy-fly (Phytomyza affinis), which burrow between the skins of the leaves. The best way of destroying this insect is by holding the leaves up against the light and pinching them where the grubs are seen to be. If a leaf is very much injured by these insects it is better cut off and burned.—G. S. S.

Difference between solitary and common wasps *(Amateur)*.—The solitary wasps are smaller and more elegantly-shaped insects than the common wasps. They make their nests in holes in wood, walls, or in the earth, and sometimes make use of keyholes. One species makes small mud-covered nests, which they attach to twigs of Heath or some other plant. They are decidedly useful insects, as they feed their grubs entirely upon small insects, grubs, etc., and I have never heard of any injury to fruit or flowers being imputed to them.—G. S. S.

Grubs in soil *(G. Riddell)*.—The grubs you sent are those of a fly—I believe of the St. Mark's-fly (Bibiomarci), or some nearly allied species. They are injurious to the roots of plants. It seems almost impossible to make any insecticide reach with fatal effect insects that are in the ground. It is so absorbed by the soil that the amount that reaches the insects is of no use.—G. S. S.

Centipede—a pest destroyer *(W. H. H.)*.—The creature you sent was a specimen of the common centipede (Lithobius forficatus). This centipede is decidedly useful in gardens, feeding entirely on animal food, small insects, grubs, etc.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2727—**"Summer at mid-winter."**—In the above article on Jan. 15, page 664, "Lady Amateur, Berks," kindly offers to give "cultural directions for plants suitable for winter blooming in greenhouse," for which I shall be most grateful. My greenhouse is only 7 feet by 7 feet. Would she discard Camellias just out of bloom?—LADY AMATEUR, *Salop*.

2728—**Growing Cotton**—I should much like to know how to grow Cotton from seed—what heat and soil it requires, and whether the seed is best steeped in water or not before sowing?—M. L.

2729—**The best double white Zonal Pelargoniums.**—I wish to confine myself to one variety of double white Zonal Pelargonium, and should like very much to have the opinion of readers of GARDENING ILLUSTRATED as to the best all-round variety for general purposes?—NEMO.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2730—**Vaporiser** *(B. V. N. Williamson, etc.)*.—Apply to Mr. Richards, 124, Southwark-street, London.

2731—**Old double Primroses** *(Primroses)*.—We should write to Mr. Hopkins, Mere Cottage, Knutsford.

2732—**Momordica** *(W. Bates)*.—The Momordicas are stove annual climbers, belonging to the Gourd tribe, and should be raised from seed in the same way as a Melon. The flowers are, as a rule, yellow. Sow seeds at once in heat.

2733—**Cleaning ground of weeds.**—To clean ground of seed weeds and Groundsel the soil, as "Fair Play" suggests, should be deeply trenched when occasion offers in late autumn or winter, the top layer, in which the weeds are rooted, being skimmed off and buried at the bottom of the trench.

2734—**How to propagate White Jasmine** *(N. A.)*.—We presume you mean the summer hardy flowering kind named Jasminum officinale. It is readily increased by cuttings of young wood taken off in August and dibbled in sandy soil and placed in a close frame. It will be necessary to protect them from the sun, and to water them with a fine-rose water-pot occasionally. In the following spring they may be planted out in the open ground in soil composed of loam and good leaf-mould. Water should be given during dry weather.

2735—**Euphorbia** *(J. M.)*—The article referred to in GARDENING ILLUSTRATED of Jan. 8 related to Euphorbia jacquiniæflora. "J. M.'s" plant is Eupatorium riparium, which has white flowers. It is an easily-grown cool-house plant, whereas the brilliant-flowered scarlet Spurge (Euphorbia jacquiniæflora) is a hot-house subject, and its successful culture by no means simple for amateurs.

2736—**Begonias** *(W. B.)*.—It is much too early for you to start your Begonias now, unless you have good accommodation. March is plenty early enough. Do not divide the roots. Simply take off young shoots and plant them in peaty soil, and if placed in a warm case roots will be emitted in a week or so.

2737—**Grease-banding trees** *(F. H. F.)*.—This work should be done in the autumn, say end of September or early in October. It is useless to perform it now, as the season for the ascent of the moths into the trees is quite over. The stems of the trees, 3 feet from the ground downwards, should be rough scraped and brushed hard, then bands of stout brown paper, 9 inches wide, should be bound on tree tightly round the stems 18 inches from the ground, and be daubed over with any coarse grease, with which may be infused Stockholm tar, or alone. The whole of the paper surface should be coated, as in that way the female moths are caught as they climb the trees to deposit their eggs. A little fresh grease may be added from time to time to keep it sticky. Leave the bands on till the end of the year.

2738—**When to divide Arum Lilies, etc** *(G. M.)*.—The usual time for dividing Arum Lilies, when these are grown in pots all the year round, is at the annual potting in the late summer. If, however, an increase of flowering plants is required in a short time, the suckers may be removed during the spring, and grown along through the year, when they will attain flowering size in considerably less time than if the other method were followed. Where the plants are removed from their pots and planted in the open ground during the summer the suckers may conveniently be removed at the time of planting.

2739—**Peach buds dropping** *(Mrs. G.)*.—If your Peach-tree is of the early Alexander variety, then bud-dropping is not with it at all uncommon. Still, in your case, it may be some other variety you complain of, and if so, then very likely the soil in which it is growing is very dry. It should not be difficult with the aid of a fork to ascertain its condition. The soil should be fairly moist all the winter, as well as during the summer. Outdoors it is, as a rule, much damper in winter. Give a good soaking now, then again two days later, and see that it is a good watering, two or three bucketsful being given each time. We shall be pleased to hear result.

2740—**Poor lawn** *(A. G. H.)*.—What you propose to do to renovate your lawn is very good; but we should first have it well mowed with a coarse bush harrow, or a very fine-toothed harrow, or well disturbed with a close tooth rake—that will help to loosen the surface. The soil you propose to use for dressing should be clean and fairly fine, free from stone and weed seeds. If you were to obtain from the Kingston sewage works a few hundred-weights of native guano, which is not dear, and mix that with double its bulk of soil, it would help very much. It is not a strong crop manure, but it does admirably for Grass. Get this dressing on in March—that is soon enough—and sow the Grass seed early in April. Apply to a good seed firm for Grass seeds suitable to your soil, stating that you are merely renovating, nature of soil, and extent. They will then send you a suitable mixture. The following year give a thin dressing of sulphate of ammonia, mixed with road grit, and an occasional one of soot.

2741—**Camellia buds dropping** *(Mrs. G.)*.—Camellias that have become very dry at the roots, whether planted out or in pots, commonly shed their buds. You do not say whether yours are in pots or not; but if they are, two or three successive soakings of water will be needed to thoroughly saturate the hard ball of roots; indeed, several soakings may be essential. It is possible that doing this at once may save the remaining buds. In any case it is still needful to enable the plants to make new growths, and when that is complete the plants may be all the better for being shifted into larger pots, or if the present pots be very large, then into wooden tubs made stout, and painted, so as to endure for some years.

2742—**Cutting turf** *(T. J.)*.—Your question came at an awkward time for an immediate reply. Whatever may be the ruling price in Wales, we find the common charge for cutting lawn turves about London is from 2s. to 2s. 6d. per 100. Much depends on whether the pasture be old and good, and cutting is easy or otherwise. Turves are invariably cut 3 feet by 1 foot, thus there are three to the square yard, and about twenty one to the square rod. As to laying, that can hardly be stated, but we should think, provided cartage was not included, that this work should be done at about 1s. per 100, as that may go on rapidly, so much depends on the way the turves have been cut, the solidity and evenness of the ground on which to be laid, and the skill of the worker; also, to some extent, the prevailing rate of wages in your locality. It is our rule to reply to questions only through these pages, as it is assumed a reply to one correspondent may have some interest for many readers. Questions often have the merit of raising subjects not treated in the usual way.

2743—**Greenhouse walks** *(Quero)*.—Flooring of a greenhouse with stone, brick, or cement is best where only plants in pots are grown, as in hot, dry weather, or where there is of necessity much fire-heat, it is easy to keep the floor damp and generate moisture. If you have a Vine in the house planted inside, then the roots need all the available space as border. In any case, if you wish to have dry, hard walks only, nothing would be better than flags of Victoria or Imperial stone, such as are used for street paving, these being laid on a bed of mortar; or, if preferred, you can get a load or two of sharp gravel. Sift out all the fine sand, and remove all the largest stone, then mix with the best rubble one bushel of cement to six bushels of stone, and lay that 4 inches thick, and from 2½ feet to 3 feet wide. Where you want your walks to be well trodden down, then mix with the sand one bushel of cement to three bushels of the other, and coat over the rubble 1 inch thick with that mixture, and you will soon have capital hard paths.

2744—**Plants for lean-to greenhouse** *(Querist)*.—As you wish to raise from seed plants that will flower in a cold greehouse the same year, you had better confine your attention to annuals. A propagator is very well for starting seeds, but it does not do to keep seedlings in such an arrangement for any length of time. If they could be moved into a warm-house they would keep growing on unchecked, but the shift into an absolutely unheated house would be certain to retard their progress for a time. This precludes the idea of growing Cyclamens, Primulas, and such like plants, which want to be grown on fast to flower the same year. There are, however, many annuals that make a fine show in a cold-house, if well grown. Asters of the different sections, Balsams, Godetias, Petunias, single and double, Stocks, Annual Chrysanthemums, blue Lobelia, Mignonette, Musk, and the large-flowered Mimulus, Marguerite Carnations, annual Gaillardias, Phlox Drummondi, Salpiglossis, Bartonia aurea, Nemesia strumosa, and Phacelia campanularia, while in large pots and boxes Sweet Peas may be grown. In spring there is nothing better for beautifying the cool greenhouse than bulbs, such as Roman Hyacinths, Double Daffodils, Trumpet Narcissus, and Polyanthus Narcissi, with a few good Tulips, and some pots of Freesias; these latter do best under perfectly cold treatment, and are then in bloom by the end of March.

2745—**Artificial manures** *(S. H. S.)*.—Out of scores of highly recommended chemical manures offered for sale, all no doubt excellent, we cannot recommend any one specially. You had best consult our advertising columns. Any good manure should contain phosphates, potash, and nitrogen in considerable percentage, the two former especially being good manure for Vines, whilst all in combination make excellent manure for plants.

2746—**Worms in pots** *(Reader)*.—These pests in pots, though of so much service in the open ground, can be destroyed by two or three applications of soot or lime water. Place 2 quarts of either, quite fresh, in 2 gallons of water, stir it well, and let it remain, but occasionally stirred, for twenty-four hours; then apply it to the soil in the pots just as an ordinary watering. Very often one such application suffices.

2747—**Early Peas** *(Mrs. H. W. P.)*.—You may sow early Peas at once. Chelsea Gem, 2 feet high, or American Wonder, 15 inches high, especially if sown on a warm border, will do admirably. Sow of Long Pod Beans the early Long Pod also now in rows 2 feet apart, and the Beans 4 inches apart in the rows. Of later Peas sow the Daisy, and of Beans Johnson's Wonderful. In a shady place most vegetables will grow somewhat weakly. Rhubarb does best, but you may have some Cabbages, Dwarf Beans, short Carrots, and dwarf early Potatoes. Have the ground well manured and deeply dug, so as to give your crops ample root room.

2748—**Cucumber in cold-house** *(Constant Reader)*.—The best hardy Cucumbers are Syon House Prolific and Telegraph. You must not expect in a cold-house to get enough of sun-heat for Cucumbers till the end of May. To grow them early they must have artificial heat. Melons of any kind will grow only in a very warm house, with some 60 degs. to 70 degs. of heat at least. If your Vines shade the house very much, Cucumbers will make weak growth, and do very indifferently.

2749—**Seedling Orange plants** *(J. B.)*.—As your seedling Orange plants are but three years from the seed and only 2 feet in height, you may continue to grow them on in pots until they bloom naturally. Grafting may be done in March by cutting the plants down to clean stems a few inches high, then getting nice stout wood from good trees, affixing them to the stocks in the usual way. But that is hardly work for an amateur, as it may fail, and you would lose all. Better grow the plants on, shifting them, if needed, into pots a size larger than the present ones are, using a compost of sweet turfy loam, two-thirds, the rest being peat-soil, leaf-soil, and sand. Keep the plants close after potting for a week or two, then in June stand them outdoors in a partly shaded place to harden their summer shoots. No doubt they will bloom in a year or two. Keep them very clean.

2750—**Sweet Violets unsatisfactory** *(Anxious)*.—A bed should now be prepared for the Violets. This should be deeply trenched and enriched with rotted manure. In April a surfacing of spent hot-bed or Mushroom-bed manure mixed with leaf-mould should be spread on the surface, and runners taken off the old Violet-plants. These runners should be planted in rows 2 feet apart, the individual runners being 10 inches distant from each other. If dry at the time of planting, give a good watering, following this up whenever the plants show signs of flagging during the summer. About midsummer another mulch of spent hot-bed manure will prove beneficial, the roots of the plants coming to the surface and running in this freely. Applications of weak liquid-manure during the period of growth will also tend to promote vigour. All

runners should be carefully removed from the plants till the end of August, and by the close of September the clumps should be large and well studded with buds, which will expand freely through October and November if the weather remains open, the plants flowering again in the spring. In a mild winter, such as we are now experiencing, Violets have flowered almost uninterruptedly since September. On no account should the old beds be allowed to remain a second year, but the routine here recommended followed each season.

2751—**Greenhouse plants** (*Merone*).—To furnish a new greenhouse or conservatory it will be needful for you to purchase plants from a florist, such as Pelargoniums, Show, or large-flowered, Zonal, Ivy-leaved, and others, Fuchsias, Abutilons, Genistas, Cinerarias, Azaleas, and similar things, and afterwards you can propagate many of them by cuttings. Then you may get seed now, and shortly sow in warmth Balsams, Celosias, Coleus, Stocks, White Tobaccos, Phlox Drummondi, and other seed-raised plants, and in that way soon have your house gay.

2752—**Young Vine** (*F. E. C. E.*).—As your Vine is bleeding or wasting sap, you had better at once shorten it back to one-half its length, as a rod 12 feet long the first year will result in your getting no fruit the following year. So soon as you have cut back, have some sealing-wax and a candle at hand, and well cover the wound with the hot wax; or you may get painter's knotting, but you must spare no effort to stop the bleeding. You should induce every eye or bud to start, and if more than one lateral comes from a bud remove the weakest. Then when bunches show select the finest five and pinch out all the others. If you find that your fruiting laterals are too crowded by the barren ones, pull some of these latter out. In any case they must be pinched back to about the same length as the fruiting ones—that is, the second leaf beyond the bud. The leading shoot you should allow to grow as long as it likes, cutting that back to some 3 feet or 4 feet of new hard rod next winter.

2753—**Hardy plants which commence with initial letter N** (*E. J. S.*).—You may try the following perennials, the names of which commence with the letter N: Neillia opulifolia, hardy white-flowered shrub from North America; Nematostigma (Libertia) grandiflora, belonging to the Iris tribe, white-flowered, New Zealand; Himalayan Ground Ivy (Nepeta spicata); Sweet-scented Tobacco-plant (Nicotiana affinis), a perennial in the south-west; Nierembergia rivularis, cream-white, from La Plata; and Nothospermum fragrans, white, North America. The Narcissus has not been named, as that, loveliest among our hardy spring flowers, must have occurred to "E. J. S." Of annuals there are Nemesia, Nemophila, Nigella, and Nolana. There are no annuals whose Latin names commence with Y, but, if English names might be admitted, there are the Yellow Sultan (Centaurea suaveolens), Yellowby (Chrysanthemum segetum), and Yellow-wort (Chlora perfoliata). As regards obtaining plants of the various sorts needed by "E. J. S.," application had better be made to some of the largest hardy plant nurseries whose advertisements appear in GARDENING.

2754—**Unhealthy Camellia** (*C. S. P.*).—The plant appears to be in a very bad way, as the small specimen received had a very large stock of scale on its leaves. Judging from the small and badly-crushed flowers, the variety appears to be an inferior sort. In the first place the unwelcome visitors must be got rid of, which can be easily done by scraping them off and cleansing the leaves with warm water in which a quantity of soft-soap has been dissolved. The roots must also be attended to, as it is very evident they are not doing their proper work. We should recommend you to lift the plant and cut away the dead roots and remove the old soil, substituting good fibrous loam, with a little silver-sand added to keep the whole porous. The pot or tub in which it is planted should be well drained, so as to carry off superfluous water, which if allowed to remain would become sour and cause the rootlets to rot. While growth is being made the syringe should be used freely amongst the top growth.

2755—**Annual flowers for late June show** (*Cyclops*).—The following annuals are in bloom in June: Bartonia aurea, Chrysanthemum segetum, Clarkia elegans and C. pulchella, Collinsia grandiflora, Coreopsis Drummondi and C. atrosanguineum, Cornflower, Eschscholtzia, Iberis umbellata, Lavatera trimestris, Linum coccineum grandiflorum, Matthiola (Stock), Nigella damascena, Mignonette, Phacelia campanularis, Sunflowers, giant and miniature, Sweet Peas, Shirley Poppies, and Opium Poppies. The seed may be sown thinly in well-prepared rich beds at the end of March or commencement of April, thinning vigorously as soon as the seedlings can be handled. They must be watered when the weather is dry and well attended to in every way if you wish to have perfect flowers. You may also raise seedlings on the hot-bed to plant out in case those sown in the open should fail.

2756—**Spring flowers for cheap buttonholes, etc.** (*C. B.*).—There are many flowers suitable for buttonholes in the spring, but whether you could make a profit out of them is a matter of doubt. So many flowers are now imported from the Continent and other equally suitable places that you should find it far more profitable to obtain your supplies from the market direct. Muscari and Lily of the Valley in combination are very pretty and quite unique. The different forms of the Narcissus each have a beauty of their own, and are still prettier when their own lovely green foliage is used in conjunction with the flowers. Violets, Snowdrops, either separate or blended together, are very pretty, Forget-me-nots, Tufted Pansies, especially some of the newer rayless forms, Primulas in variety, and the Spring Snowflake (Leucojum).

2757—**Plants for carpet bedding** (*J. Clark*).—Tricolor Pelargoniums, dark-foliaged plants such as Alternantheras and Iresines, Zonal Pelargoniums, Blue Lobelias, Calceolarias, Golden Feather, Phlox subulata, Silene ageratum, Double Chamomile, Musk, some of the Saxifrages, Sedums, and Echeverias are used in carpet bedding, but this style of gardening has nothing to recommend it, and beautiful plants should be spared such ignoble usage.

2758—**Double Primroses** (*Primrose*).—Double Primroses do not seed, and therefore cannot be so raised. These are botanically true double flowers, because the pollen-bearing anther of the singles are in the doubles, changed into floral petals, and thus the flowers are sterile. Plants can be purchased, as may be seen, by no less than three advertisements in last issue. Ireland is the favoured country for them, because the climate is humid. It is the dry, insect-producing summers of South England that destroys them. There are fully a dozen diverse, white, sulphur, yellow, lilac, rose, crimson, purple, and intermediate shades. The white and lilac are the most common. They like cool, shady places, deep, retentive soil, and occasional top-dressings. The double Begonia does not produce seed from its huge double flowers, but from small side blooms that are almost single, and are what the florists call female flowers.

2759—**Petunias** (*Scottish Reader*).—March is early enough to sow Petunia-seed, which is best sown in shallow pans of light soil, and as the seed is very small it should be lightly covered with finely-sifted soil. When the seedlings are large enough they should be pricked off into well-drained pots or pans, and later on potted off singly into small pots, and grown on in an intermediate-house or warm frame. When a few inches growth have been made it will be advisable to pinch the points out in order to induce a compact, sturdy habit. Towards the end of May the plants will be ready for the final potting; a compost of fibrous-loam and good leaf-soil will suit them admirably. They must never be allowed to suffer for water, and a stake should be placed against each plant to prevent it from toppling over.

2760—**Liquid-manure for Snowdrops** (*Ashleigh Langside*).—Liquid-manure had best be applied to the Snowdrops during the summer and autumn months, choosing a time when the soil is moist, and being careful to apply it in not too concentrated a form. Your complaint as to the flowers being small this year seems to be a pretty general experience.

2761—**Charcoal-dust** (*Old Subscriber*). — This material can, as a rule, be purchased from vendors of garden sundries and artificial-manures. It materially helps to save Onions from attacks of the grub-fly if well dusted with soot occasionally in the evening. Also sow seed early—say end of February—if the weather be open, as that enables the plants to become strong ere the fly attacks them.

2762—**Figs** (*C. D. J.*).—Both your trade advisers were right in certain ways. Thus Figs will fruit well in pots under glass, and may be planted out later as advised. It is, however, preferable when they assume a bush form to keep on growing them in pots, but giving them larger ones every two years. As, however, you wish to clothe the back wall of your vinery, you will act wisely to plant out a couple of Figs at once, nailing in the leading shoots to the wall, but not too lightly. But your house seems to be a vinery, and if the Vines cover the roof over entirely, then you will get growth and leaves on your Figs, but not much fruit. Vines shade so much. To get Figs you should not allow your Vines to grow more than two-thirds the height of the roof.

2763—**Best single Hyacinths** (*A Reader from the Start of* GARDENING ILLUSTRATED).—Single white: alba maxima, Avalanche, Blancheur à Merveille, La Grandesse, L'Innocence, Mont Blanc; blush-white, Cloche magnifique, Elfride, Grandeur à Merveille, Leviathan, Lord Shaftesbury, Mammoth; dark blue, Anna Bolena, General Havelock, King of the Blacks, King of the Blues, Marie, William the First; light blue and porcelain, Amy, Czar Peter, Grand Lilas, La Peyrouse, Queen of the Blues, Regulus; red and pink, Cavaignac, Circe, Cosmos, King of the Reds, La Belle, Vuurback; yellow, Anna Carolina, Bird of Paradise, Grand Vedette, John Stuart Mill, King of the Yellows, Obélisque.

2764—**Removing Crocuses** (*Bunny*).—If you can, in lifting your clumps of Cloth of Gold Crocus, the moment they are out of bloom, also take with them fair amounts of soil, the roots being little disturbed, and well plant them at once with care they will suffer little from the removal. Mark the clumps with sticks whilst in bloom.

2765—**Plants and Vines** (*Ibid*).—The temperature of your plant house, from 50 degs. to 60 degs. of heat, will, if continued, soon induce the Vines to push into growth. Have you hard pruned them? If not, then do so at once, cutting the side laterals back to a bud close to the main stems. Two months hence, when the Vines should be fairly in leaf, there should be warmth enough from the sun to keep growth good, although it would be all the better for some fire-heat on cold nights. If the Vines are grown chiefly to produce shade, the shoots may be kept well thinned. When the laterals or side shoots are 18 inches long, and show bunches, you will, after they have flowered and begun to set berries, cut out all but the stoutest bunch, and then pinch back the shoots to the first leaf beyond the bunch.

2766—**Vine diseases** (*Gardener*).—You are quite right in assuming that air or adventitious roots on Vines result from the proper roots having got into deep and sour soil. Removing the top soil, lifting the roots carefully, then taking away some of the under soil, and replacing it with sweet, fresh soil, relaying the roots shallow, and covering them up again, is the proper remedy. We had not heard that the Vine mildew was very prevalent last year, neither did we see evidence of it. Cold, damp soil, cold draughts of air, close, stuffy, ill-ventilated atmosphere, all tend to create it on Vines. Washing out pipes with sulphur liquid, or getting lumps of lime, standing them in large pots, sprinkling them to slack and heat, then throwing sulphur over them, make good remedies.

2767—**Turfy loam** (*Ashleigh*).—Good turfy loam should be from pasture-land, and not from woods, marshes, or where water is often lying. Your loam seems like the latter character, as judging by your description it contains Equisetum or Horsetail, a weed commonly found in your soil. We advise you not to use this soil until it has been kept in a heap several months, and when coarse weeds grow on the outside turn the outside of the heap inside and bring the inside out. By so doing you will sweeten it. Then in using the soil pick out any running roots that may be found in it. Really good turfy loam, which is the top spit of an old pasture several inches deep, including Grass, stacked in a heap Grass downwards, is usually fit for use in six months. Still the Grass should have well decayed. It should also be fibrous and not sticky, but rather silky when compressed in the hand.

2768 — **Market gardening** (*Gardener*). — Your proposal to embark in the culture of vegetables and fruit for the Lancashire markets is doubtless an excellent one, and we regard the admirable and intelligent way in which you have stated your case as singularly promising. No doubt you have ample knowledge of culture, but you need much more concerning market methods, and we think you would be very wise to go into a market garden in Lancashire that you may get wider information as to methods in packing, marketing, prices, charges, etc., all of which it is so needful to have full knowledge of. If you follow this advice, keep your eyes and ears open, but your mouth closed as to your ultimate intention, lest others take the wind out of your sails. In a year you will pick up a lot of useful information.

2769—**Strawberries** (*Amateur*).—You can purchase now at fairly low price per 100 such capital Strawberries as Royal Sovereign, President, Sir J. Paxton, and Latest of All, ripening in the order placed, and all first-class varieties. You cannot find Strawberry-plants having stems so stout as to hold the ripe fruits up from the ground. The weight is too great. You must top-dress the surface before fruiting with clean straw or straw litter if you wish the fruits to be quite clean. For picking green we prefer of Gooseberries Lancashire Lad.

2770—**Bog-soil** (*Lady Amateur*).—The sample of peaty bog-soil and fibre you send does bear a close likeness to the fibre you refer to, and is probably just as suitable for plants as that is. Where the latter comes from we do not know, that is presumably a trade secret. It bears resemblance to parings from bogs and heaths, partially decayed. If the soil of which you send a sample has been some time stacked, and is sweet, then you may use it for pot or other plants with safety. Add to it some turfy loam, well decayed, leaf-soil, and sand, and you should have a capital compost. You may try a few plants in it alone, but let it be well broken up first. We should be glad to learn the result some time later.

2771—**Liquid-manure** (*H. A.*).—We trust the receptacle for your liquid-manure is cemented, so that the liquid-manure does not permeate the soil. If this liquid be pretty strong, it will be well to moderate its strength by adding its bulk of water before applying it. Nothing you have mentioned but will be benefited by applications at once, and fruit-trees, Gooseberries, Raspberries, and Strawberries, and your plant border may have it nearly all the year round. Apply it chiefly, however, when the weather is dry, and cease the moment the soil seems to be too wet. Much saturated soil, especially if stiff, should have the surface lightly forked over occasionally on dry days.

2722—**Greenhouse drip** (*Alma*).—As you complain that your greenhouse is full of drip in the mornings, the inference is that you keep the floor too moist, as this drip is the product of vapour which rises and condenses during the night. When the weather is mild, some little ventilation at night may prove a remedy. A lamp, if it does not smoke, and you burn the best clarified oil, may, burning a few hours in the evening, help materially to dry the air. A stove burning in the house may be injurious. So much depends on the disposal of the burnt air. See if you cannot keep your plants growing with far less water, and keep the floor dry.

2773—**Pruning fruit-trees** (*South Wales*).—You may prune your young half-standard Apple and Pear-trees, only a year planted and have made long shoots, back to half their length, cutting close above a bud that breaks outwards. This pruning should result in the growth of several more shoots this summer, and these will then form the framework of the tree. Next winter a few weak or cross-growing shoots may have to be cut clean out, but the chief ones should be only just shortened back. Later they will simply need feeding. Prune the bush-trees in the same way this time. Whilst young it is very important to prune to make a good foundation for the trees. The cutting back of shoots that carry fruit-buds at the tip is in the discretion of the pruner. Not many varieties do so; Golden Noble and Yellow Ingestre do, as a rule, but the majority do not. Fruits so placed are liable to be swayed by the wind in rough weather.

2774—**Cucumbers in small house** (*Anxious*).—As you have but two rows of pipes in your small house, if you enclose them in a wooden-box to get their warmth for bottom-heat, from where will you get heat to warm the house itself, as for Cucumbers, that should be kept at from 65 degs. to 75 degs.? Preferably do not enclose the pipes, but place along over them, resting on cross bearers, boxes having open or trellis bottoms, on which place first rough pieces of turf before filling them with proper soil. These boxes may be 15 inches wide and 10 inches deep. The heat from the pipes would then warm the soil in the boxes, and the air of the house also. No doubt previous failures have arisen from lack of sufficient heat if the plants have been put out too soon in the spring. Perhaps you did not give proper soil, which should be rather firm and close, than light and porous. Perhaps you kept the soil and atmosphere too dry? Let soil be rather ridge-shaped in the boxes, and the plants 20 inches apart.

2775—**Hardy Fuchsias** (*C. A. P. O.*).—Fuchsia Riccartonii is perfectly hardy in the South of England and Ireland; Fuchsia macrostemma conica, F. m. globosa, and F. m. gracilis, as well as F. coccinea and F. corallina, are practically hardy in warm climates, as is F. fulgens. You would find much information in GARDENING for Oct. 23, '97, last.

2776—**Waterproofing calico** (*H. D. K.*).—See GARDENING, Jan. 22 last, p. 688, for answer to your question.

2777—**Peat-Moss-litter** (*A. G. A. W.*).—When you say you want to make a Cucumber-frame of peat-Moss-litter, doubtless you mean a bed on which to place a frame. A Cucumber-frame is made of wood, and of various dimensions, covered with sliding glass-lights. The peat-Moss-litter of itself would give little or no heat, and if it has been used for bedding horses, to make manure it does not greatly heat like straw horse-manure does. Some good leaves mixed with it would doubtless help it to heat. In any case, if you want to try such a bed, make it up broader and longer by 9 inches than is your wooden frame. It should be built up solid, compact, and neat, and rather higher behind than in front, say 3 feet deep behind and 2½ feet in front. When built up place the frame on to it. Throw in and tread down a few more inches of the manure, then upon it place 2 inches of turfy-loam, with a mound 9 inches deep in the middle, and into that plant your Cucumber-plants.

2778—**Heating vineries** (*H. L. W.*).—As you have in your range of vineries a natural rise (or fall) of 4 feet, all you have to do is to fix your conical boiler—in brick-work, if preferred, but, in any case, under cover—at the lower end, and the natural rise in the ground should be followed by the pipes, the ends of the flow being at the extreme highest point. There you would have to insert an air pipe. As to getting enough heat, all depends on how much you want. Two pipes may keep up a temperature of about 50 degs. in cold weather, but not nearly that in hard weather. So much depends on the uses to which you wish to put the houses. Very much, too, depends on the capacity of your boiler. We should prefer four rows of piping. As to disjointing your old piping, that is difficult. You may be able to turn out the cement; or, failing that, to chisel it out. Generally now India-rubber rings are used, as these readily come apart. You would be wise to have the help of a practical artisan.

2779—**Old Vines** (*Mayford*).—Your wires are much too near the glass, and crowds the foliage, causing it to scald. You should have the wires fully 15 inches down. That would give the leaves ample space to develop. No doubt the roots of your Vines have burst through the wall, and have got into the clay and water-logged soil beyond. You will have to open a narrow trench all round inside the wall and sever all roots, also removing much of the top soil, filling the trench and replacing top soil with fresh turfy loam. With the surface-soil mix, at the rate of a bushel per cart-load, fine-crushed bone and a couple of bushels of wood-ashes. This new soil should attract roots to the surface. It is doubtful whether you have many roots inside, but you may treat the inner border the same way. Vines have a great liking for water, and very often their proper borders, especially in side ones, are kept far too dry.

2780—**Vines in conservatory** (*J. D. C.*).—As you want to grow plants in your conservatory largely, you must not shade them too much with Vines overhead. We should advise planting one Black Hamburgh and one Foster's Seedling white Grape, both on the sunny side of the house in a well-made border. Let them be at each end, and carried through holes in the brickwork, then up inside the house to the eave, running the rods along to meet each other in the middle of the house, and just under where the roof starts. Then you could carry about three rods from each Vine over just beneath the roof. That would not be excessive shading. Of course, it would take a few years for Vines to fill the roof in this way. You would have to purchase planting Vines in 7-inch or 8 inch pots, turn them out, lay out the roots evenly, and plant not deeply in the border. This should be trenched 2½ feet deep, or be made entirely of fresh soil. For start each border may be 6 feet by 4 feet. Let the soil be good, but use raw manure only for top-dressing.

2781—**Carnations.**—"M. P." will be glad to know if it is too late to put in Carnations; also when ought she to hairpin the old roots of Red Cloves, so as to get new plants? Soil, old garden mould.

*** *Early August is the time for layering Carnations. We should certainly not advise propagating them in this way now.*

2782—**Treatment of Crotolaria retusa, etc.**—What treatment is required for Crotolaria retusa, Barlena strigosa, Cassia corymbosa?—H. H.

*** *The plants named require stove-house treatment, except corymbosa, which is happy in a warm greenhouse during the summer. It may also be planted out in summer, and its yellow flowers are decidedly attractive.*

2783—**Planting Montbretias.**—How soon ought Montbretias to be planted, and how far apart?—A. B. X.

*** *Plant in the spring in warm, well-drained soil, and make good masses of them A distance of 2 feet apart would suffice, but grouping should be done. Under such conditions the beauty of the plant is seen. Hybrid Montbretias show a charming variety of colours.*

2784—**How should Garrya be pronounced?**—How should "Garrya" be pronounced, as in carrier or as in Maria? Either of these two words appearing as answer to this question will be sufficient for me.—T.

*** *As in "Carrier," by all means, being derived from "Garry," the Scotch or English name of an official of the Hudson Bay Company, who helped Douglas very much in his explorations in that region.*

NAMES OF PLANTS AND FRUITS.

Names of plants.—*J. M.*—Some kind of Arum. Put in heat and flower it. We cannot tell what species it is from the specimen sent.——*Male.*—Cereus speciosissimus.——*Royal County.*—1, Anthurium Scherzerianum; 2, Eucharis amazonica; 3, Next week; 4, Hibiscus of some kind, but please send flower; 5, Alocasia sp.; 6, Caladium sp.; 7, Daphne laureola; 8, Please send flower; 9, Bouvardia. The specimens you sent were, unfortunately, very poor ——*Ignorant.*—The Salvia is splendens Bruanti; the Fern, Nephrolepis exaltata; 1, Begonia insignis; 2, B. metallica; 3, Please send flower; 4, B. Rex Louis Chrétien.——*Constant Reader.*—Sparmannia africana.——*A. M. C.*—1, Pernettya mucronata; 2, Probably Myrtus Cheken; 3, Helleborus orientalis, var.——*Phyllis.*—The Fern is Adiantum lunulatum, which may be obtained from any of the large nurserymen who deal particularly with indoor plants.——*A Constant Reader of "Gardening."*—The flower is one of the Anemones, usually called Nice Anemone, a variety A. coronaria.——*H.*—We do not know at all what your Lily can be without flowers. Please send a specimen and we will gladly help you. Your other questions will be answered next week.——*L. R.*—Phillyrea angustifolia. ——*Mr. T. Cooper.*—Euonymus japonicus.

Names of fruit—*New Park-road.*—Thanks for kind expressions about our paper. The fruit is Yorkshire Beauty.——*T. Williams.*—Blenheim Orange Apple.——*W. Clarke.*—Apple Kymer.

Catalogues received.—A. Cross and Sons, Ltd., 19, Hope-street, Glasgow.—*Artificial-manures, Insect-destroyers, etc.*——V. Lemoine and Sons, Rue du Monteb, 134, Nancy.—*Begonias, Petunias, Seeds, etc.*——G. Phippen, Reading.—*Seeds* ——K. Hopkins, Mere Cottage, Knutsford.—*Primroses, Pansies, and other Hardy Plants.*——Mr. W. Wells, Earlswood Nurseries, Earlswood, Redhill, Surrey.—*Chrysanthemum Calendar for 1897 and Special List of Varieties.*

LAW.

Market gardener's valuation (*W. T. C.*).—It does not matter to the outgoer what your lease says. He has nothing to do with you and your lease; what he has to do with is his own lease and his landlord. If his lease requires him to quit the garden on February 2 and to receive payment for all roots then growing, he must so quit, and he cannot claim to receive payment for a part and to hold the rest until ready for use. It is, of course, open for you to come to a private arrangement with him on the matter, and for you to allow him to do what he wants, but that is a different affair. You are, of course, entitled to full possession of the garden at the date named in the outgoer's lease, and after that date neither the outgoer nor his friends have any right to enter the garden without your express permission. In regard to the other case, you are quite at liberty to suppose anything you like—there is nothing illegal in a supposition—and if you choose you may suppose that you own the earth. But it is not wise to publish your suppositions, as if they happen to be extravagant ones they may land you in a lunatic asylum, and if they imply unworthy conduct on the part of others who have not been guilty of such conduct they may involve you in an action of libel. It is quite possible that bushes may have been planted which were four years old at the time when planted, and the right of the outgoer to compensation for these matters will depend upon the terms of his own lease and not upon the terms of your lease. If the words are "for all trees, bushes, etc., which have not been planted more than four years," he will be entitled to compensation; but if the words are "for all trees, bushes, etc., which are not more than four years old," he will be entitled to no compensation.—K. C. T.

Under-gardener's notice.—I am an under-gardener, paid by the week and living off the premises. Is my employer entitled to a month's notice from me, seeing there was no stipulation of the kind when the bargain was made?—WARBLINGTON.

*** Gardeners and under-gardeners stand in the same category, and your master is entitled to a month's notice from you. For fuller information see reply to "A. E. G." on this page.—K. C. T.

A gardener's notice.—Five years ago I took a situation as gardener at a weekly wage, not to reside on the premises. There was no contract whatever as to notice. On January 19th my employer gave me notice to leave on the 29th. Is the notice good, or am I entitled to a month's notice?—A. E. G.

*** I think the notice is not a good one, and I think you are entitled to a month's notice. The reason why a month's notice is necessary is that legally a gardener appears to be a domestic servant, or at least that he so much resembles a domestic servant that he falls within the usual rule as to a month's wage or a month's notice. You will gather from this that a gardener employed by a market gardener does not necessarily come within the rule as to notice, and that a person who is engaged to help a gardener and does merely digging work is not necessarily entitled to a month's notice, because he cannot be said to be a domestic servant. The Inland Revenue recognise this distinction, and they do not require licenses for male servants to be taken out for those doing mere spade labour, while they do require persons employing private gardeners to take out male servants' licenses.—K. C. T.

Liability of landlord to replace broken palings (*Midlothian*).—A landlord is not liable to do any repairs unless he has entered into an express contract in that behalf, and, therefore, as you have no written contract of any kind, nor any verbal contract of that kind, you cannot compel the landlord to replace the palings that have fallen, even if the fall be due to natural decay.

Notice to quit — ejectment. — In October I wrote asking to what notice I was entitled as the house I occupied had been sold, and on October 23rd (page 490) you advised that I was a yearly tenant and was entitled to half a year's notice, the notice to expire with a year of tenancy. The purchaser wants possession and has given me notice to quit on February 11th. I told him that I was a yearly tenant and should require half a year's notice, and he replied that he could get me out in a month. I tore up the notice and threw it in the roadway, and he then said that the law must take its course. I hear that he is going to try to get me out at the end of this month. Will you kindly tell me what to do if he applies for an ejectment summons to turn me out?—E. D. F.

*** Probably your new landlord will find out his mistake and will not apply for an ejectment. If he does initiate proceedings before the justices you will have a full week's written notice thereof, and you must attend the court and produce your rent-book and state the facts, and assert that you hold as a yearly tenant and therefore claim the right to half a year's notice. Probably the landlord will appear by a solicitor, and it will be wise for you to engage a solicitor also, although not strictly necessary. It was a foolish act to tear up the notice; tearing it up could do you no good and it could do your landlord no harm, while the notice might, if kept, have possibly proved of some service, especially if wrongly worded.—K. C. T.

Notice to determine gardener's contract of service.—What notice is necessary to determine the service where a man is engaged as a gardener with board and lodgings and is paid a weekly wage? The first month of service to be a trial month, and wages to be afterwards increased as may be agreed upon, but no bargain as to what notice is to be given by either side. —C. C. CORLEY.

*** There cannot be the slightest possible doubt that the man is a domestic or personal servant, and a month's notice is necessary to determine the service. See other replies on the point in this week's issue.—K. C. T.

POULTRY.

Ailing Bantams (*M. E. M.*).—Your Bantams are suffering from an ailment known as scaly legs, sometimes due to a deficiency in the secretion of oily product, which causes the skin to dry up and become split into divisions resembling scales. Sometimes the disease is brought about by parasites. The best treatment in severe cases is to take 1 oz. of sulphur, ½ oz. of oxide of zinc, 1 drachm of oil of tar, and 2 oz. of whale oil mixed together and applied daily. When parasitic influence is at work, it may be sufficient to rub in sulphur ointment daily. In your case I would recommend the first treatment. I suppose it would be correct to say that when an outbreak of this kind occurs you may expect others to follow, but this does not mean that the disease is contagious, but rather that the same causes are at work.—DOULTING.

BIRDS.

Canary (*J. Clinch*).—The liver of this bird was greatly congested, which was no doubt the cause of its death. The liver is quickly affected by Inga seed, which is so often present in the mixed bird seeds, being very injurious to most kinds of cage-birds, causing the death of greater numbers than almost any complaint to which they are subject. Maybe you are treating your birds too generously in their diet, causing them to become too plump, and disinclined to take sufficient exercise to keep themselves in health; in this case they should be put upon short commons for a time, and encouraged to take more exercise. They should get plenty of coarse grit-sand to assist digestion, for without the help of small stones in the gizzard that organ is not able to perform the function of digestion properly. A piece of cuttle-fish-bone placed between the wires of the cage affords at all times healthful amusement, and tends to keep cage-birds in good health. As a rule the Goldfinch may be allowed a greater variety of food than most other seed-eating birds. Thistle-seed it is especially fond of—a ripe Thistle-head to peck at being a great treat. Its diet may be varied with Flax, Millet, Maw-seed, and broken grits. Do not keep your birds in too high a temperature, and let them have green food in small quantities, such as Groundsel, Chickweed, and Watercress, and avoid feeding and indulging them too freely with sweet, pampering food, as this tends to bring on disease of the liver.

GARDENING ILLUSTRATED.

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ROSES.

Sweet Brier Roses from seed.—How long would the Lord Penzance Sweet Brier Roses take to flower from seed sown in February?—ARCHIE.

*** This would depend upon where the seed was sown and upon the after-treatment of the seedlings. If seed was sown thinly in a cold-pit, and every encouragement given to the young plants by admitting air and sunlight freely, you may expect to have some in flower the third year. It would have been better to have sown the seed as soon as gathered in November. Rose-seed being very hard is slow in germinating. Nothing is gained, but rather much time lost, by keeping the seed out of the ground after November. Do not prune the seedlings in any way. Leave them to grow as they like, and they will bloom more quickly. If you are anxious to see if you have obtained any new variety of these Briers, which may reasonably be expected from their latent, hybrid nature, you should bud a few of the seedlings on Manetti-stocks this coming summer. These Briers make good plants on the Manetti-stock, some of them reaching a height of 5 feet the first season.

Is Rosa Regeliana a synonym of R. rugosa rosea? (*Somerset*).—There is some confusion as regards these Japanese Roses; but the highest authorities give R. ferox and R. Regeliana as synonymous with R. rugosa (see Kew Hand List, Part I., Polypetalæ). The National Rose Society in their official catalogue mentions Rosa rugosa as introduced by Cels in 1802, and they also make it synonymous with R. ferox. That R. Regeliana and R. rugosa are one I have no doubt whatever. They have the same leaves, blossoms, and spines. If "Somerset" will send some flowers with wood and foliage at the proper time we shall be pleased to endeavour to help him. The lady visitor was in error in calling "Somerset's" rugosa Rose Fair Rosamond. This latter belongs to the Hybrid Climbers, somewhat allied to the Hybrid Chinese. It was introduced by Wm. Paul and Son in 1890, and is one of the hardiest and most beautiful of our free-growing climbers. The flowers are flesh coloured, prettily mottled, and produced in great profusion, and the habit of the plant is singularly graceful. "Somerset" says he sowed some seed of R. rugosa alba, and he imagines the seedlings are R. Regeliana. I have some quantities of both types, and they never can be relied upon to come true. The white form, however, is readily discernible by its pale grey coloured wood. By way of variety "Somerset" should try his hand at hybridising these rugosas with a good scarlet, such as Gloire des Rosomanes or Gloire de Margottin. We require a vivid scarlet rugosa. Double forms are not wanted. There are too many already.—P.

Sickly Maréchal Niel Rose (*Beginner*).—Your plant is evidently in a debilitated condition. Usually in such cases the fault lies at the root. It is too late to disturb the plant now, but next November you might remove the old soil and give a few barrowsful of one-year-old loam, taking great care that none of the small fibrous roots are injured. Your best plan at the present time is to give the border a dressing of decayed-manure, and now and then a good soaking of diluted liquid-manure. Prune the lateral growths to two or three eyes from main stem. Spread out the branches to admit air and light freely. If no artificial heat you cannot well give too much air, of course guarding against cold draughts that so quickly bring on mildew. You should close lights on frosty nights.

Pruning Maréchal Niel Roses (*Mrs. M. T.*).—If your Maréchal Niel Roses made good growths last summer these growths should have been retained to give the blossoms this spring. November would not be too early to prune a plant under glass providing the operation was really necessary, but it is far preferable to prune back Maréchal Niel immediately after it has flowered, say about April; then by the aid of plenty of artificial heat, sunshine, and moisture good rods are produced during the summer that will give a plentiful crop of blossoms the following spring.

Rose L'Ideal, etc. (*Rose Lover*).—The Rose L'Ideal is better suited for a wall 6 feet to 7 feet high. The following half-dozen varieties would be sure to please: Rêve d'Or, W. A. Richardson, Pink Rover, Reine Marie Henriette, Climbing Devoniensis, Mme. Moreau. Maréchal Niel would do very well if the warmest spot were selected for it. The Tea-scented Roses should be on seedling Briers, but the hardier kinds, such as Ayrshire Roses, would most certainly be best on their own roots. Your climbing Roses, planted in December, will throw up shoots from the base as soon as their roots are in full action. The growths that are dying back were insufficiently ripened. Cut them back to good sound, plump eyes.

Maréchal Niel Rose in wooden box (*F. J. Little*).—This is not a suitable Rose for an iron archway. A south wall is the best position for it outdoors. However, if you prefer to try one, your best plan would be to dig out a hole in the path, as the box would not be large enough. Take out two or three barrowsful of the soil, put about 3 inches of broken bricks in bottom of hole, and fill up with three parts maiden loam and one part decayed manure.

Treatment of Moss Roses (*Highlander*).—You were quite right to grow your Moss Roses in bush form, although they would flower well if pegged down; it is only in special cases that this method is adopted. You must not prune your plants too severely. It is, however, a mistake to say that the flowering wood is formed mostly on top of plant. As a rule, the shoots of Moss Roses should be cut back to about six or seven eyes, but some strong growers, such as Baron de Wassanaer, may be left longer.

Roses for a west wall (*J. B.*)—If the west wall is a tolerably high one, the following summer and autumn-flowering varieties are all first rate; Aimée Vibert, Bouquet d'Or, W. A. Richardson, Longworth Rambler, Fellenberg, Mme. Alfred Carrière, Gloire de Dijon, Cheshunt Hybrid, Mme. Berard, Reine Marie Henriette, Waltham Climber No. 1, Pink Rover, Souvenir de Mme. Joseph Metral. If for a low wall 4 feet to 5 feet high, the undernoted would be a good selection and perpetual flowering: Grace Darling, Marie d'Orleans, General Jacqueminot, Gloire de Margottin, Gustave Regis, Mrs. Paul, Mme. Isaac Pereire, Mme. Abel Chatenay, Climbing Pride of Waltham.

Treatment of standard Roses (*Amateur*).—You must not prune your standard Roses until March. They will take no harm, providing the bottom buds do not start. You cannot do anything to them at present, for by stopping these young shoots you would run the risk of forcing the dormant buds into growth. We have had seasons as early as this before. If at pruning-time the plants bleed a little, they will quickly recover. Your Maréchal Niel should be covered up each night with a straw mat, and the young growths may escape uninjured. If, however, they do get nipped by the frost, they will break again from the side buds. Do not on any account cut down these green growths.

Treatment of Roses.—As "Amateur" does not give the names of any of his Roses it is difficult to give advice as to their pruning, as different varieties require different treatment in this respect. Some climbing Roses should be scarcely touched by the knife, others will stand comparatively hard pruning. If "Amateur's" Roses are of like varieties to his neighbours', which have done so well, he had better follow the plan that has proved so successful in that case and merely tie his plants in, only cutting out weak growths.

Pruning back Roses (*H. S. M.*).—Do not be in a hurry to prune the Roses that you planted in October last. The present season is a very early one—somewhat resembling 1893—but if pruning be done now it will mean the starting of the best buds, to be perhaps nipped by frost later on. It is better to leave the pruning of the H. Perpetuals and the Hybrid Teas until March, and kindred types should not be touched until April. It will doubtless appear rash to cut back the growths that perhaps are almost showing buds, but it must be done. Prune back to good plump dormant eyes. The plants will undoubtedly bleed, and even the ground may appear damp from the loss of sap, but the flow of sap quickly stops. The Gloire de Dijon that has reached the top of wall need not be cut back if the other side of the wall belongs to you. If allowed to droop over the result would be very pleasing. If, however, it is necessary to stop them, cut back the growths or train them horizontally along the top of wall. The lateral growths should be pruned back to about three eyes. If left longer a quantity of miffy growths and blossoms would be the result. When the growths become too crowded, two or three of the main shoots may be cut clean away right down to the base. This will induce young rods to spring up, which are the life of a climbing Rose, and that prevent the plant from becoming bare towards the base, as is too often the case.

Six climbing Roses for greenhouse (*A Constant Reader*).—The best six climbers for your greenhouse would be W. A. Richardson, Lamarque, Bouquet d'Or, Cheshunt Hybrid,

Climbing Perle des Jardins, Reine Marie Henriette. The best temperature for Roses under glass is about 60 degs. by day and about 55 degs. by night. This temperature should suit most greenhouse plants. You could very well grow a few Tomatoes in the same house. They should be in pots. If planted out they would probably grow too rank, to the detriment of other inhabitants of the greenhouse.

Striking Rose-cuttings *(A. H.)*.—Early autumn is the best time to put in cuttings from hard wood. Take the well-ripened growths of the current year, cut into lengths of about 6 inches; the base of each cutting should be cut clean just below an eye or bud. Plant in an open border in sandy loam, or ordinary garden soil will do, but if heavy it must be rendered light by the addition of sand or road-grit. Rose-cuttings also strike readily, especially the Tea-scented tribe, from the growths that have just flowered in July. Cut about 2 inches long, and insert the cuttings, with leaves attached, in pure silver-sand in a cold-frame. Keep them sprinkled frequently and shade from glaring sun. They will be rooted in two or three weeks, when pot up and keep in close frame for a few days. Bed out the plants the following spring.

Rose Briers *(E. L.)*.—Briers are usually planted in the autumn, but it is not too late to plant now, as they will have made good roots before the budding time arrives.

Rose L'Ideal for 10-feet wall *(Rose Lover)*.—L'Ideal would hardly be suitable for a south wall 10 feet high, although in some districts it grows very freely if on the Brier-stock. Two capital sweet-scented Roses for such a wall, especially as it is whitewashed, would be Reine Marie Henriette and Waltham Climber No. 3.

GARDEN WORK*

Conservatory.

Clematis indivisa is beautifully in flower with us now. I like this better than its variety C. indivisa lobata. Will succeed in a cool-house. Plant in a bed of peat and loam. It makes a pretty trained specimen in a pot. The flowers are pure white and useful for cutting. Fuchsias are now breaking into growth, and should be put into shape and in the course of a week or two repotted. If one wants large specimens we must have plants of several years' growth, but it is a good plan not to keep the old plants too long. There will be plenty of cuttings now that will root in a few days in the propagating bed. Some of the old Fuchsias are still grown. Arabella Improved, Beauty of Cleveland, and Molesworth are good in habit, and habit is essential in Fuchsias. For bedding Rose of Castile, a very old variety, is still used for its freedom of blooming and dwarf habit. The double Fuchsias, many of them at least, have become too large. Take Frau Emma Topfer; the flowers are so large as to be top-heavy, and if the plant is moved the flowers drop off, and the plant is a bad grower. About forty years ago there was a double Fuchsia named Grandiflora plena, the best for conservatory work I have ever seen. It may be in existence somewhere now, for I cannot imagine anyone destroying it who knew of its good qualities as a winter bloomer when planted out in a good border in a light house. If there is a lack of flowers now there must be something wrong somewhere, as besides bulbs, which are about half the price they used to be, there are Genistas, Azaleas, Lily of the Valley, Cinerarias, Rhododendrons, Deutzias, Dielytras, etc. None of these things are expensive now. Take the case of Azaleas; I have given three shillings and sixpence each for plants that can be bought now for half the money. Pelargoniums, early kinds, are showing colour, and soon there will be plenty of flowers on the plants. What staking is required should be done now. Many years ago it was thought the Zonals would drive out the old show sorts, but it is not so, and is not likely to happen. More ventilation, more water, and less fire will condense requirements now.

Stove.

Continue to propagate the plants of which young stock is required. There will be a good deal of this kind of work now, and as the cuttings are soft and young from having been grown in heat, every cutting will grow under favourable conditions—Gardenias, Begonias, Euphorbias. It is too soon yet to get cuttings of Poinsettias, but everybody should grow a lot of these, as they are so bright in the conservatory in winter, and are easily grown. But it is better to strike a lot in May in a brisk bottom-heat and get the work done quickly, and then move out to cold pit to ripen. Of course, in August there are no cold plant structures, but a low pit or frame is just the place for these plants from August as long as it is safe to keep them away from a warm house. There are many ways of growing Bouvardias, but I think those who plant out in a prepared border have good results to show in the way of bloom. Now is the time to get a lot of cuttings rooted and well established in small pots ready to go out early in June.

Ferns under Glass.

Repot any plants which require it—in fact, all specimen Ferns should be repotted now, reducing the old balls so as to make room for the fresh compost without having the pot too large. More loam is used now for Ferns than used to be the case, and the plants make firmer, sturdier growth in consequence. Increase Adiantum Farleyense by division of the crowns. The crowns from young plants get established sooner than when old plants are cut up. The Nephrolepis family are propagated by division. They are good basket Ferns, and if baskets are filled now and kept warm and moist growth will soon spread.

Mushroom House.

Continue to make up and spawn new beds in succession till the end of March, and afterwards select a cool spot outside for the summer beds. There is no better place than the north side of a building. Beds in bearing will require water according to their condition to get all the strength out of the spawn. Tae water should be given at a temperature of 90 degs. or so, and should be strengthened with something in the way of stimulants; salt is good in small quantities, and sulphate of ammonia acts very quickly. In some houses covering is seldom required, but where there is any fluctuation a covering of litter is sometimes useful.

Roses Under Glass.

These will be moving now, even where no fire-heat is used. The young growth is very beautiful if kept free from insects, and to do this it will be necessary to use the vaporiser when flies first appear, and perhaps a second time, just as the buds begin to expand. Then both blooms and foliage will be fresh and sweet.

Window Gardening.

As bulbs go out of bloom move to a cool-frame, or plunge out in the garden. Unless plants are much potbound I should not repot anything yet. The evils of early potting are the danger of overwatering and souring the new soil before the roots have worked into it. Cactuses may be brought into the light, and have some water where required.

Outdoor Garden.

If you have a lawn keep it as open as possible, especially near the house. But it does not follow there should not be tree or shrub growth upon it, but they should not be common things that can be seen in the woods everywhere. The broad leaved Weeping Elm is a very good shade tree, and shade is always desirable in our short bursts of hot weather; but the tree and shrub growth of a place and the arrangement of the flowering plants should bear some relation to the size of the place and character of the ground. There is every appearance of a change in the weather. In a very short time the spring gardens will be very bright with bulbs and other spring flowers. The Megaseas, formerly known as the large-leaved Saxifragas, are charming now in a group on a bank sheltered with shrubs. We are trying to naturalise on a rough lawn a lot of Chrysanthemum latifolium. It is the hardiest and strongest grower of the whole family. It is too soon yet to sow annuals except the very hardiest things, such as Virginian Stock.

Fruit Garden.

There is a promise of plenty of blossoms on Peach trees if the weather does not come too sharp. After a winter of unexampled mildness it will be well to have protecting materials handy to shelter in good time. As a rule, I never apply shelter till the blossoms begin to expand, but this is an exceptional season, and unusual things may happen. But the young wood was well ripened, and will stand a good deal of frost without injury. Peaches in the early house are now getting forward, and a good deal of disbudding has been done. The trees in the late houses will soon be showing colour; with a genial temperature and suitable ventilation there should be no difficulty in getting a good set. Shake the trellis about now to distribute the pollen, and get on with the disbudding in good time. If any tree appears of a weakly habit and the blossoms small, disbud early and persistently till the blossoms are set. Hamburghs and Foster's Seedling as pot-Vines will be ready for thinning even when started late in December and not hurried. Stop the young wood of Figs in pots when five perfect leaves have been formed. If more shoots have started than are required, disbud so that there need be no crowding. It will be better not to trust to Strawberries setting unaided at present.

Vegetable Garden.

Take advantage of suitable weather to get in the necessary early crops, which are usually only planted in small quantities. Onions, maincrop, may be sown end of February if the land is in a suitable condition. Where a few seeds of Ailsa Craig or other exhibition kind were raised in heat they will require careful management to keep the young plants sturdy and robust till it is time to plant out. Of course, those who grow exhibition Onions are always pottering about among them top-dressing and giving liquid manure. If frost comes suddenly Broccoli unprotected will soon be a mass of rottenness. Get Celery and Brussels Sprouts into as small space as possible; they will keep very well laid somewhat deeply in a cool, shady place. Sow plenty of early Peas. Everyone has a favourite variety. A well-selected stock of William 1st will give satisfaction. Personally, I do not try new varieties, except in small quantities, and though, perhaps, I cannot so well write of the merits of new Peas as where they are grown largely, yet we make fewer mistakes. The fact is, if Pea raisers were to rest on their oars for half a-dozen years and not give us anything new, we should find our true position as regards new varieties in that. In point of fact, it is chiefly wealthy amateurs who buy the new Peas.

E. Hobday.

* *In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

February 21st.—Fixed the poles to Peach and Apricot walls to receive the nets when the flowers expand. During a long series of years we have noted the opening of the first Apricot blooms, which has varied from the 6th to the 13th of March. Perhaps this season may establish a record for earliness if the mild weather continues. Finished repairing turf on tennis lawns; the roller is used very freely after rain.

February 22nd.—Repotted Ferns, dividing those of which more stock is required. But this refers more especially to those kinds which do not produce fertile fronds, or but sparingly. All those which produce spores freely are best raised in that way, as seedlings make the best plants. Put in more cuttings of Chrysanthemums. These are not expected to produce first-class exhibition blooms, but we have very good blooms on these late struck plants—one bloom on a plant in a 7-inch pot.

February 23rd.—Thinned Grapes on pot-Vines. Stopped and tied down shoots in second house, the Vines in which are permanent. In this house there are a couple of Vines of Madresfield Court Muscat, and the same number of Buckland Sweetwater; this requires careful management as the skin is so thin, and in pruning we find it best to prune to large, robust buds, even at the expense of long spurs. Looked over early Peach-house, and thinned fruits on the underside.

February 24th.—Planted out more hardy edging plants. It takes several days to get all the work done. There is one large bed far away across the lawn which is usually edged with the variegated Coltsfoot, and this plant does not usually start into growth before end of March or beginning of April, and when the young offsets appear they may be yards away from where they were planted, as the creeping roots travel a long way.

February 25th.—Planted more early and second-early Peas and Beans and Potatoes. Tied a string of matting closely round early Cabbages on warm border, and drew a little more earth up to the rim. Thinned Carrots on hot-bed; these are sown broadcast, and before they get crowded they are thinned to 1 inch apart, and a little very fine warm soil scattered over them through the sieve to firm the little plants a bit in the bed.

February 26th.—Moved a lot of plants to the conservatory, and those past their best brought away. Plants in the room are looked at every morning, and valuable specimens are removed before any harm is done. All our early-struck Chrysanthemums have been moved to a cool, light house. A good many of them have been there for weeks without fire-heat. They cannot now be too sturdily grown.

ORCHIDS.

Cœlogyne ocellata, C. Schilleriana, etc *(L. E. M.)*.—Cœlogyne ocellata will grow thoroughly well if placed at the warmest end of the cool or Odontoglossum-house. It requires almost unlimited supplies of water at the roots the whole year round. Keep the plant in a position where it will obtain plenty of light, but not actual sunshine. At the present time the flower-spikes will have made considerable progress, and as they are very easily injured by anything touching them, it will be wise to give the plant an isolated position. It grows well in pots, and roots freely in the ordinary Orchid compost. The small dwarf-growing C. Schilleriana, whose pseudo-bulbs are generally leafless, should be securely fastened on to a piece of Apple-wood with the outside bark taken off, or on to a Teak-wood raft. This plant will also grow in the cool-house, and, like C. ocellata, requires a plentiful supply of water at all times. Brassavola glauca thrives best when placed in shallow Teak-wood baskets, with only a very small quantity of peat and Moss to root in. It should be grown suspended in the Cattleya-house. During growth water should be afforded when the compost is dry, but when the plant is at rest only give just sufficient to prevent the pseudo-bulbs from shrinking.—W., *B.*

Cœlogyne cristata *(H. Flewitt)*.—This lovely species has become exceedingly popular during the past few years, and it is certainly deserving of popularity, seeing that it is in many ways adapted for all classes of cultivators. C. cristata is a native of the lower Himalayan zone, at elevations ranging from 4,500 feet to 7,500 feet. Consequently the temperature of a warm greenhouse or intermediate-house will be sufficient for it. In summer, when the plants are in full growth, a temperature ranging from 60 degs. to 70 degs. will suit it, but after the bulbs are completed, and throughout the resting season, the temperature should be from 50 degs. to 60 degs., the higher figure is necessary only when the weather is mild, and during cold, frosty weather the lower temperature is best. At the present time many plants of this species are in bloom, and henceforth, until growth recommences, water the plants very carefully, affording just sufficient to keep the pseudo-bulbs from shrivelling. About the end of February or the beginning of March the plants generally start into growth. When this takes place then is the proper time to re-pot the plants if they require it. Well-established plants that are in receptacles sufficiently large for their needs should not be unnecessarily disturbed at the roots. Such plants that require larger pots or pans should be allowed to become comparatively dry for a day or two previous to the operation. The drainage must be ample and free, and the rooting material should consist of equal parts of peat and Sphagnum Moss, and a few lumps of rough turfy loam, intermixing with it a moderate quantity of crocks or charcoal. When re-potting see that the pseudo-bulbs are well elevated above the rim

of the pot. After repotting the bulbs may shrivel slightly, but on no account must heavy waterings be given, or the old roots will decay. An occasional syringing overhead will be sufficient for a few weeks, also a daily syringing between the pots will be beneficial. When well rooted, and the growths are progressing favourably, the plants delight to have a thorough soaking at the root each time the compost becomes dry. A light shading is necessary when the sun is powerful, and at other times let the plants have all the light possible.—W., *B.*

Treatment of Orchids (*Novice*).—The temperature of your house, 50 degs. by night and 60 degs. by day—70 degs. with sunshine—is rather too warm for Masdevallia Davisi, also for Odontoglossum grande. Five degs. less would be more suited to their requirements. The former species blooms during the early spring months, the latter usually produces its flowers from September to January. For Cœlogyne cristata see answer to H. Flewitt. Cattleya Mendeli, C. Mossiæ, Lælia purpurata, and Phaius grandifolius all flower during the month of May, Cattleya Gaskelliana in August, C. labiata during autumn, C. Trianæ in spring, Dendrobium nobile late winter, and Cypripedium insigne and its varieties in December. The best time for repotting any of the above species is immediately growth commences. "The Amateur Orchid Cultivator's Guide Book," by H. A. Burberry, we think would suit your requirements.—W., *B.*

2728.—**Growing Cotton** (Gossypium).—The Cotton-plant is very easy to grow. Sow the seeds early in March (not soaked), in a mixture of sandy soil, placing the seed in the centre of a thumb-pot. Cover seeds half-an-inch deep with soil and place in gentle heat. The seedlings will appear in about four days. Continue to pot on until the sized pots in which they are to flower in is reached. The last shift should be into a 5-inch pot. The plants have a shrubby appearance, and bloom and ripen pods at end of September. After the bloom is over a pod forms, in size and shape like a hen's egg, in which is enclosed the seeds and raw Cotton, much resembling wadding. It is worth growing for its beautiful sulphur-coloured flowers, like those of a single Camellia.—E. Vogel, *Kings' Worthy.*

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OUTDOOR PLANTS.

NARCISSI IN THE FLOWER-BORDER.

In the accompanying illustration the value of the stronger-growing Trumpet Daffodils in the flower-border is well exemplified. Perhaps none of this section are more striking when massed for effect than the bicolors, of which Horsfieldi and Empress are two of the best-known and most worthy examples for general garden purposes. Finer varieties, such as Weardale Perfection, Ellen Willmot, Mrs. Walter Ware, and J. M. B. Camm are of later introduction, but are, at present, quoted at prices that preclude their general use. Beautiful as are the Golden Trumpet Daffodils, some of the handsomer varieties of which section are Emperor, maximus, and Golden Spur, their individual flowers do not afford the attractive contrast furnished by the bicolors, whose golden, wide-mouthed trumpets are, as may be seen from the illustration, so finely thrown up by the background of their sulphur-white perianths, while the curving, glaucous leafage completes a charming colour-scheme. In the foreground the Polyanthuses are in full bloom, the combination of these Primroses with the host of noble Daffodils forming a delightful spring picture. A border of hardy spring flowers, such as is here represented, is within the reach of everyone, but is all too seldom seen. S. W. F.

A border of Sir Watkin and Horsfield's Daffodils. From a photograph by Mr. Geo. Black, Kinblethmont, Arbroath, N B.

PLANTING A BORDER.

"B. T. W." would probably find Tea Roses preferable to Hybrid Perpetuals in the long border described. The latter varieties only bloom for a month in the summer, while the Teas have a long season of autumnal beauty. The delicate colour-tones of these Roses are also delightful, though they lack the brilliant tints of the Hybrid Perpetuals. The formation of another long border by the side of the gravel-walk is a good idea, but the cutting up the lawn between the two borders into numerous small beds would produce an impression of pettiness which should, if possible, be avoided. Two simple oblong or oval beds—one at each end of the lawn—between the long borders, would not be open to this objection. The proposed new, long border, facing the gravel-path, should stand back some little way from the gravel—for preference 5 feet or 6 feet—a wide strip of Grass showing off the flowers to far better effect than the narrow edging of turf, 1 foot to 2 feet wide, so often seen, besides being pleasant to the feet in the summer-time. The border should be at least 6 feet wide—8 feet would be better. Narrow borders give no scope for artistic arrangements. In making the borders and beds care should be taken to see that they are deeply trenched and well manured, as, if this is well done at the beginning, they will not need re-making for some time, a mulching of manure in the autumn and waterings with liquid fertilisers in the summer being sufficient to keep them in good heart. "B. T. W." is right in her surmise that the soil in the Isle of Wight is productive and will grow well the subjects she requires for furnishing her garden. There is a wide choice in herbaceous plants. Naturally, some varieties of the Lily family should be planted, and as the white Madonna Lily (L. candidum), the Orange Lily (L. croceum), Lilium excelsum, sometimes sold under the title of excelsum, buff, the Scarlet Turk's-cap Lily (L. chalcedonicum), the white Martagon Lily (L. Martagon album), and L. davuricum, of which there are many choice forms, all possessing orange-red spotted flowers. The Lilies should be planted in clumps of from six to ten bulbs, the individual bulbs being distant 3 inches to 4 inches from each other. Irises, both of the bulbous and flag sections, should be made use of. The Spanish Irises (I. Xiphium) are very graceful, and the self colours are charming. The splashed and striped varieties should, however, be avoided, as the effect is inferior. Good varieties of Spanish Irises are Canary Bird, yellow; Golden King, orange; Snow Queen, white; and Celestial, blue. These should be planted in clumps of from one to two dozen, each variety being kept separate.

English Irises (I. xiphoides) are very ornamental, and of these, again, only self-coloured should be used. The colours are white, purple, blue, and lavender; but different firms sell the same varieties under various names. The Flag Irises afford a charming assortment of colours, good varieties being Princess of Wales, white; aurea, golden; flavescens, pale yellow; florentina, white, changing to pale lavender; atropurpurea, dark purple; pallida and pallida dalmatica, different shades of lavender, sweetly scented; Queen of the May, rose-lilac, white, feathered blue; Victorine, purple and white; and Darius, purple and gold. These Flag Irises do not all bloom at precisely the same time, but this is not a *sine quâ non* in the herbaceous border, which is never a blaze of colour from end to end, but in which tints succeed tints from spring to autumn. The giant Oriental Poppies, with their great flowers of vivid scarlet, are very effective, as are the dwarf Iceland Poppies in their three colours—yellow, orange, and white. The Lyre-flower (Dicentra spectabilis) is a handsome plant, but both this and the Oriental Poppy should have some later flowering subjects planted in front of them to hide their withering foliage. For this purpose the white Japanese Anemone, the sweet-scented Tobacco-plant (Nicotiana affinis), perennial in the south, and the less robust-growing Starworts or Michaelmas Daisies, such as the forms of Aster cordifolius and A. ericoides, will be found suitable. Of the stronger-growing Starworts, Archer Hind, Harpur-Crewe, and puniceus pulcherrimus are of exceptional merit. The white Galega is a handsome perennial, which bears countless heads of Pea-like blossoms during the summer, and grows to a height of 4 feet. Other effective plants of taller growth are the Perennial Sunflowers, of which Helianthus rigidus Miss Mellish, H. lætiflorus, H. multiflorus, and H. m. Soleil d'Or are good examples, and the white Daisy-like Pyrethrum uliginosum, all of which are autumn bloomers. The hybrid Alstrœmerias are lovely flowers, ranging in suave colour gradations from crimson to cream; their roots should be planted at a

depth of 6 inches, and a breadth of these plants will increase in beauty for years. They may be easily raised from seed, but will not commence to flower until the second year. The hybrid Aquilegias are also very beautiful, and though not to be confidently treated as perennials, may have their ranks replenished yearly by seedling plants grown in the kitchen garden. The old double white Rocket, with its sweet perfume, is well worthy a place in the border, while Campanulas, such as C. persicifolia alba and its double variety, C. grandis and C. g. alba, the Chimney Campanula and C. glomerata, the handsome scarlet Lychnis chalcedonica, the golden Coreopsis grandiflora, Inula glandulosa, Gaillardia grandiflora, Erigeron speciosus, with lilac, golden-centred flowers, Day Lilies in variety, Doronicum plantagineum excelsum, and the herbaceous Phloxes in decided colours, are all excellent for the hardy plant border, and such subjects as the scarlet herbaceous Lobelia, which in the Isle of Wight might probably have to be lifted and grown in a frame during the winter, as it appears hardy in few soils but those that are heavy and moisture-retaining, and the Tigridias are so beautiful that they should be given a trial. Montbretia crocosmiæflora, with its scapes of orange-scarlet blossoms, is invaluable in the autumn and is perfectly hardy. On either side the Lilies and herbaceous Pæonies may be planted, as even when their foliage meets the Lilies will benefit rather than suffer from their proximity. The following are good varieties: Eugene Verdier, fragrans, Madame Chaumy, Madame Lebon, Jeanne d'Arc, Leoni, Princess Clothilde, Reine des Français, and Whitleyi; many of these are sweetly scented. Close to the Pæonies the stronger-growing Narcissi may be planted, as their season of bloom will be past before the leafage of the Pæonies interferes with them. Such varieties as Emperor, maximus, Golden Spur, Horsfieldi, Sir Watkin, Queen of Spain, Stella, Cynosure, and Barri conspicuus will be found reliable. In like positions Tulips may also be grown. Effective varieties are Vermilion Brilliant (yellow and white), Pottebakker, and Cottage Maid.

In laying out mixed borders plants should be arranged in groups rather than in lines. Lines invariably render a border stiff and formal, unless, indeed, the method of line-planting advocated a short time since by a believer in that system be followed, a method which consisted in planting the taller subjects in clumps at the back of the border, the medium-sized in clumps in the middle, and the dwarf-growing plants in clumps in the front, when the effect on the eye would not be that of lines, but of a series of groups—a very different matter. Whilst, however, in planting our borders we should be careful to avoid formal lines, the system of dotting plants singly over the surface should be as rigidly abstained from. The effect produced by this method of planting can never be satisfactory, and creates in the mind of the usual observer the false impression that the mixed border must be a hopeless muddle rather than the thing of beauty it can and should be.

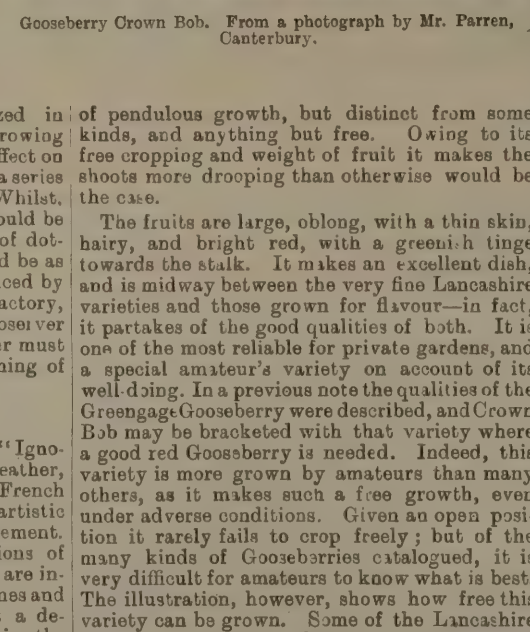
Plants for carpet-bedding.—"Ignorant" might raise Lobelia, Golden Feather, Stocks, Clarkias, Eschscholtzias, and French Marigolds. Carpet-bedding is a most inartistic and unnatural form of flower arrangement. Simple breadths of colour, or gradations of colour merging softly into allied tints, are infinitely preferable to crude contrasts in lines and angles. However, if "Ignoramus" is a determined convert to the "Geometry in the Garden" heresy, all he has to do is to sit down, with compass and pencil, and evolve diagrams, which he can, later on, reproduce in his flower-beds. Begonia and Gloxinia tubers started in heat in April will form good flowering plants in July.

2724.—**Treatment of Box edging.**—Perhaps my experience might be of some help I came into possession of a garden in Ireland where the Box-edging was 2 feet high and equally wide. It was hopeless to cut it down as there would have been only thick stumps. I took it all up, and nipped down the young shoots of the Box, putting them in bundles, and then measured the exact width of path wished for. I stretched a garden line along the path, and made a straight cut down with a spade at border side of line, and then laid in the Box deeply and evenly, letting it rest against the garden line, and planted it very firmly. Any refuse such as old mortar and coarse earth was used, and lastly drew over some of the soil of border. I then removed the garden lines. I had a nice neat edge. I planted some in spring and finished in autumn. It was clipped when there was a fresh growth.—NORTH DEVON.

FRUIT.

GOOSEBERRY CROWN BOB.

MOST amateurs grow the Gooseberry, but all do not get such good crops as they desire, for various reasons; one being they do not feed, allowing the plants to occupy the same position for many years, and give little assistance in the way of manures. The variety illustrated, the Crown Bob, is an old one, but, for certain purposes, cannot be beaten, being of excellent flavour, and though considered a small variety in comparison to some of the Lancashire berries, is welcome for dessert, for keeping late on the trees, and for general culture. The variety, Crown Bob, is of pendulous growth, but distinct from some kinds, and anything but free. Owing to its free cropping and weight of fruit it makes the shoots more drooping than otherwise would be the case.



Gooseberry Crown Bob. From a photograph by Mr. Parren, Canterbury.

The fruits are large, oblong, with a thin skin, hairy, and bright red, with a greenish tinge towards the stalk. It makes an excellent dish, and is midway between the very fine Lancashire varieties and those grown for flavour—in fact, it partakes of the good qualities of both. It is one of the most reliable for private gardens, and a special amateur's variety on account of its well-doing. In a previous note the qualities of the Greengage Gooseberry were described, and Crown Bob may be bracketed with that variety where a good red Gooseberry is needed. Indeed, this variety is more grown by amateurs than many others, as it makes such a free growth, even under adverse conditions. Given an open position it rarely fails to crop freely; but of the many kinds of Gooseberries catalogued, it is very difficult for amateurs to know what is best. The illustration, however, shows how free this variety can be grown. Some of the Lancashire kinds are not too free, but grow so low on the ground that without support it is difficult to gather the fruit or keep it from the soil. This variety, though pendulous, is fairly strong.

As regards culture, I shall be brief. I have on previous occasions touched upon this point, but the subject at this date is seasonable as the pruning is best done now, birds being so fond of the buds that if pruned early they often rob the trees of the crops before their ravages are discovered. There is less pruning with the large Gooseberries than the small kinds, mere thinning out of wood and removing that close to soil giving the trees room to develop their fruits. I have touched upon feeding, and this is a point often neglected. How often one sees Gooseberry-trees occupying the same position for many years, with the result that the soil is so impoverished that it cannot produce fine fruits. Amateurs may, with advantage, give the Gooseberry some food in the way of liquid-manure or a good winter dressing of well-decayed manure. Many trees suffer for want of food, and others from bad pruning. If thinning is neglected no one can expect good results. I have seen these trees cut over with shears with this result, but there was a forest of wood and very little fruit. The next season it is far better to thin out than cut the trees like a mop. Feeding may be done at other seasons besides winter. For instance, no one can ever err in giving liquid-manure freely, and often the evils these trees are heir to are caused by dryness at the root or want of food. A mulch in the spring after pruning and liquid-manures in the hot summer months are amply repaid. There will be no red-spider, and the fruits will be finer and better flavoured.

W.

MIXED VINES.

THE exigencies of space make it often necessary to plant a mixed lot of Vines in one house, but this should not be done without due consideration and knowledge of the habit of each kind chosen. It is scarcely ever advisable to plant strong-growing Vines among weaker ones if the latter are wanted to do well, especially when the roots of all are to be confined to a limited space, or say to an inside border only. Before I knew the specially strong-growing habit of Gros Maroc, a Grape which I had previously only seen and admired on the exhibition table, I was induced to include it in a set of Vines, principally Muscat of Alexandria, which I was planting some years ago. The Maroc was placed second from one end of the house and sandwiched between two Muscats, with the result that these latter have suffered considerably from the robbing propensity of their gross-growing neighbour. The soil here is not altogether well suited for Grape growing, and shanking is always more or less in evidence on the Muscats, but has been so pronounced on the two Vines which flanked the Gros Maroc that I concluded that their roots had by some means found their way through the drainage into the bad subsoil, as the bottom of the border had not been concreted. The berries, too, on these Vines were smaller than those on other Vines of the same variety, so I recently determined to open up the border and make a thorough examination of the roots, which on being done soon revealed the fact that there were roots in plenty and none had gone into the subsoil, but those of the Maroc had ramified through the border right and left, and had robbed the other occupants of their proper share of nutriment. The Muscat-roots were neither so plentiful nor so strong as were those on the Vines at the further end of the house. This would not so much matter if the crops produced by the Maroc were in proportion to its strength, but my experience is that, whatever system of pruning is relied on, this Grape is by no means a heavy cropper, though its berries are fine and finish well. A Black Hamburgh in the same position would carry a much heavier crop without infringing on its neighbour's food supply to so great an extent, and I cannot help thinking that Gros Maroc is an over-rated Grape, except to the exhibitor and to those who have room enough at disposal to give it a house to itself. I find that it is not nearly such a good keeper as is Black Alicante, nor so good for general purposes, and I have decided to cut it out, run up a rod from one of the Muscats in its place, and avoid in future extra strong growing varieties in a mixed vinery, unless I have a good outside border in which they can run at will.

T. J. C.

Crocus Imperati.—Small circular groups of this interesting species, together with such as Sieberi with bright blue-purple flowers, the well-known susianus with blossoms of gold, striped brown, and Tommasinianus, a charming species with pale lavender flowers, are now blossoming.

INDOOR PLANTS.

AZALEAS.

Azaleas, with fair treatment and reasonable attention to their well-being, never fail to do well, and to outlive the greater portion of other hard-wooded kinds grown in pots. In fact, Azaleas are amongst the longest lived of the various tribes of greenhouse plants. In proof of this I may instance several large collections that are in the hands of some of the market growers near London, many of the specimens in which are known to be fifty years old. They consist mostly of the old white indica alba and Fielder's White, which is only slightly different from the original sort. The plants in question are as full of vigour as it is possible for them ever to have been. They make shoots from 8 inches to 15 inches in length annually, only a small percentage of which fail to flower. The whole of the flowers are cut with from 4 inches to 6 inches of wood attached. The plants are models of skilful cultivation; many of them run from 7 feet in height to 9 feet or 10 feet in diameter, though they are subjected to hard forcing, every year coming into bloom at the beginning of November and onward up to the commencement of the following year. As soon as all the flowers are cut, the plants are started into growth in heat and kept there until the buds are as big and plump as large Apple-pips, after which, to prevent their blooming before the flowers are wanted, the houses are either thrown open or the plants are moved to the open air. But when the latter course is followed with plants that are forced to come in early, and which are afterwards kept for six months under glass with fire-heat until the weather comes hot, it has a widely different effect to that which follows when plants that do not bloom until the end of the winter or in spring are put out either as soon as they are well out of bloom or whilst the young wood and leaves are both soft, and the ripening process has not commenced. Yet this is the way that in nine cases out of ten Azaleas are treated. The outcome of this barbarous exposure of plants that have flowered at the end of winter or in spring, when, to do justice to them, all the time that intervenes between their going out of bloom and the close of summer they should be in a genial growing temperature under glass, is that Azaleas are, as a rule, the most unhappy-looking things to be seen in most gardens. One of the results of thus turning out the plants directly the danger from frost is over or soon after is that they never attain the size they should, although the annual growth is not sufficient to admit of much in the way of cutting, unless the flowers are taken off with a scrap of wood that makes them all but useless.

Another source of weakness that Azaleas, in common with most other hard-wooded plants, suffer from is want of sufficient nutriment. In the case of pot-plants of the numerous kinds that bear partial shaking out and repotting annually, the old material which has become exhausted is to a great extent got rid of, and its place supplied by new. With Azaleas and other things of a like description, the nature of which is such that they will not submit to be treated in this way, the roots remain for years in the same soil, and unless something is done to make up for what the roots extract from it, the whole becomes so poor that the plants cannot do more than exist in it. This especially is what takes place with old specimens that, after being put into pots as large as it is convenient to give them, shortly become dependent on what they receive in the shape of manure in some form. That old Azaleas can be kept for any length of time full of strength and vigour I have proved with specimens that have remained undisturbed in the same soil for ten years, and at the end of the time they made as much wood as when they were young. It may be well here to say that peat of even the best quality is not rich enough to enable Azaleas to make the growth they should do. The assistance that is required in this way to either get young Azaleas on quickly or to keep up the vigour of old plants is much more than seems to be generally supposed. When ordinary manure-water is used for old specimens it should be given once a week during the time the plants are making their growth, and up to the time the wood is approaching a hard, mature condition and the buds are prominent. After this stage has been reached it is doubtful if manure in any shape does not do more harm than good. T.

Azalea Mrs. Turner (flowers pink margined with white). From a photograph by Mr. Metcalf, Mill House, Halifax.

Tuberous-rooted Begonias from seed (*Constant Subscriber*).—In raising tuberous Begonias from seed, bottom-heat and moist air are necessary. Where it is not possible to have a series of pipes running immediately below the propagating frame, fix up a temporary frame over the pipes at one end of the greenhouse. The pipes should be encased in the framework, and slates laid along the top of them, then a good layer of Cocoanut-fibre-refuse. This should be levelled carefully and always kept moist. The sides of the framework should always be a few inches above the level of the bed of Cocoanut-fibre, as this will prevent ill effects from chilling

draughts. A suitable soil is one composed of rotten leaf-mould, and adding thereto a small quantity of sandy-loam with sufficient silver-sand to keep the soil porous. These ingredients should be thoroughly mixed and passed through a fine sieve. After this has been done bake the compost for a considerable time, sufficiently long to destroy weeds in the soil. Then sow the seed without the risk of the small seeds and seedlings being interfered with. The coarser siftings of the soil should be retained, as they may be used to cover the crocks. Shallow pans are better than shallow boxes, and are easier to keep moist. Boxes invariably get dry, and the soil then fails to adhere to the sides, often resulting in many seeds being lost. The pans should be about 6 inches in diameter and an inch deep. One piece of potsherd over the hole in the bottom, and around this a handful of very small pieces, will suffice. The rougher parts of the siftings follow this—only a thin layer, and then comes the compost, almost level with the top of the pan. Make an even surface and then hold the pan in a pail of tepid water, so that the moisture may percolate up through the hole in the bottom of the pan, and then continue on through the soil. When the soil is thoroughly saturated remove the pan and let superfluous moisture drain away. It is then ready. Sowing the seed requires great care, and remember that it is very minute. A simple way of sowing it is to take half a sheet of note-paper and fold this in two, thus leaving a channel in the centre into which the seed should be placed. Place the paper with the seed in it in the left hand, and with a pencil in the other tap gently underneath the paper, thus causing the small seeds to drop off at the lower end of the channel. In this way go all over the surface of the soil, until it has the appearance of being covered with a dust-like substance. Do not cover the seed with soil, but place the pan in the frame, embedding it to the rim in the Cocoa-nut-fibre refuse. Then cover it with a sheet of glass or a frame-light. Place the pan in a rather dark position, but when the seedlings appear give all the light possible afterwards. Should the soil at any time get dry, water it in the same way as was done previous to the sowing. Picking off the seedlings should commence as soon as the first two leaves are conspicuous. Shallow boxes are then best, filled with the same kind of soil as before, and prepared in a similar way. The advantage of shallow pans and boxes is that there is less likelihood of the soil becoming sour, a frequent source of trouble when the soil is kept very moist, and there is little root action going on. When the soil is ready in the boxes make a number of holes about the depth of the seedlings, and drop the seedlings into these one by one. The simplest way to transfer the seedlings is to take a piece of wood about 4 inches to 6 inches in length, and a trifle larger than a lucifer match. Cut a V-piece out of the end; and this will give a small two-pronged fork. Place the fork between the stem of the seedling and immediately underneath the leaves. With the slightest pressure the seedling will part company with the soil, and may then be dropped into the hole prepared for it in the boxes. Place into other boxes as they get bigger, finally into pots or in the open border after all danger of frost is over. Only sow the best seed.

Rhododendron præcox—The greenhouse at this early season of the year owes much of its brightness to forced hardy plants, and among the many that can be used for the purpose none is more satisfactory of its kind than this hybrid Rhododendron. Naturally a very early bloomer—its flower-buds are bursting now in the open—it requires but little forcing. If it has been lifted from outside and potted in late autumn the protection of a mildly-heated frame will suffice to bring it into bloom by the middle of January. It should only be forced every alternate year, and it is a good plan to have a batch growing in the reserve ground, half of which may be potted up each autumn, forced, and planted out again after the flowers are past and the plants hardened off; they are thus given two seasons' growth before being disturbed again. This method is not only less troublesome than growing them permanently in pots, but they thrive and flower much better. Out-of-doors this hybrid flowers so early that it rarely escapes damage by frost, yet when it does it is one of the most beautiful of early-flowering shrubs.

THE SCILLAS.

Of the early spring-flowering bulbs the various species of Scilla are among the most important. Year by year they are becoming more popular, and large quantities have been planted with a view to naturalising them in woods and parks. The kinds employed for this purpose are the different varieties of S. bifolia and S. sibirica, and there is no reason why others, such as amœna and hispanica, should not be used in the same way. S. maritima and peruviana are not always hardy enough in some districts, so it is always safest to have specially prepared places for their reception. Most of the kinds just mentioned are easily increased by means of offsets from the parent bulbs, but as in most cases this is a slow process, seed where procurable should be resorted to. Scillas are of easy cultivation and succeed well in pots. They delight in a well-drained sandy loam and an open, somewhat sheltered situation; if planted in damp or strong soil they do not remain healthy. They require to be taken up every two or three years, separated, and replanted. The bulbs do not like to be kept long out of the ground; if so, they get dry, and when planted do not thrive and produce good spikes of flower.

S. AMŒNA (the Star Hyacinth)—This is a handsome robust-growing Scilla, which as regards outward appearance is simply an exaggerated sibirica. When full grown the leaves are about a foot long and pale yellowish-green, forming effective tufts, which associate well in the mixed border or on rock gardens with those of other plants. The flowers are dark porcelain-blue or violet, rather flat or turban-shaped, and born on scapes about a foot high. For edging shrubberies this species is well adapted, and as the leaves keep their singular colour for a length of time, it helps to vary the dull green of the shrubs. It flowers in April, and is a native of Levant.

S. BIFOLIA (the Early Scilla).—This, though perhaps not so commonly met with as the Siberian Scilla, is nevertheless quite as worthy of a place in our gardens. It seldom fails to produce its flowers a full fortnight before those of that species make their appearance, and, indeed, during mild winters and under favourable circumstances its welcome blooms may often be seen breaking the ground soon after midwinter if mild. As to position, that is immaterial, as it seems to succeed equally well in the open and under the shade of trees. One condition, however, is essential to its well-being, and that is, it must be left undisturbed to seed and increase as it likes. Of all the Scillas, bifolia has been perhaps the most prolific as regards varieties. Most of the other forms known in gardens are, without exception, advances on the type. S. præcox is a stronger grower than the common one, and has slightly broader leaves; the flowers, too, are larger and more abundant, and generally produced earlier. In purpureo-cœrulea the ovary and base of the segments are rosy-purple, gradually merging into blue, which becomes intense towards the tips, harmonising well with the black and gold-banded anthers. It is a free flowerer, and the blooms individually are nearly as large as a shilling. In the Taurian variety, S. b. taurica, the flowers are much larger than in S. bifolia, and, with the exception of the white base, greatly resemble those of some of the forms of Chionodoxa Luciliæ. The flowers vary from ten to twenty on each scape, and the leaves of this fine variety are larger and broader than those of S. bifolia, and do not confine themselves to the bifoliate character. The white form of S. b. alba, a pretty ivory-white form, has flowers not larger than those of the type, but they are freely produced. Others, many of which are in cultivation, are candida, carnea, rosea, compacta, maxima, metallica, pallida, etc.

S. NUTANS (the Wood Hyacinth), also known in gardens as Hyacinthus non-scriptus, is too well known to need detailed description, few large gardens being without their patch of Bluebells. This is, perhaps, the only Scilla in which the flowers are distinctly arranged on one side of the stem, thus giving it that gracefully drooping character which is so much admired. The common blue form is plentiful in many districts, but neither the rosy nor the white variety is found in any quantity, although both grow with the same freedom as the type. It flowers in May and June.

S. HISPANICA (the Spanish Scilla).—This, known in gardens under the name of S. campanulata, is a native of Portugal and Spain. It is one of the very finest early summer-flowering bulbs we have, and although for market its white variety is preferred, the old form is still plentiful and likely to hold its own where well established. It is easily distinguished from all others by its distinct, bell-shaped flowers and rather robust habit. The leaves are about a foot long, an inch broad, and sharp pointed; the flower-stalk, which is about a foot in height, bears a profusion of pale blue flowers, but in others they are azure-blue, violet, pink, and pure white, all having more or less recurved edges. It flowers in May and June.

S. ITALICA (the Italian Scilla).—This is remarkable for its pretty little rosettes of dark green lanceolate leaves, its pale blue flowers with darker coloured stamens, and the delicious fragrance which they emit early in the day. It rarely exceeds 8 inches or 10 inches in height, and though it will do well in a variety of soils, it seems to thrive and increase most in a light, sandy loam sheltered from east winds.

S. SIBIRICA (the Siberian Scilla).—This well merits the place which it has attained and which it has so long held—that of being foremost amongst dwarf spring-flowering bulbs. The peculiar porcelain-blue of its modest drooping flowers is quite unique at that early season, and mixed with Snowdrops they have a charming effect, while alone in large patches they are very striking. Wherever the soil is light and sandy this bulb may be had in perfection, either in the rock garden, in the flower border, or peeping from amongst the Grass by woodland walks, where it is most effective. It is not so sportive as its near neighbour, S. bifolia; although a few varieties have been obtained, few are distinct enough to merit attention. The Siberian Scilla is used extensively for forcing, which it seems to stand well, and is very ornamental in greenhouses early in the year. After forcing, instead of throwing away the bulbs, as is usually done, they should be planted out, where in the course of a year or two their usual vigour will be restored, when they may again be lifted and forced as before. By having three sets of bulbs a continual succession for forcing may be kept up without expense.

Amongst Scillas not generally found in gardens, but which are hardy enough in dry situations, may be named S. peruviana, a large species, with beautiful broad leaves, Yucca-like and very distinct; it stands well in sheltered nooks, or even in the open border in southern districts. The variety Clusi also stands well. S. maritima is properly a greenhouse species, but in the places indicated for S peruviana it may be grown outside without harm, though it rarely flowers. S. lilio-hyacintha is quite hardy, and well worth a place in the mixed border. S. hyacinthoides, S. pratensis (amethystina), S. obtusifolia (an Algerian species), autumnalis, patula and its various forms, including cernua and others, differ little from one another in general characters.

THE CHIONODOXAS.

Chionodoxas are certainly by far the most beautiful and useful of our early spring-flowering bulbs, and can be grown in English gardens more easily than was thought possible. In every garden where they have been established for a few years they have become veritable weeds, self-sown seedlings coming up everywhere even yards away from the original clump. We know well what they are capable of doing in the rock garden and the bulb border. Why not naturalise the surplus stock in the woodland and the wild garden? Their great hardiness, exceeding beauty, and the rapidity with which they increase, are all in favour of their establishment on our grassy slopes. Everyone at comparatively small expense may have masses of the Glory of the Snow, and no more beautiful, natural, or better way can be suggested. Any good garden soil suits the Chionodoxas well, and they have lately been much used for forcing for the greenhouse, etc., although too much heat weakens them, and their brilliancy to some extent is lost.

THE GLORY OF THE SNOW (C. Lucilia) is by far the most popular and best-known species of this comparatively modern class of early spring-flowering bulbs. Its value will be increased

Scilla patula.

Bluebells (Scilla nutans).

Glory of the Snow (Chionodoxa Luciliæ).

Siberian Scilla (S. sibirica).

Scilla Hughi.

Chionodoxa sardensis.

Spanish Scilla (S. campanulata).

Scilla amœna.

when we see it in bold breadths in our woodlands and grassy slopes, much in the way Snowdrops and Daffodils have been used in our own gardens. It is an extremely variable species in size as well as in the form and colour of its flowers, and there can be no mistake about the improvement, which is evident after a couple of years' cultivation in good rich soil. Newly-imported bulbs, as a rule, produce small and few flowers, but when really well established size and number are almost doubled. It is one of the hardiest bulbs we possess, and will stand any amount of frost without injury. Self-sown seedlings spring up everywhere, and this will hardly be regretted. It flowers during March and April. There is also a white-flowered form, but it is rare. C. Luciliæ var. Forbesi is apparently nothing more than a large, shy-flowering form of the above. C. grandiflora was first introduced to our notice under the name of C. gigantea. The whole plant is more robust than the type, the flowers larger and more numerous, and of a distinct soft violet-blue with a small white centre. It has not shown the slightest signs of reversion, and may be taken as a really distinct and constant form. It is also a native of Asia Minor.

C. SARDENSIS.—This is a charming variety. The flowers, though more numerous, are smaller than those of any mentioned above, but of a brilliant true gentian-blue, and altogether distinct from those of C. Luciliæ. The bulbs were found close to the ruins of the ancient town of Sardis at 4,000 feet to 5 000 feet above sea-level. It is perfectly hardy and a useful bulb for forcing.

C. TMOLUSI is, like C. Forbesi, a stronger, larger-flowered form, otherwise identical with the type.

C. NANA is a dwarf, numerous-flowered species from Crete. The flowers are very small, white or lilac. It is of little value compared with any of the above. C. cretica may be taken as a larger-flowered form of C. nana, with blue and white flowers. Both are natives of Crete.

TREES AND SHRUBS.

SHRUBS FOR HEDGES.

THERE is a large variety of subjects suitable for hedge plants to choose from, and a brief consideration of some of those best adapted for the purpose may be of use now that the planting season is here again. For obvious reasons hedges formed of shrubs of an evergreen character are usually preferred to those consisting of deciduous subjects. An evergreen hedge, if in good condition, is almost equally ornamental at all seasons of the year, while those of a deciduous character are leafless when the shelter they would otherwise afford is most required. Of all the hardy evergreen shrubs,

HOLLY, perhaps, forms the closest, strongest, and altogether best hedge. A well-grown Holly-hedge is not only at all times glossy and beautiful to look upon, but is practically both impenetrable and unclimbable. The chief disadvantage of Holly as a hedge-plant, however, is that it is naturally slow in growth, and it takes a good many years to obtain a good, close fence of any considerable size or height. The common

LAUREL is frequently employed as a hedge or screen plant in gardens, and though neither so strong or neat as Holly, it is much more rapid in growth, and forms a fairly good fence, especially where there is room for the plants to become tolerably well developed. A Laurel-hedge must not, however, be trimmed with shears at any time, the mutilated leaves being most unsightly, so that all pruning must be done with a sharp knife, taking care not to cut any leaves in two. It is worthy of remark that both the Caucasian and the round-leaved (rotundifolia) species of Laurel are hardier than the common kind, and therefore less liable to injury from severe frosts and cold winds. The

EVERGREEN PRIVET (so-called), though very frequently employed, and certainly rapid in growth, makes a very poor hedge, and is, at best, an evil-smelling and hungry subject, completely exhausting the soil around it as far as the roots extend. Its only recommendation is that it will grow in any kind of soil, however poor or rubbishy. Some of the rarer species of Privet, notably Ligustrum lucidum, are fairly handsome shrubs, but the common kinds have very little to recommend them. But of all the evergreen shrubs in cultivation (coniferous subjects excepted), decidedly the most handsome and generally useful for the purpose under consideration is the

JAPANESE EUONYMUS, the common or plain green-leaved kind being best adapted for the formation of hedges, screens, etc. The variegated varieties, both golden and silver (of which the broad-leaved golden kind is much the best and most ornamental), are naturally even more handsome and effective, but, unfortunately, they are slower in growth, and being liable to revert to the green form here and there, are, on the whole, not so suitable as the common form, and a really good and even hedge is seldom met with. But the common form is perfectly constant, fairly rapid in growth, and when kept well trimmed and cared for makes a close, neat, and most elegant fence or screen, not perhaps so strong and impenetrable as a Holly-hedge, but even more uncommon and attractive. Though of a robust and vigorous nature, the Euonymus is, unfortunately, not sufficiently hardy to succeed in all parts of the country, but where it does thrive, which is chiefly near the sea, and more particularly along the south and south-western coasts, and in some of the warmer counties inland, there is scarcely anything else to equal it as a hedge-plant. In most maritime localities the foliage assumes a beautiful gloss, as if every leaf had been polished; it is also a capital town plant, thriving thoroughly in and near London and other large and smoky towns, if not too far north, but here the foliage, of course, loses its beautiful gloss and wears a comparatively dingy appearance. It is easily increased by means of cuttings, which should be inserted in frames or handlights in the autumn. Even the variegated forms root readily in this way, though requiring more time, and, indeed, they often make so little progress at first when on their own roots that some growers graft them on the common stock, in order to secure large plants more quickly; but good-sized plants of any of the variegated kinds are always scarce, and command good prices. The

SWEET BAY (Laurus nobilis) also forms a splendid hedge where it succeeds, but little, if at all, inferior to the Euonymus in general effectiveness. It requires, however, to be kept well pruned, as where it does well it is apt to grow out of bounds in the course of a few years, but, as with the Laurel, a knife should be used instead of shears for trimming it. In common with the Euonymus it is not absolutely hardy, being liable to be injured severely in hard winters in the north and colder districts, but thriving luxuriantly in the more southern and western counties, especially near the sea. In some places it assumes the dimensions of a small tree, and I have seen hedges of it nearly 10 feet in height and quite 4 feet through.

There is yet one other handsome evergreen shrub that may be employed as a hedge-plant, and though affording a perhaps not very strong fence is at once decidedly handsome and very uncommon. This is the glossy-leaved Escallonia macrantha, which in beauty of foliage rivals the Japanese Euonymus, with the additional attraction of producing pretty rosy-red blossoms freely in the summer. Though, like the Euonymus, this plant is too tender for northern or cold localities, it grows luxuriantly in the south and west, particularly near the sea, and I have seen it in great beauty near Swansea and elsewhere. Of coniferous plants the

AMERICAN ARBOR-VITÆ (Thuja occidentalis) forms a very neat and close hedge, and is much used to form screens from the wind, etc., in nurseries. Thuja Lobbi also makes a good fence in a comparatively short time, and a few others of this class are also occasionally employed. The common Yew makes a splendid hedge, unusually close and strong, and when kept regularly clipped affords a remarkably neat and uniform appearance—too much so, indeed, for true beauty. Like the Holly, however, it is slow in growth.

Of deciduous subjects the two best for the purpose under consideration are undoubtedly the common Hawthorn or White Thorn—usually known, when employed in this connection, as Quick, and the Myrobalan or Cherry Plum. The many good qualities of the first-named subject are too well known to need recapitulation, but the latter has also some excellent points, and is neither known or planted to the extent its merits deserve. It grows freely and rapidly in any kind of soil, however poor, and quickly forms a strong and almost impenetrable hedge, especially as on the two-year-old wood long and sharp thorns are freely produced. When allowed to grow with sufficient freedom it bears, after a certain age, small round fruits of excellent flavour, and most useful for making tarts and preserving, but the frequent trimming required to ensure a neat hedge of course prevents the formation of more than a few scattered fruits, though it is a nice plan, in many cases, to let a plant here and there become properly developed, and in favourable seasons these will fruit freely.

A very graceful, if not particularly strong, fence is produced by the feathery-foliaged Tamarisk. Though not a particularly robust plant, this withstands the brunt of the sea breeze as well as, if not better, than anything else. It thrives chiefly in mild districts near the southern and western coasts, and where it does succeed, should be freely planted wherever a line or screen of elegant foliage is desired. Lastly, the

FUCHSIA makes one of the prettiest hedges imaginable, and in mild districts where it grows freely and is not cut down annually by the frost in winter nothing more charming can be employed for this purpose. In the Isle of Man the elegant F. gracilis grows almost wild, and forms hedges almost as freely as common Quick or Privet, while F. Riccartoni, F. corallina, and a few others, are also well adapted for the same purpose. An excellent hedge may also be formed of some free-growing Roses, where these do well. The best to plant with this object are the more vigorous Teas, such as Gloire de Dijon, Homer, Mme. Berard, etc. B. C. R.

STAPHYLEA COLOMBIERI.

THE Staphyleas are distinct hardy border shrubs of simple culture. The variety under notice is a cross between S. pinnata and S. colchica. It is a lovely free-flowering variety, and much better than either of its parents. Its large pure white flowers, with yellow anthers, are borne on long, drooping racemes, and I have frequently counted as many as thirty-five on a single raceme. In addition to its free-flowering qualities it is also a vigorous grower. For forcing purposes S. colchica is well known, as its pearly-white blossoms respond to gentle heat very early in the year. If the plants have not been previously grown in pots they should be lifted from the open ground immediately the leaves have fallen, and planted in pots of a suitable size, and plunged in a bed of ashes in the open air for a time. They should be taken to heat in batches, varying in number according to the requirements of the place, and be brought along gradually, and not, as is very often the case, subjected to a sharp heat at first. The syringe should be used freely amongst the top growth, and the roots should never be allowed to want for water. When the flowers are being formed the floral display will be considerably prolonged if the plants are removed to a cooler house. After its flowering period is over the necessary pruning should be done and the plants encouraged to make fresh growths, and when they have been hardened off, plant out in a sunny spot so that the wood may be thoroughly ripened before winter sets in.

Evergreen Euonymus in berry.—As I believe it is rather unusual for the Evergreen Euonymus to fruit in this country, I send you some sprays from bushes growing close to the south wall of St. Edward's Church here (Netley Abbey). The berries are very abundant on two bushes.—M. PENNINGTON.

*** The specimens of E. japonicus sent were well berried and very attractive, the result of allowing the shrub free growth.

The height of Berberis Darwini.—Old specimens of Berberis Darwini attain a height of 20 feet. In the grounds of the Devon Rosery, Torquay, one of the first plants of this Barberry imported into England had, in 1896, exceeded this height, and had a diameter of considerably over 30 feet, although it was trimmed back every year. At the end of that year it was destroyed, as the space it occupied was required for other purposes.—F.

IVY-LEAVED PELARGONIUMS.

For decoration the best varieties of this section of Pelargoniums are quite equal to the zonals, and in the character of their growth are superior to them. In the colour of their flowers they range from pure white through the various shades of pink to red and dark crimson. The flowers of both the single and the double varieties of the Ivy-leaved Pelargoniums are in some respects preferable for cutting to those of the zonals, as they are less formal in shape. Grown in hanging baskets, with their branches allowed to droop, or trained so as to cover the bottom part as well as the top of the baskets, they are very effective. Like the zonals, they are not much troubled with insect pests, a matter worth taking into account, as, independent of the injury that is done by insects to such plants as they prey upon, their destruction and the means necessary for it occupy a considerable amount of time. The plants are free growers and equally free flowering. The soil they require is such as answers for the other kinds of Pelargoniums—good loam, with a fair amount of vegetable matter in it, enriched with plenty of rotten manure, adding sand in proportion to the amount which the loam naturally contains. In potting it is requisite, as with the other varieties of Pelargoniums, to make the soil solid; if left loose and insufficiently compressed the plants will not do well. Young examples will bloom nicely all through the summer; but it is when they have got a year older that they make a full display after having had their branches shortened in in the autumn. Pyramidal wire trellises are sometimes used for training them on, but a few neat sticks inserted just within the rims of the pots do as well. On no account should the shoots be trained too closely after the supports are sufficiently clothed, as it gives the specimens a stiff, formal appearance.

One of the best varieties is Souvenir de Charles Turner. Planted out in the open it does splendidly, but the best use for this kind is to train it on a balloon-shaped trellis, tying the shoots all over the wires, and then allowing the side shoots to push out and flower in their own way, a splendid mass of blossoms resulting. As a pillar plant, or for covering walls in glasshouses, there is no plant to surpass this, as the foliage is so good and the flowers are abundant. The colour of the flowers may best be described as a scarlet-magenta. Albert Crousse (cerise colour) is another lovely variety of rather stronger growth, and excellent for any purpose; Louis Thibaut (bright red) is a fine variety; Jeanne d'Arc (double white) is a splendid kind for pots, but, like most white Pelargoniums, its flowers get suffused with pink when grown in the open air; Mme. Crousse (salmon-rose) is a fine kind in colour and very free too; Mme. Thibaut (rose) is a lovely variety that cannot fail to please. The flowers shown in the illustration reveal the value of the Ivy-leaved Pelargonium when arranged in a vase. T.

Pelargonium Souv. de Charles Turner. From a photograph by Col. Taylor, Stanhope road, St. Albans.

Streptocarpi.—These useful flowering plants, although usually described as greenhouse subjects, often refuse to grow freely under perfectly cool treatment. Moreover, during winter the leaves invariably take on a rusty appearance, many of them dwindling away altogether. I could not induce them to make any headway when potted in spring until I gave them an intermediate temperature and a fair amount of moisture, since which the plants have usually given great satisfaction. In February I repot and stand the plants in a house having a night temperature of 60 degs., not giving too much water at the roots until growth commences, as I find them liable to rot at the base, the same as they will in winter if kept in a house from which frost is only just excluded. In a month from the time of potting plenty of new leaves had under the above treatment been made, but I allow them to remain in the intermediate-house until April, removing them then to a night temperature of 50 degs. This I have practised for some years and find the plants stand it well, some of mine being now very large and producing annually from fifty to one hundred trusses of bloom during the summer. I find, however, that the dark bluish strains have by far the most vigorous constitution, the paler and more delicately coloured varieties being weaker. I also find that during winter the plants must have only just sufficient root moisture to prevent the leaves from flagging. I would, however, not advise a lower temperature than 45 degs. when at rest, as a lower one often causes disease and death. Some advise the use of peat in their culture, but the soil my plants are growing in is a light fibrous loam with some leaf-mould and silver-sand added.—J.

CHRYSANTHEMUMS.

Chrysanthemums for market (*H. J. G.*).—We are pleased to reply to your query, although it is a long one. You state that you wish to grow your plants for market, and also want your plants to give you a return of about eight good blooms. This should not be a very difficult matter, as by attention to the requirements of the plants throughout successive seasons handsome blooms to the number you require should be forthcoming. We have divided your selection up into two distinct periods of flowering, so that you may know which sorts blossom early and those also blossoming late in the season. The mid-season sorts are Australie, Lady Hanham, Amos Perry, G. J. Warren (yellow Mme. Carnot), Mrs. G. W. Palmer, Mme. Carnot, President Harrison, Simplicity, Modesto, Ponderosum, Oceana, Pride of Exmouth, Duke of Wellington, General Roberts, and Mrs. Chas. Keyser. These sorts should be in the best possible condition during November; some slightly earlier than others, so that there should be a continuous display right throughout the month. Baron Hirsch is generally at its best during the latter half of October, and we should advise you to grow this sort strongly all through the season, and then to retain terminal buds. If you have not yet propagated your cuttings, do so without delay, and get the young plants well forward by repotting them when ready. By the middle of April, or perhaps a few days earlier, we should be disposed to pinch out the tip of each shoot, keeping the plants rather dry at the roots for a few days at this time. This will assist the new growths to break away from the base of the leaves, and when these are seen to be making progress—if the pots are full of roots—the plants should receive their next repotting. Never pinch the plants and repot at the same time. The double check is too much so early in the plant's life. Select three of the strongest shoots, as soon as this can satisfactorily be determined, and then any additional ones may be removed with a sharp knife. If time and space permit, tie out each shoot, as in this way the wood gets ripened so much better, and to a large extent ensures the development of the kind of growth capable of producing the best blooms. In the course of some two to three months these three selected shoots will each produce a bud (first "crown"-bud) in the point of their growths. When large enough, these buds should in each instance be removed, and the plants again kept on the dry side for a few days, and following such treatment there should appear in a short time other new growths from the base of the leaves (lateral growths); and, again, three of the strongest shoots should be retained, when they have grown sufficiently to determine this. By adopting this method each plant should give you nine strong shoots, from which you should have little difficulty in obtaining nine handsome flowers. The flowers are obtained, of course, from the buds retained which next appear in the points of the nine shoots, and are known as second "crown"-buds. Blooms developed from second "crown"-buds are invariably of good colour, exquisite form, and consequently of high quality—in fact, just the kind of bloom to realise high prices in the market, providing the supply is persistently kept up. When the pots in which the plants were finally potted become full of roots you must commence feeding with liquid-manures, gradually increasing the quantity until the recognised maximum be reached. Avoid giving this to excess; rather practise the method of little and often if you wish to succeed. Regarding the late sorts, your selection provides you with Miss Marchaux, Lady Lawrence, L. Canning, Eda Prass, W. H. Lincoln (this can be had either early or late), Niveum, Pride of Ryecroft (yellow sport from Niveum), Tuxedo (tall grower), Mrs. E. W. Clark, and Mrs. H. Weeks. These late sorts may be propagated at any time during the present month, grown on strongly when once rooted, and pinched twice—first during April and a second time during the first week in July. From this last pinching select the number of growths required from the resulting shoots, and when the buds ultimately appear in the points of these they must be retained. Towards the end of September you may confidently look for the buds, and only one bud should be left to each shoot, as advised for the mid-season sorts. The plants should be left outside as late as it is safe,

rather giving them a slight protection outside than bring them in too soon. After being housed, give plenty of air, and then when the blooms begin to unfold their florets keep sufficient warmth in the greenhouse to dispel damp and fog. We trust you will gather all the information you need from the above.

Chrysanthemums—pinching October sorts (*Alice*).—If you have purchased October flowering sorts their natural time of blooming should be during that month. But as you want to grow bush plants in order to have plenty of flowers for your bazaar at that period, we should not care to stop the plants after the first week in May. For an ordinary October display—and a wonderfully free one, too—you could not do better than obtain a list of the best, which we will gladly give on hearing from you, and these naturally grown are most floriferous, and without any pinching or stopping whatsoever. W. H. Lincoln, as you suggest, can be had in October, if early buds be retained. Viviand Morel, La Triomphant, Chas. Davis, Gloire du Rocher, Souvenir de Petite Amie, Sunflower, Elaine, Australian Gold, Phœbus, Source d'Or (good October sort), Emily Silsbury, and W. Seward could possibly be had at the time you name, but the bush-plant system of culture thus early in the flowering season would not answer so well. You might pinch for the last time during the first few days in May, and then retain the next lot of buds that show themselves. There is this disadvantage, however, with these later sorts—that they rarely develop satisfactory flowers early in the season. They generally lack points in colours and in form; they are often quite out of character. The other varieties in your list we should not be disposed to tamper with. They are in most instances distinctly late, or if retained too early are coarse in appearance and of bad colour.

Chrysanthemums—which shoots to retain from the first "break" (*T. B F.*).—Generally it is better to take up three shoots, or as many as you may care to secure blooms of, from the first "break," or the equivalent of this, the shoots which follow after a plant has been pinched. There are a few instances in which some growers prefer to take up a single stem from the first break, and then the required number from the next break. But, as a general rule, for you and most other growers to observe would be to secure the required number of shoots from the first break.

Chrysanthemums—late propagation (*Perplexed*).—Your query was replied to, and we think you will find it in last week's issue or the previous one. Anyhow, for your information, as well as for others similarly circumstanced, we are pleased to inform you that by adopting the principle of pinching, as we have endeavoured clearly to lay down in previous issues, you have no cause for alarm in having propagated your plants so late as February. The usual result of early propagation is to cause the plants to make a natural break early in the season, and by the same rule the late propagation of them naturally should cause a later time for their natural break, and consequently later bud production and display of their blossoms. By pinching an established plant at the time we have described it should make the early-struck plant late and the late ones early, so that you should come out all right by following our advice, provided you get your plants rooted and nicely established by the times specified.

Nursery rubbish.—The quickness with which weedy shrubs grow is taken by many as a sign of their merit, and the use of the really good hardy evergreens is set aside for some rapid-growing forms of the Privet, which is a weed among shrubs. The town of Leicester is one of the places which we have lately seen overrun with it. In the parts of the town with many villas and not ugly gardens there are miles of this rank-growing Privet, forming hedges between the gardens and the roads. The hedges, having got a little old, are now decayed in parts, show a bad, poor colour for a background, and are absolutely useless as a fence. The time it appears to save is really lost, because the years that brought it to its present pass would have led to a stout, handsome growth of Holly, Box or Yew, while the result of using Privet is deplorable in all ways.

GARDEN PESTS.

SLUGS AND SNAILS

THERE are few gardens that are not more or less infested with these pests. As a rule, the slugs are the commonest and most injurious, but the latter are often very troublesome. There are several kinds of slugs that are common in gardens, but the most abundant species is the small one, which is about 1½ inches in length when full grown, and varying in colour from creamy-white to pale brown, or grey, with darker mottlings; it is known as Limax agrestis. Among the other species that are found in gardens is the large black species, that sometimes may be found as much as 4 inches in length (Arion ater). This slug is also variable in colour, most specimens being of an intense glossy black, others of every intermediate shade between black and white, brown, red, yellow, greenish. Other kinds of slugs may at times be found in gardens, but they may be killed by the same means. All manner of devices have been tried for keeping these creatures from plants and for killing them. Cocoa-nut-fibre, lime, etc, laid round the plants, may be of use for a short time, particularly in fine weather, but they soon want renewing, even under the most favourable circumstances. Slugs are nasty sticky things to handle, so that picking them off the plants is by no means pleasant or easy work. I have found that the easiest way of destroying them is by killing them with a knife. I use a common pruning knife with a sharp point, with which I stab them in the shield, that part of the body which is just behind the head, and which forms a shield-like patch; this kills them at once. If the slugs are very small, they may be cut right through at that part, but when, however, the cut is made nearer the tail the slug will crawl away as if nothing had happened. If the slugs are on the plants they can probably be picked off with the knife, as they will generally adhere to it, but if they fall they can easily be dealt with on the ground. Small heaps of bran placed upon small pieces of slate or broken pieces of crockery make attractive traps; some persons cover each heap with a Cabbage leaf, slices of Turnips, about ½ inch thick, or of Cucumber. These are also very enticing, and the slugs may easily be scraped off into a vessel full of strong lime-water. When there are a great many slugs about busy feeding, dusting freshly slaked lime about is very useful, as, if the lime is really fresh and hot, it will kill any that it comes in contact with. To be quite sure of getting it right, slake some lumps of lime in an iron pail, then pass them through a fine sieve, and throw the powder into the air, so that it may fall broadcast over the plants and beds. Watering with one part of liquid ammonia to five or six parts of water, if it is made to reach the slugs, kills them immediately. Slugs are generally supposed to have no shells. This is, however, quite a mistake, though it is true that they are not visible, for under the shield already alluded to there is a small flattened shell in some species, while in others the shell is represented by a few little grains of calcareous matter. There are nine different kinds of slugs in this country, besides one belonging to a different family, often known as the "snail-slug," on account of its having a small, ear-shaped shell on its back near the tail. Its scientific name is Testacella haliotidæ It is a very local species, differing in its habits from all other slugs in not feeding on vegetable matter, its food consisting entirely of worms, slugs, or small snails, so that it should be encouraged in every way in gardens. This slug, when full grown, is about 3 inches in length, narrow, and tapers towards the head, which is small. Its general colour is brownish-yellow, often more or less speckled or mottled with black, red, or white. The common garden snail (Helix aspersa) is too well known to need any description, its ravages at times in gardens being considerable. By far the best way of destroying this pest is by picking them off the plants on which they are feeding and killing them with boiling water. They so quickly withdraw themselves into their shells, that lime or liquid ammonia is practically useless, and often pass the winter, many of them clustered together, in cracks in walls or at the base of a wall in some sheltered place. If they are very abundant it is well worth while to search such places for them. There are no less than thirty-three different kinds of snails in this country, most of which are seldom, if ever, seen in gardens. There is one which is very common, and sometimes injures plants in cultivation—viz., Helix nemoralis. It is a much smaller snail than the common garden one, varies to an extraordinary degree in colour, and is nearly always banded. These bands vary greatly in number, size, and colour. The best time to catch slugs or snails is the evening, after a shower. Those who have never tried it will be surprised if they search the garden on a suitable evening, with a lantern, at the number of slugs and snails they will find. G. S. S.

Galls (*M. A. P.*).—The clusters of galls that you found under the ground among bushes are formed by one of the Oak-gall-flies (Teras terminalis), or rather by the grubs. The flies that come from these galls are known by the name of Biorhiza aptera, and at one time it was not supposed that there was any connection between the two insects. Now it has been abundantly proved that they are alternate generations of the same insect. The flies that are bred from the root galls ascend the trees and lay their eggs in the buds, generally selecting one at the end of a shoot. When the grubs are hatched their feeding on the bud causes it to grow into the soft rounded fruit-like mass, commonly known as "Oak Apples." The flies produced from these descend to the roots and lay their eggs in them, and then the round begins again. The flies that emerge from the root galls vary in size from ⅛ inch to ¼ inch in length. They have no wings, and are all females. Those that come out of the Oak Apples are of both sexes, the males being winged, but the females are not. Both are about ⅛ inch in length.—G. S. S.

Diseased Violet-plants (*Subscriber*).—I have never before seen Violets attacked in the same way that yours are, but I have no doubt that mites are the cause. The plant was so dried up when it reached me that I was unable to find any of the mites. I should be very much obliged if you would send a fresher plant. I should burn all the affected plants, and not plant Violets in the same ground for at least a year.—G. S. S.

Pear-trees attacked (*Mrs. C. Hedding*).—From your description your Pear-tree was attacked by the grubs of the Pear saw-fly (Selandria cerasi). This insect makes its chrysalides in the ground. They are enclosed in small oval cocoons about ¼ inch in length. The grubs either fall to the ground or crawl down the stems when full grown, and it is most unlikely that they should crawl any distance before burying themselves, so that the best way to prevent an attack next season is to remove the earth from under the tree to a depth of 3 inches or 4 inches, and replace it with fresh soil. The earth that has been taken away must be burnt, buried not less than 1 foot below the surface, or thrown into a poultry-yard so that the fowls may scratch it over and pick out the cocoons. If thrown about anywhere the flies will come out of the chrysalides and at once seek the Pear-trees and lay their eggs.—G. S. S.

Grub in Apple-tree branch (*M. Plackett*).—The grub you found in the branch of your Apple-tree did not reach me, but your letter did. If the former was of a creamy-white colour, dotted with black, it was no doubt the caterpillar of the wood leopard-moth (Zeuzera aesculi). If it was of a reddish-brown colour, and rather paler beneath, it was the caterpillar of the goat-moth (Cossus ligniperda). Generally it is the best way to cut off the branch that has been attacked; but sometimes it is practicable to thrust a pointed wire up the gallery that the insect has made in the bough and stab it, or to push in some tow or cotton-wool soaked in tar or paraffin-oil, and so stifle it. The entrance to the hole should be well plugged with clay after putting the tow in. Neither of these insects are uncommon.—G. S. S.

Currant-buds infested (*A. F. B.*).—The buds of your Black Currants are infested with the Currant gall-mite (Phytoptus ribis). If most of the shoots on your bushes are affected as badly as those you sent, the best thing you can do is to pull up and burn the plants, as they will never be of any use. If only a few shoots are affected, they should be cut off at once and the bush well brushed over with 3 lb. of sul-

phuret of lime and 1¼ lb. of soft-soap, well mixed and added to 10 gallons of water. The mixture should be freely put on and allowed to run into all the cracks and crevices in the bark and round the base of the buds; or the following mixture may be used—viz, 1 lb. of soft soap, 1 lb. of flowers of sulphur, the extract from ¾ lb. of Quassia-chips, well mixed and added to 10 gallons of water. If there are many bushes to be treated, to save time the mixtures can be applied with a syringe or spraying machine. In the autumn the shoots should be cut as hard back as practicable, and everything that is cut off burnt.—G. S. S.

Diseased root (*A.*).—The root was badly attacked by snake millipedes (Blanjulus guttatus). I cannot suggest any other way of dealing with them than pulling up and burning the infested plants, and dressing the ground heavily with gas-lime. No ordinary insecticides have any effect on them when below the surface of the ground.—G. S. S.

Insect on Dendrobium (*One who Subscribes*).—The insect you sent which you found on your Dendrobium is an immature specimen of one of the plant bugs, but of what species I cannot say. You had better wash the plant with some insecticide. At present the insects are unable to fly, as they have not yet got their wings, so that they are easier killed now than they will be in a few days' time.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

REPEATED QUERIES.

2727—**"Summer at mid-winter."**—In the above article on Jan. 15, page 664, "Lady Amateur, Berks," kindly offers to give "cultural directions for plants suitable for winter blooming in greenhouse," for which I shall be most grateful. My greenhouse is only 7 feet by 7 feet. Would she discard Camellias just out of bloom?—LADY AMATEUR, *Salop*.

2729—**The best double white Zonal Pelargoniums.**—I wish to confine myself to one variety of double white Zonal Pelargonium, and should like very much to have the opinion of readers of GARDENING ILLUSTRATED as to the best all-round variety for general purposes?—NEMO.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2785—**Asparagus verticillaris** (*M. O.*).—It is quite hardy, and may be grown in the open

2786—**Tuberoses in the open** (*M. O.*).—Tuberoses may be raised in the open and planted out in early summer. Soil and position are immaterial.

2787—**Weak Hyacinths** (*M. Plackett*).—The reason of the failure is to be attributed to the fact that the bulbs were placed in heat before they were properly rooted. They ought to have been kept outside until the crowns had commenced to expand.—H.

2788—**Palm unhealthy** (*Mrs. Robertson*).—The present is a very suitable time to repot your Palm. See that the pot is properly drained, and use a compost of good turfy loam, with a little peat and silver-sand added. After potting it will be of great benefit to the plant if it can be placed in a warm-house for a time, and syringed twice a day.—H.

2789—**Age of Tritoma-plants** (*Mrs. O. Smith*).—It is impossible to tell from the leaf you forward the size of your Tritoma-plants. If the leaf sent is one of the largest, the plants are certainly young and have not yet reached their flowering state; but similar leaves are to be found even in very large plants.

2790—**Mossy Currant-bushes** (*Subscriber*).—Smother your Currant and Gooseberry-bushes with fresh-slaked lime at once, but do it when they are rather damp. A further dressing may be given a week later; that should destroy the Moss. No doubt its growth is largely due to the absence of lime in the soil, but the dressings on the bushes will wash in; and if a good ground dressing of soot be added, then lightly forked in, great good should result.

2791—**Wall-tiles** (*A. B.*).—We do not gather from your query what is the nature of the wall-tiles you need for a fernery, as so many diverse things may be included in the term. Generally nothing seems better to cover a fernery wall than driving in 6 inches or so apart all over it eyed holdfasts, the heads projecting 3 inches from the wall. Through these eyes stout galvanised wire may be run, and then pieces of Moss or turf or peat, or all, forced between the wire and wall. Then the whole may be planted with tiny seedling Ferns and pieces of Selaginella, well soaked with water by syringing, and frequently so watered as needed. Such a wall remains a perfect mass of greenery for many years. If you specially prefer tiles describe them to Sankey and Co., Bulwell Potteries, Nottingham, who may be able to help you.

2792—**Cement on brick floor** (*J. H.*).—We know of no method whereby cement can be removed from a tiled floor but by the aid of a hard chisel. If you will use a tool of that description, aided by a heavy hammer, you may so clear the tiles of the incrustation that rough rubbing with brick or soft stone may in time cleanse away the rest. Hard-set cement is so insoluble and impervious to moisture that it will be difficult indeed to cleanse the floor as you desire.

2793—**Scorched Cineraria-leaves** (*H. P. F. G.*).—It is very evident that your leaves have been burnt at the edges by the fumigator you employed. It is a compound that is wonderfully successful in destroying aphis, but if a little too strong is dangerous to both flowers and leafage. But your Cineraria leafage seems to be peculiarly thin and attenuated. You seem not to have light enough to create stout, heal hy foliage. Perhaps you may too have kept the plants in a somewhat warm, dry air. Cinerarias like plenty of light and air, and to be kept rather cool than otherwise. Again, if the leaves were at all damp when fumigated, they are apt in the hot smoke or vapour to burn speedily.

2794—**Blue or red or deep orange-flowered climber for unheated house** (*A. Burlow*).—Bignonia radicans is an orange-flowered climber, and Rhodochiton volubile has red blossoms. Both these are grown and flowered out-of-doors in the South of England, while the double lavender-blue Clematis John Gould Veitch, which belongs to the Florida section, would provide blooms of a blue colour.

2795—**Zonal Pelargoniums** (*Beginner*).—Your cuttings in a cool-house do not make growth from lack of warmth. So soon as the sun gets more powerful growth will follow. We should leave shifting singly into small pots till the middle of March, as after that growth is quick, and the plants soon become rooted. They should, when they are large enough to shift into 6 inch pots, give you abundant bloom all the summer. So long as they are in small pots keep the flowers pinched out. As to watering, just keep the soil moist, but more water will be needed when good growth is seen. Give a little top air on mild days, but not when cold or windy.

2796—**Heliotrope-leaves** (*Sandal*).—The leaves sent bear the aspect of scorching, as though some burnt air or carbonic-acid gas had come into contact with the leaves. Still, the sense of smell should soon tell of that trouble. Very likely, if you cut your plants back and induce new growth to break out, you will find the leaves to be healthy. With respect to the Azaleas, assuming that the buds are firm and do not drop, no doubt they will break into growth and bloom presently. We have no reason to assume that they have gone wrong.

2797—**Seedling Orange** (*Tangerine*).—The Tangerine Orange is not a strong grower, and your plant seems doing very well as it is but two years from seed. Repot it in April. Get a clean 5-inch pot, and soil, one-half turfy loam, the rest peat and sharp sand, and just a little of old hot-bed manure; a very little of all, if good, suffices. Do not check growth by pinching at present; it will be time enough later if such be needed. Keep the plant in the full sunlight now, and let it have a moderate supply of water. In hot, sunny weather a little shade and a cooler position are best.

2798—**Sandy soil** (*Puzzled*).—We do not see that you are puzzled any longer, as your fresh query shows that you are alive to the needs of the case. Certainly cast the top spit of good soil from the proposed walks over the borders, replacing it with sand taken from below. But as your walks will not exceed 4 feet in width, and your borders may be 10 feet wide, your soil thus thrown out will add but a few inches when levelled. All the same, it is the right course to take. Well tread the sand at the bottom of the walks, and neatly level it before adding gravel. Get all groundwork done and the edgings made or planted first, finishing off with the gravel last.

2799—**Plants for room** (*Suffolk Reader*).—Good Palms for a rather shaded room are Kentia Fosteriana and Phœnix rupicola, and good Ferns are Adiantum pedatum and Asplenium cristatum floridum. There are, however, many others. Then Aspidistras, both green and variegated, and India-rubber-plants, also green and variegated, make capital shaded room plants. All these need frequent sponging of the leaves or fronds if dust prevails. Flowering plants may do little in so shaded a room, but seldom in a satisfactory way. Tradescantias do nicely for hanging plants in windows, and Campanula isophylla, both white and blue, also flower well in the summer hung in a window.

2800—**Field Potato** (*Archie Ley*).—Without doubt the finest field Potato at present is Up to Date. It is a strong grower, disease resister, and a great cropper. You will also find The Bruce, Windsor Castle, Prime Minister, Chancellor, and Satisfaction are heavy croppers. All these varieties have been some time in commerce. Up to Date is a Scotch raised variety, and has of late become wonderfully popular.

2801—**Coarse lawn** (*T. U.*).—If your lawn is much covered with worm-casts, have them well scratched about with a fine rake or a small harrow of bushes. Then you should give the lawn a mixture of sulphate of ammonia one part, superphosphate of lime two parts, and soot two parts, adding to this double the bulk of clean, gritty soil, and well dress the Grass with it, harrowing it well and rolling it; that would do the best Grasses great good. Keep the coarse Grasses hard cut with a scythe, and as soon as can be after the dressing is well in, use the lawn-mower. Your lawn should under such treatment rapidly improve.

2802—**Blood-manure** (*J. A. P.*).—We have read your note intimating that a powder blood-manure is largely popular in the West of Ireland, and have been disappointed not to find some information as to the process of conversion. We have been long familiar with similar powder in this country, and, we believe, made very much as we previously indicated. You do not say that your Irish blood-manure is otherwise. Of course, the raw blood may be subjected to great heat so as to eliminate the water by evaporation, leaving only a sediment that is mixed with solids. Bones, doubtless highly crushed, mixed with the blood-manure rather tend to the inference that these as phosphates dominate the manure after all.

2803—**Mulching Peach border** (*Subscriber*).—As in the spring when Peach-trees begin to make growth the chief object is to get the soil in which the roots are well warmed, it is best to leave mulching the surface with long manure until not only leaves are developed, but fruits are well set. Even then it is wise to top-dress only after stoning, which usually takes place when the fruits are about the size of small Walnuts. When that important period in Peach production is passed, the fruits begin rapidly to swell. Not only will a moderate top-dressing of long manure do good, but frequent soakings of water to wash in the good elements in the manure will do good also.

2804—**Vines from eyes** (*Kismet*).—We are pleased to learn that you have been so successful in striking Vine-eyes. Wait till some 6 inches or 7 inches of growth have been made, and doubtless by then fair roots. Then pot each singly into quite small pots, water, then stand in a close, warm-frame in a warm-house, if you can, to encourage quick rooting. The next shift should be into 5-inch pots. In these latter pot firmly, and stand along on one side of the house close together to train up under the glass. If any are wanted to fruit in pots, they should be in those 10 inches across. The rest will make capital planters after the leaves have fallen and the wood is ripened. Get A. F. Barron's book on "Vine Culture," price 5s. 6d.

2805—**Flowers at Christmas** (*L. M. H. P.*).—Late Chrysanthemums, such varieties as Princess Teck, Lady Lawrence, L. Canning, and Golden Gem, grown in pots and kept cool outdoors so long as safe, then got into a greenhouse, are best for Christmas blooming. You may have Roman Hyacinths in plenty by potting in September and forcing; also Freesias (white flowers), Cyclamen, and Chinese Primroses. But Cyclamen-seed should be sown in September, sixteen months previously, and that of Chinese Primroses in the previous May. Common, easily-raised plants from seed will not bloom at Christmas. Camellias do so very well, but they have to be purchased. So, too, with yellow Genistas. Arums, pushed on in warmth, do bloom at Christmas also, and so may some of the Polyanthus Narcissus. Except where there can be a forcing heat furnished, the range of plants to bloom in mid-winter other than those named is small indeed.

2806—**Window-box** (*Pussie*).—To grow in a window-box so far north as Glasgow plants that would bloom well in the summer would depend materially on the position of the window, and whether, even though facing south, it is wind-swept. At present we should fill the box with a few pretty little conifers and variegated shrubs, Wallflowers, Pansies, Creeping Jenny, and anything quite hardy. In the summer probably Ivy-leaf and Scarlet Zonal Pelargoniums, White Marguerites, and trailing Petunias would do very well. And for climbers, if Canary Creeper and Convolvulus will not do, then plant on each side Virginian Creepers. If your box is 3 feet wide and deep it is of big dimensions. We should prefer one 12 inches wide and 9 inches deep to fit a window-sill.

2807—**Rabbit-eaten trees** (*Jam*).—If the bark round the stems of your Apple-trees has been eaten off down to the hard wood all round, then there is no hope of saving them. No dressing can do the least service. If the bark has been but partially stripped off the trees will live; so long as the bark is not entirely severed there is connection between trees and roots for sap movement. The stems but partially harmed may be coated over with a mixture of soft-soap, clay, and a very little paraffin stirred in. This mixture should be in the form of paint, and be well dabbed on with a brush. Its purpose is rather to destroy insects or fungus than to render other service. Nature alone can perform the work of re-coating the stems with bark in the course of time. Rabbits, however, must be rigidly excluded from the trees henceforth.

2808—**Wet smoke-pipe to boiler** (*G. R. F.*).—It is an unusual complaint you make that adding fresh fuel to your furnace beneath greenhouse boiler results in so greatly charging your smoke-pipe with moisture that it comes down and injures the fire. As your coke and coal fuel is dry, it is evident the cause must be looked for elsewhere, and it seems to be found in the exposure of the metal flue or stove-pipe to the atmosphere—that in your northern locality the heat of the pipe attracts moisture from the air, causing it, the moment fuel is applied and the temperature is temporarily reduced, to condense, with the result you complain of. Cannot you have your flue enclosed by fixing round it a wooden case a few inches away, and filling up the intervening space with dry soil or sand? Some such covering should supply a remedy.

2809—**Pruning Apple-trees** (*H. W.*).—It is always best to fairly hard prune young or newly-planted fruit-trees, and the work cannot be done too soon. Cut back the next season's shoots fully two-thirds their length, cutting to a leaf-bud that projects outwards. By doing so the new growths are spread wide rather than together. When thus hard cut new, strong shoots are made, and these re-act on the roots, and cause them to be active also. With respect to cordon-trees, the cutting back of the leading shoot may be needful or not. If the shoot be long, then it is needful to shorten it, perhaps one-half, so as to cause the back buds to break, or otherwise they may not do so. If the shoot be quite short, pruning may not be essential. The great object of the pruner is to furnish the stem as it grows.

2810—**Auriculas** (*Cowslip*).—The article you ask for shall be furnished in a week or two. You do not say, however, whether you want house and frame culture described, or merely outdoor or border culture. With

respect to the possibility of raising hybrids by intercrossing Auricula-flowers with pollen from those of the Polyanthus or Primrose, the effort has often been made, but without success. There is hardly a family of plants in which there exists so much of stand-offishness as in that of the Primulacea. We have not heard of one single case in which inter-crosses of distinct species have been successful. Many efforts have been made to inter-cross Auriculas with Chinese Primulas, and the latter with P. obconica. Any species of true Primrose—that is, of the Primula veris or vulgaris forms—will inter-cross; so also will those of the Primula-Auricula section, having allied character and leafage. But of distinct species it seems that all refuse to intermingle their blood with others of the same family, hence your proposed efforts at inter-crossing seem dissipated at the outset.

2811—**Greenhouse** (*E. G. P.*).—Your arrangement of greenhouse and pipes seems very well, but we should have been content with one division and two compartments, as if the extreme one has rather more piping it is the end house and more exposed to cold. If trees give much shade in summer cannot they be lopped? Unless your heat could be cut off from any one house—and in your case that is very difficult—the average temperature will be very much the same. Of course, you could keep the first and second compartments cooler by throwing sacks or mats over the pipes for a time; but to keep the further house warm you would need all your fire-heat. The average inside temperature with 10 degs. of frost would probably not exceed 60 degs, except on sunny days. There is no reason why you should not have the various greenhouse plants you mention, and Camellias, Azaleas, Genistas, Deutzias, and similar hard-wooded plants in abundance, and many things blooming throughout the winter. Have the rafter bars of the roof, and the front sashes also, to take glass 12 inches by 14 inches, and let it be of 21 oz, which is stout and less liable to crack. Do not glaze tight, but allow the glass to drop into the bars easily. Bed well with putty, securing with tacks, and use as little top putty as possible. A few nice climbers inside the houses will much mitigate sunshine in the summer; and if the sun was found too powerful then give the top glass a very thick coating of summer-cloud shading.

2812—**Peach-buds dropping** (*G. O. S.*).—Certain varieties of Peaches, such as Alexander and Hale's Early, very commonly drop their fruit-buds, a practice difficult to understand It is commonly attributed to lack of ample moisture at the roots, but you say your bed is moist. Is it really so from 12 to 20 inches down, where the roots largely are? Oddly enough, bud dropping is a rare circumstance with any varieties outdoors, where they get ample moisture. In all cases what may be regarded as forcing should be very slow, so as to accustom the trees to the warmth gradually. Will you try the condition of the border low down?

2813—**Greenhouse plants** (*Hiburnia*).—So soon as you have a good warmth, say 60 degs. to 65 degs of heat, in your greenhouse, you can sow seed of Begonias, Gloxinias, Cannas, Tobaccos, Celosias, Coleus, Balsams, and similar flowering things, using broad mouth pots or shallow pans. Place good drainage in the bottoms, then some coarse soil, and on that very fine sandy soil. Sow the seed thinly, press the smallest in, and if larger seeds bury their own depth. Water gently, stand in a warm part of the house, and cover up with tissue paper in the day. When the seedlings are up and large enough to handle they should be pricked out thinly into other pans, and be kept growing on and finally be got nicely into pots. General hints on the management of a greenhouse would need too much space, You should get some suitable book to help you. See other answers Of course, you must keep up a regular warmth once the house is started, not lower than 60 degs. at night, and up to 70 degs by day.

2814—**Hardy flowers for cutting.**—"Mungo" should certainly plant the taller-growing plants in the centre of the beds. The large cold-frame should not be entirely filled with soil, but should have at least nearly 6 inches of drainage—broken bricks, potsherds, or rubble; over this a layer of long manure, and then good soil on the top of that, leaving sufficient space for the plants he proposes growing to attain their proper dimensions without touching the glass. No more space than this is necessary, as, the further distant they are from the glass the more drawn-up they will become.

2815—**Treatment of Crinum longifolium album** (*E L.*).—Do not repot the Crinums; they flower best when pot-bound. They often refuse to flower for a year or two after being potted, and then bloom periodically, sometimes even twice a year. When they reach this condition their pots are full of roots, whose vigour is such that they often burst pot after pot, unless they are bound round with copper wire. You can grow them in heat if you have it at your disposal, but they will succeed in a cold greenhouse or in the open air in the south-west. You may take the side-shoots off now, but do not disturb the parent plants more than necessary.

2816—**Growing Campanula pyramidalis and Lilium auratum** (*H. F.*).—Campanula pyramidalis, if strongly grown on, flowers well in a 9-inch pot, though it will flower in smaller sizes. Lilium auratum should be planted in pots, the insides of which are about 1 inch to 1½ inches distant from the bulb. No particular size can be given, as the sizes of the bulbs vary so greatly. In planting fill the pots half full of soil, then add a layer of silver-sand, and press the bulbs down, pouring some more silver-sand between the bulb scales, and finally adding more soil until the tops of the bulbs are just covered. A space of 1½ inches should be left at the top of the pots, which should be filled with rich soil when the bulbs throw out their stem-roots, which will not be until they are from 1 foot to 2 feet high. Only one bulb should be planted in each pot.

2817—**Azaleas after flowering.**—"Beginner" should endeavour to get the Azalea to make growth by placing it in a sunny position and attending carefully to giving it water when required. When its growth is completed, which it should be by July, the plants should be stood in the open in a slightly-shaded position in order that the growth may become ripened, removing it again into the house at the end of September. It is, however, impossible to ensure a full measure of success in the culture of Azaleas without the assistance afforded by a glass-house and heat.

2818—**Gladiolus The Bride.**—If "Beginner" wishes to plant out his pot of Gladiolus The Bride he should give the pot a watering, and then, placing his left hand over the top of the pot, invert it and rap the upturned bottom of the pot sharply with a piece of wood or his fist. He will then find that he can lift the pot off the soil, which will remain in his hand without losing its shape. This can then be carefully placed in the hole prepared for it in the bed without disturbing the roots. If preferred, "Beginner" could bloom the Gladioli in the pot.

2819—**Daffodil-flowers getting smaller** (*Subscriber, Chiswick*).—Daffodils often bloom more freely one season than another. This year we hear from the Scilly Isles that the Narcissi do not give promise of abundant bloom. Last year does not appear to have been favourable for flower formation within the bulbs. This is not the fault of the bulb, and, probably, cannot be ascribed to the soil, although in some soils Daffodils bloom more freely than in others. In soils that are retentive of moisture, though not necessarily heavy soils, peat and disintegrated granite suiting them admirably, Narcissi generally are more satisfactory than in dry, light soils. The Double Poet's Daffodil is, of all the Narcissi, the most addicted to throwing up flower-stems, the buds on which "go blind" before opening. This failure is of more frequent occurrence in dry borders than in deep, moist soil, and appears to proceed from lack of strength to perfect all the blossoms formed. The flower-stems grow to the usual height, the petals are formed, but at different periods the growth of the latter is arrested and the flower-buds wither. Systematic attention to watering during the period of growth, which can be provided for by the cultivator, and a dry, sunny ripening-time, which he is powerless to arrange for, are the chief elements necessary to store the bulbs with embryo flowers for the following year.—F.

2820—**Treatment of plant sent for name.**—"E F. M.'s" plant is Fatsia (Aralia) japonica. This is one of the best pot plants for a room, lasting in good health with care and attention for a lengthened period. From the dropping of the leaves it is evident that the plant is in bad health. Perhaps a clue to the cause may be found in "E. F. M.'s" statement, "I keep it quite damp." Foliage plants should not be always kept quite damp, especially in the winter. When they require watering let a thorough one be given that will soak every particle of soil in the pots; then do not water again until the soil is almost dry, which can be ascertained by the pot ringing sharply if tapped with the knuckles. Constant driblets of water have a most pernicious effect on pot plants. The upper portion of the soil becomes sodden, but there is not sufficient volume of water to find its way down to the lower level, which consequently becomes dust-dry and affords no nourishment to the roots, that slowly perish. The foliage of fine-leaved room plants should be sponged with tepid water regularly once a week, thus removing the dust that chokes the leaf-pores. If this precaution is omitted they will soon exhibit signs of bad health. It is to be feared that "E. F. M.'s" plant is in a too advanced state of ill-health to be cured by any system of treatment in its present quarters. Removal to a hot house would, no doubt, in time lead to its recovery, but when room plants go wrong the most satisfactory plan is to replace them by healthy specimens, which nowadays can be purchased at a very cheap rate.

2821—**Mossy lawn** (*F. A.*).—No doubt your mountain turf breeds Black Lichen freely; indeed, it is with it a natural product. Still, we can advise you to dress these patches with a mixture of lime and soot at intervals of ten days, and then in April give the entire lawn a dressing of superphosphate of lime two parts, and sulphate of ammonia one part, at the rate of 4 lb. per rod of surface, mixing this manure with double its bulk of fine road-grit or other fine soil, and sowing it broadcast, then well raking or brushing it about to wash in.

2822—**Walnut-tree fruitless** (*Walnut*).—As your soil is clay it is most probable that your Walnut-tree refuses to fruit or to set fruits because of absence of lime in the soil. These trees like a carbonaceous soil undoubtedly; a chalk base suits them admirably. The best you can do is to smother the soil about the tree with fresh lime, and at once fork in. A further dressing of kainit, potash, and soot, given in June, should also, forked in, do great good.

2823—**Broccolis and Cauliflowers** (*Ireland*).—If you sow seeds of Autumn Giant Cauliflowers in March outdoors, and again in April, and plant out on a fairly good, firm soil in July and August, you should have good heads through the autumn and early winter. White Broccolis should be sown in May and be planted on quite firm soil. It seems as if your plants so far had suffered from a touch of the slime fungus or soil sickness, due largely to the absence of lime in the soil. In all cases before you plant fork in a dressing of fresh lime, quite smothering the ground first. Many troubles to vegetables arise from lacking this important element in the soil.

2824—**Treatment of Tropæolum speciosum.**—"N. F. D" had better leave the Tropæolum speciosum alone and not cut it back. If hard weather comes this will effectually stop its growth, but if it should entirely escape damage by frost it would commence to bloom earlier in the year, while leaving the top-growth would not deter it from sprouting again from the root.

2825—**Dwarf Cannas** (*Flamingo*).—The Cannas do not require heat, although they start more readily under its influence. Pot in good soil that is fairly moist in April and let them start naturally. Do not give much water until the plants show signs of growth, but do not let the earth become absolutely dust-dry. When in full growth the Cannas will require plenty of water, and an occasional application of liquid-manure will prove beneficial.

2826—**Christmas Roses from seed.**—"T. M." should sow the Christmas Rose seeds as soon as ripe. If he has them by him now he can sow in the spring. The seed should be sown thinly and the seedlings transplanted before they become crowded. If "T. M." cross-fertilises the good varieties of Helleborus niger, such as H. n. altifolius, H. n. major (the Bath variety), H. n. juvernis, H. n. angustifolius, H. n. Madame Fourgade, H. n. Apple Blossom, and the Riverston variety, he should get good results. Such hybridisation would be exceedingly interesting and useful. Scabiosa caucasica, Geum coccineum, and Trollius europæus should be planted a foot apart if large plants, but if they are small 9 inches will be sufficient space. Planting had better be delayed until the spring, as, although the weather is very open at present, a hard frost may set in at any time to the detriment of plants whose roots have not taken hold on the soil.

2827—**Genistas** (*New Reader*).—The shifting of the Genistas from the greenhouse to the dry atmosphere of the living-room would be undoubtedly cause a check to flower production. These plants are now in fine bloom in the open air in many gardens in the south-west. If the Cinerarias are cut down immediately after flowering they often, but not invariably, throw up suckers from the base.

2828—**Montbretia flowers destroyed** (*Alice*).—Since the Montbretias grew so strongly and threw up fine flower-spikes, there is no doubt that "Alice" is correct in her supposition that the failure to flower is to be ascribed to the ravages of some garden pest. We should certainly advise the removal of the Montbretias to another position, as far as possible from the harbourage afforded by the Ivy-hedge. Montbretias are not exacting in the matter of soil, and peat is not a necessity for their welfare.

2829—**Pruning Fuchsias** (*An Inexperienced Gardener*).—Do not cut your Fuchsias down now, but wait until they begin to break in the spring. The end of March should be early enough to prune Roses in Scotland. If you want exhibition blooms, the Hybrid Perpetuals must be pruned hard, but, for general effect and quantity of flower, medium pruning is advisable. Very weak growers should be cut back harder than strong growers and all weak and spindly growth should be thinned out.

2830—**Plants for small greenhouse** (*Salopia*).—The most suitable plants for your small greenhouse would be "Geraniums," Fuchsias, Lilies, Cannas, Chrysanthemums, Carnations, and bulbous plants, such as Tulips, Narcissus, Hyacinths. You might commence any time now, excepting with bulbs. These you must procure next autumn. A good safe climbing Rose would be Gloire de Dijon or W. A. Richardson, orange. You might find it necessary in frosty weather to have an oil-stove, and if you will consult our advertising columns you will meet with what you require.

2831—**Bulbs by pond-side.**—"East Sussex" had better dig the bulbs up when they have finished flowering, and lay them in to ripen in a spare bed. Some fresh soil should be added to the bank, and Periwinkles and St. John's Wort (Hypericum calycinum), could be planted, which would probably cover the ground. If flowering shrubs, of which a long list appeared in a late number of GARDENING, are planted, large holes should be dug for them and filled with rich soil, as they could not be expected to thrive in the clay.

2832—**Six Clematises for the greenhouse** (*T. Newton*).—The following are six good varieties of large-flowering Clematis: Duke of Edinburgh, violet-purple, and Fair Rosamond, white, tinged with the blue, of the Patens section; Fairy Queen, flesh with pink band, and Gloire de St. Julien, very large, white, with mauve shading, of the Languinosa section, and John Gould Veitch, lavender-blue, double, and Lucy Lemoine, white, double, of the Florida section.—F.

2833—**Sweetly-scented herbaceous Pæonies** (*A. M. H.*).—You may plant herbaceous Pæonies now. The following varieties are scented: Belle Donaisienne, Charles Binder, Charles Verdier, Delicatissima, Doctor Bardia, Eugene Verdier, Formosa, Fragrans, General Cavaignac, Grandiflora nivea, James Odier, L'Elegante, Lentulus, Macella, Mme. Chaumy, Mme. Journier, Mons. Deschamps, Philomele, Princess Clothilde, Prolifera superba, Reine des Roses, Reine Hortense, Striata superba, and Whitmanniana.

2834—**Treatment of Camellias** (*A. L O. F.*).—The Camellia that has bare branches is evidently in bad health. If left to itself it will go from bad to worse. It should therefore be cut back and its roots examined. These are probably in a bad state of health and should, if this is the case, be placed in new soil. Camellias do not like pruning, but, in a case where the vital energies are so impaired, attention to the roots and cutting back the dying branches may induce healthy growth. (2), The Maidenhair Ferns probably failed owing to the roots getting into an unhealthy state, this being the usual cause of failure. In a greenhouse, the temperature of which sometimes falls to 40 degs., the plants will not endure the soil being continually wet, while on the other hand, they should not be kept dry at the roots. Just sufficient water should be given to keep the fronds from flagging. In another month the Ferns may be repotted, shaking away all the old soil and using fibrous loam to which a little peat and silver sand is added.—F.

2835—**Neglected border** (*R. E. D.*).—If a border has been neglected and has become poor, it should be remade in the autumn by deeply trenching the ground and adding a liberal allowance of manure, and in the case of a stiff clay land, leaf-mould and road-scrapings. When it is once well made, an annual mulch of manure, and soot-water during the summer should give it good heart for some time. If it is found necessary to replant and reduce the clumps of herbaceous perennials, this work must be carefully carried out, the bulbs being lifted and planted again with as little delay as possible. Fresh turves may be laid down to widen the lawn. The Fig-tree may be thinned in early spring, but the leading shoots should not be cut back. Lilium davuricum is a native of Siberia. It grows about 2 feet 6 inches high and has orange-scarlet flowers. It is perfectly hardy. There is no reason why the stronger Trumpet Daffodils, such as Horsfieldi and Emperor, should not flourish in the orchard if the Grass is not allowed to smother them and their leaves are not cut off until they die down naturally.

2836—**Standard Roses for circular bed and Chrysanthemums** (*Anon*). — Your circular bed which has a diameter of 10½ feet would take about twenty standard Roses, or rather, standard and half-standard plants would give the best effect. As you say the soil is heavy, we take it that very little, if any, peat soil has been used for the Rhododendrons. Roses prefer good clayey loam, and would not tolerate peat. We can recommend the following twenty, and they would be quite distinct: Boule de Neige, white; Ollo, pink and white; Blairi No. 2, pale rose; Gloire de Dijon, Bouquet d'Or, Grace Darling, pink; Mme. G. Luizet, blush; Heinrich Schultheis, deep

pink; La France, Pride of Waltham, salmon; Duke of Teck, scarlet; Dupuy Jamain, cerise; Gen. Jacqueminot, deep red; Ulrich Brunner, light red; Charles Lefebvre, crimson; Duke of Edinburgh, crimson; Eugene Furst, crimson; Abel Carriere, blackish-maroon; Prince C. de Rohan, rich maroon; Sir R. Hill, claret. Mons. Boncenne is a good dark Rose and is identical with Baron de Bonstettin. The following early Chrysanthemums are good reliable kinds. September and October is their season, but a canvas covering will keep them in condition sometimes till Christmas. Alice Butcher, Blanche Colomb, California, C. Schneider, Fiberta, Flora, G. Wermig, Golden Drop, Mme C. Desgrange, Mrs. J. R. Pitcher, Scarlet Gem, W. Holmes.

2837—**Asparagus-bed** (*H.*).—As your friend's Asparagus-bed, planted four years ago, does so indifferently, it may be that many of the original plants died; still, it would have been odd if all had died and those living should have been strong last year. The dressing of manure given will doubtless do good, and if you could now add a good dressing of soot, or a moderate one of bone-meal, and lightly fork in the manure just a few inches deep, the plants living should benefit. Really, there ought to be good stems to cut, for when growth begins it will be as well to put in other young plants, first forking up each bare place well. If the roots were obtained and planted 12 inches apart in a row in the garden now, or a little later, they would make growth, and then, for mending the bed, could be taken up with lumps of soil on a fork and so be planted.

2838—**Starting Vines** (*Anxious*).—A temperature of about 55 degs. will suffice for starting Vines slowly into growth. On sunny days, however, it will certainly rise higher. The temperature given is enough for nights and dull days. Syringing is hardly needed, especially if you have pot plants in the house, as from the watering of these there comes enough humidity to help the buds to burst. If the Vine border is in the house, let it have a light forking, a dressing of superphosphate of lime and potash, or any good special manure, strewn over the soil, and then a thorough soaking of water. It is most important that Vine roots should not be dry when the Vines are started into growth. It is not an unfrequent cause of blind buds.

2839—**Spotted Arums** (*Painter*).—The spots on your Arum leaves seem due to scald, rather than to any fungus or disease. Possibly the sun may have scorched the edges, as seen in the sample leaf sent. It is noticeable that there are no spots elsewhere, but only on the edges. Possibly just shaking the leaves or running a sponge over them after syringing may prevent further trouble. We do not regard harm to have resulted from your moderate guano dressing, especially as that manure does not dissolve all at once. Are you certain that there has been no objectionable paint or other compound put on your hot-water pipes? Failing that reason we see none other than probable scalding.

2840—**Lilies of the Valley** (*T. S.*).—We should regard the stamping down of the crowns of Lilies of the Valley as the act of a lunatic. It is contrary to all practice and sense. Seeing that the crowns always form just on the surface of the soil, what mischief must be done to them by stamping or beating them down—it would indeed be a bull in a china shop. To strew a little fine fresh soil over the beds is all very well. Our best growers top-dress their beds in the autumn, after the foliage has died down, with that or half-decayed manure. Lilies of the Valley like some feeding, and a dressing of guano or soot, or of mixed superphosphates, potash, and nitrate given now or earlier to wash it in, will do great good, especially if the plants have been some time bedded. A portion of a bed should be lifted and replanted in fresh soil every two years.

2841—**Short-stem Tulips** (*E. S. H.*).—Your Tulips, presumably, are scarlet and other Van Thols. It is probable that you placed them in heat too soon after potting, instead of repotting early and standing the pots in a dry place outdoors, and covered up thickly with ashes or Cocoa-fibre refuse for several weeks to induce free rooting first. Generally we see these Tulips in the usual form elsewhere. When started in warmth before well rooted imperfect growth results.

2842—**Managing kitchen garden** (*Violet*).—As you must keep a garden labourer, it would answer so much better to get one who did know something of the work to be performed in a vegetable garden. You must have your ground deeply dug at once. You may then sow Chelsea Gem dwarf Pea in rows 3 feet apart, also Broad Beans of the Early Long Pod type, at 2 feet apart. Some early Nantes Carrot seed may be sown on a warm border, and Breakfast Radish seed more thickly on a border also, covering up for the present with long litter. Parsley sow in April, also Beet and Spinach in rows. Sow Celery seed in a frame to have strong plants to put out in July, or March is soon enough. It will be well to leave Potato planting till April. After early Potatoes follow with Kale, Coleworts, Spinach, Turnips, Onions, Celery, etc. In one crop succeeding another the season will determine variety, and anything diverse from the preceding is best. You should purchase "Vegetable Culture," by A. Dean, Macmillan publisher, price one shilling, to help you in your undertaking. To bloom Salvias in winter of the grandiflora tribe, cuttings should be taken in the spring, and after rooting the plants grown on in pots outdoors during the summer; then in October put under glass. Sow Hollyhock seed outdoors in May to bloom next year.

2843—**Honeysuckle.**—I have one in greenhouse, and notice that on many of the young shoots the leaves are of quite a different shape to the others, being very irregular on the border. Is it right for them to be so, and should they be allowed to remain, or pruned off? I enclose two for inspection, one of each kind of the same plant.—L.

*** *There is nothing the matter with the Honeysuckle. The leaves not infrequently assume this shape.*

2844—**Irises and Ixias not flowering.**—Early in October I planted Spanish Iris in glass dish, Narcissus incomparabilis plenus and Ixias in china bowl. All the bulbs were planted in Cocoa-nut-fibre, and given charcoal and crocks for drainage, and were kept in greenhouse some time, but are now in my sitting-room window. The Iris and Ixias are in full leaf, but show no signs of blooming, but look healthy. The Narcissi are about an inch high. Kindly tell me if you think there is any chance of the Iris and Ixias blooming, as they have been in their present state for many weeks now?—T. M. H.

*** *The Irises and Ixias may yet bloom. It is too early to expect their flowers yet. The Double Narcissi appear to be backward, as they are only about an inch high. Singles are preferable for room culture to double varieties, expanding more freely under unfavourable circumstances. "T. M. H." says that these bulbs are planted in dishes and bowls, and in the next sentence mentions giving drainage. This is rather mystifying, as china bowls are not so constructed as to afford drainage.*

2845—**Clematis Flammula.**—Should Clematis Flammula be cut down annually or not? If so, to what extent?—S. M.

*** *Yes, Clematis Flammula should be cut down annually. The best time to prune it is in the early part of November, when the whole of the wood may be cut down to within 8 inches of the ground. Prune your plant at once. Mulch with decayed manure, and water freely during dry weather.*

NAMES OF PLANTS AND FRUITS.

Names of plants.—*J. C. B.*—There is no plant known by the name of Persicaria. Polygonum persicaria is a common British weed, known under the English names of Peach-wort, Crab's-claw, and other *aliases*. Probably "J. C. B." alludes to the hardy annual Polygonum persicarioides, which may be sown in the open and blooms in July.——*W. Painter.*—Phlebodium aureum, a deciduous Fern, hence condition of fronds.——*J. B. C.*—Salvia patens.——*F. H. B. Carlow.*—1, Rhamnus Frangula; 2, Garrya elliptica; 4, Goniophlebium appendiculatum; 5, Abies (Pseudotsuga) Douglasi. The yellow flower was Oxalis Ortgiesi, and the variegated leaf Strobilanthes Dyerianus; the numbers had unfortunately got mixed.——*Hibernica.*—Phlebodium aureum; perfectly natural.——*Durley.*—It is, of course, not at all easy to name Zonal Pelargoniums. 1 is Rev. A. Atkinson; 2, Swanley White; 3, Mme. Vaucher; 4, Double Raspail Improved.——*H. M. B.*—Epiphyllum truncatum.——*Coney.*—The flowers are Nice Anemones, forms of A. coronaria.——*G. C.*—Libonia floribunda.——*A. J. C.*—1, Aloe gasterioides; 2, Asparagus plumosus; 3, Cyrtomium falcatum; 4, Pteris tremula; 5, Doodia lunulata; 6, Much shrivelled, but evidently Libonia floribunda.——*Amateur, A. U.*—Escremocarpus scaber. It might probably succeed with protection.

Names of fruit.—*Pomologist.*—The reddish Apple is Cox's Orange Pippin; the other the Old Golden Pippin.

LAW.

Liability of purchaser to fence plot of land.—I bought 1,000 square yards of land in the corner of a field to cultivate as a garden, and I put up a post and wire fence to divide my land from the remainder of the field. The posts are 5 feet out of the ground and 6 feet apart, and there are four rows of plain wire. I have also planted a Quick fence within the wire fence, but plant nothing within 4 feet of the fence. The owner of the field keeps cattle and horses, which continually try to reach the vegetables growing in my garden, and they loosen the posts, and have, in fact, pulled some of them up. I am afraid they will eat off my Quick fence as fast as it grows. Can I compel the owner of the field to fence again his cattle?—B. M.

*** In such a case as this the deed of conveyance often contains a covenant, or stipulation, requiring the purchaser to make and maintain such a fence as may be necessary to divide the two portions of the field, and to prevent the stock on the one portion straying into the other portion. If the conveyance to you contains such a stipulation or covenant, you must maintain such a fence, and, if the fence you have already erected is not sufficient, you must replace it by a more substantial one. Should you neglect to do this, and the cattle or horses stray into your garden, you will have no remedy, while you will be liable to the owner if they are injured while in your garden. It is highly probable you are bound to fence, but if you are not so bound by the terms of the conveyance to you, you are not bound to put up a fence of any kind, and you may, if you choose, pull up the fence you have put down, and leave the owner of the field to keep out his stock as best he can. If his stock gets into your garden, or does any harm to your fence (supposing you allow it to remain), he will be responsible to you for any damage done. But if you are not under any obligation to fence, your best plan will be to pull up the fence you have put down, as in the course of time you will become bound to maintain the fence against your neighbour's stock, if you allow your fence to remain and repair it as occasion requires. In such a case as yours, where you will never have any live stock on your own land, you will, in course of time, be subject to a prescriptive obligation to fence against your neighbour's stock, although such an obligation cannot arise in less than twenty years.—K. C. T.

A gardener's notice.—I have been nine months in my present situation as gardener, and supposed I was giving satisfaction until this afternoon, when my employer told me my work was not satisfactory, and that she had engaged another gardener, and that I could take a week's notice. Am I bound to accept it? I am the fifth gardener within two years.—D. McG.

*** If you look at the answers given in last week's paper you will see that in the absence of any distinct bargain as to notice you are entitled to a month's wages or a month's notice. If your employer requires you to leave at the end of the week's notice, and refuses to pay more than a week's wages, you may recover the balance of three weeks' wages in the county court.—K. C. T.

Necessity for formal conveyance of land.—I have lately bought a strip of land, which at one end is 30 inches in width, and which at the other end terminates in a point. Is it necessary to employ a solicitor to draw up an agreement, or will a common receipt (stamped) for the purchase money be sufficient?—Constant Reader, W. D. T.

*** You must get a solicitor to draw a proper conveyance of the property to yourself, as the stamped receipt for the purchase money would be practically useless. It is quite possible that circumstances may exist which would warrant you in dispensing with a formal conveyance, but such circumstances can very rarely exist, and the solicitor will advise you on the point. I say it is possible such may be the case, but it is most improbable that it will be so.—K. C. T.

Rating of greenhouse.—I have just erected as a tenant's fixture a span-roofed greenhouse, 15 feet by 10 feet, standing upon a row of loose bricks, laid on the surface of the garden. I have the written permission of my landlord to put up such an erection and to remove it, as and when I choose. I do not use the greenhouse to grow plants for sale, although I have occasionally sold an odd one. My landlord pays all rates, etc., but the greenhouse does not belong to him, and he will pay no rate upon it. Can I be compelled to pay the rate, which I am told will come to about twelve shillings a year? There are several greenhouses near which are not rated, and if mine is rated I shall pull it down.—H. H.

*** The greenhouse is liable to be rated, and although the owner of property may by arrangement pay the rates of his property, yet the remedy of the rating authority is always against the occupier and not necessarily against the owner. You can scarcely deny that the erection of the greenhouse has not increased the value of the occupation of the property, and although as between you and your landlord he may be liable to you for the unincreased value only, yet the rating authority are entitled to payment on the full annual value, and if they cannot get it from the owner they will get it from you. It may be that the increased value is very small, and if so the increased rate should be equally small. For the purposes of the poor law valuation the annual value of any property is the sum at which it would let to a yearly tenant, and, if in the situation in which the greenhouse stands it could have no occupier besides yourself, the annual value is the extra rent you would give your landlord if he bought it of you, or which you would have given if he had put it up for you.

BEES.

DOUBLE HIVES.

What is known as the Wells hive is practically two hives united together, to contain two colonies of Bees, and consists of a body of sufficient inside measurement to contain twenty frames, being divided in the centre by a perforated wooden partition which, while allowing the Bees on each side to be almost in contact, yet they are unable to mix together. There are four entrances to this hive, two in the front quite close together, but separated by a projecting piece of wood to guide the Bees into their own side when alighting, and two others, one at each end. Alighting boards are provided along the whole length of the front and ends. The front entrances are used in the winter, when the two colonies live close together with only the per-

forated division separating them. Great economy in heat resulting from this plan, the Bees winter better, consume less food, and come out strong in the spring, ready for any amount of work. Under this system swarming is checked in great measure; the Bees build up with great rapidity compared with stocks in single hives, and soon cover the whole of the twenty frames. The supers being common to both colonies—the Bees from each having free access to them, queen excluder is placed beneath. Should this be omitted, however, the whole business ends in failure, as on no account must the queens be allowed to meet. Instead of putting on supers directly the Bees show signs of want of room, a second body is added, placing it below the filled body; the greater air space thus provided prevents swarming and causes the colonies to become exceedingly strong. Supers are then put on, either singly or in pairs, results being a far larger return of honey than could have been obtained had the two colonies been worked in ordinary single hives.

S. S. G.

Hive sheltered by Yew-hedge (*C. D'O. Hutchins*).—We have never known Bees to suffer in any way when kept near Yew-trees or under a Yew-hedge. The common Yew, Taxus baccata, bears red berries with green seeds, which are much sought after by various song birds during the winter months. The foliage of the Yew is, however, poisonous to cattle, especially when withered or in a dead state; care should, therefore, always be taken to destroy by burning all clippings of Yew-hedges. The position will be very good for your hive, and your Bees are likely to do well in it. It would be wise to remove the hive as soon as possible, before the Bees commence taking their spring flights. If they become active before removal takes place it will be well to perform the moving by easy stages of a few yards at a time, and every fine day, to avoid loss of Bees from their being unable to find their way back to their hive.—S. S. G.

POULTRY.

Cross for egg production (*Rhoda*).—Your letter was mislaid, or would have been replied to a week ago. The cross I would recommend you to adopt under the circumstances, seeing that you already have the Orpington hens, is one between that breed and the Leghorn cock. The principle of the cross is to use a hen belonging to some sitting breed which lays an egg with a tinted shell, and a male bird belonging to a non-sitting breed. The Minorca would, doubtless, answer, but I have always found the Leghorn breed to make the best cross, and it is for this reason that I prefer it to the Minorca or Andalusian. For choice I would prefer the Brahma, the Langshan, or even the Cochin to the Orpington hen, because they are older-established breeds than the Orpington, the latter being a compound of the Plymouth Rock, Langshan, and Minorca. With regard to the choice of a male bird, I prefer the white or the brown Leghorn to any of the more recently introduced varieties, and I should endeavour to secure a bird from some good laying strain. The chickens should be hatched in March and April, and you may expect eggs from the beginning of October throughout the winter. The cockerels from the cross will be useless for stock purposes, but will come in for table when three months old, as they grow rapidly and are very plump. I have found the crossbred birds very hardy and satisfactory in every respect.—Doulting.

Pullets not laying (*H. F.*).—Your pullets can scarcely be said to have a satisfactory record for December or January, but this, I think, may be attributed to other causes beyond that to which you refer, and to which I will allude later. Pullets, when they lay their first batch of eggs, are generally objects of great interest to their owners, and in consequence are catered for a little more freely than is desirable. In these days we are so often being reminded of this and that "record" being broken, that we cannot rest satisfied with average results, and so it comes to pass that instead of being content with seven eggs a fortnight from each bird, we try, at least, to get into double figures, and to secure this end we adopt the use of stimulants. In the human subject this plan too often leads to deplorable results; in the hen the ill success assumes a different form, to wit, the production of soft-shelled eggs. These, for the most part, are dropped from the perch at night, and may then be picked up; in the morning they will be eaten by the pullets, especially if the skin be broken in the fall. I believe this to be the secret of irregular laying in most cases, and the remedy is to force less. With regard to the cramp, it is not unlikely that the birds have become chilled in some way, in spite of the precautions you have taken with their run. The introduction of the cockerel would not have affected the egg supply or the health of the pullets in the slightest degree. He is evidently a very young bird, and of a breed which does not mature very rapidly. Like many other amateurs, you were a bit too impatient in mating the birds. For laying purposes you do not want to hatch your chicks until the middle of March, and if you were to mate the parent stock at once it would be in good time. Pullets which are hatched too early are practically worthless for winter laying.—Doulting.

Poultry breeding (*Incline*).—I see no reason why you should not breed from the two hens which have been laying. The first, it is true, laid somewhat irregularly, but this is not uncommon in the winter with hens in their second season. It does not matter for your purpose whether the combs drop or not, as I take it you are breeding specially for eggs and not for exhibition. If you can distinguish between the eggs of the two hens I would advise you to breed from the heaviest hen, as size, even in layers, is an important consideration, and light birds (that is, those which do not weigh well) are to be avoided, as they have a tendency to become consumptive. Your pullets are best separated from the cockerels when they are about ten weeks old; the cockerels can then be fed better and be sold for killing a fortnight or three weeks later. I am not partial to the plan of letting the pullets run with the adult Fowls if it can be avoided, as the practice tends to earlier maturity, and this is to be condemned. You do not want pullets to lay until October. I think you feed your Fowls a little too well. Mine are kept in runs, and fed only twice a day, and I rarely use the tonic which you are giving every other morning. The scaly legs should be well rubbed daily with sulphur ointment.—Doulting.

Case of protracted laying (*Plymouth Rock.*).—Your pullet undoubtedly did well, but I have known results equally good. For example, in 1872 I had an August-hatched Buff Cochin pullet, which began to lay in February, and for 28 days in succession laid her egg before breakfast. She then became very broody; so it is possible your bird is the better of the two. Again the previous year I had a Dark Brahma pullet, the first I ever had, which in 91 days laid 84 eggs. Here there could have been no mistake, as the pullet was the only one on the premises which laid tinted eggs. You should breed from the pullet in question, mating her with a two-year-old cock, and retain her chicks for laying purposes. The old hen is probably a fair layer and therefore the moult would tell upon her. You should give her a little cod-liver oil daily, also a few meat scraps, or bread soaked in ale, and she will probably come right.—Doulting.

BIRDS.

Canary plucking out its feathers (*Arthur Longside*).—It is very difficult to effect a cure when a bird has got into the objectionable habit of feather-eating, although occasionally it is suddenly discontinued, when the bird quickly regains its lost feathers, and in a week or two is looking as gay as ever. The habit is sometimes acquired through want of occupation, particularly so in the case of the Parrot tribe, who are very much given to feather-plucking—a piece of soft wood to nibble at often proves a cure in this case. Do you keep your bird well supplied with fresh greenfood? Grossness of the skin, caused by food of too heating a nature, will sometimes induce a bird to pick out its feathers. Avoid giving your bird pampering food, such as sugar, egg, or sweet cake; these things, besides causing a gross condition, give rise to diseases of the liver and bowels, and to which countless numbers of young Canaries fall victims yearly. Give your bird a piece of cuttlefish-bone, placing it between the wires of the cage; this will afford it healthful amusement, and probably help to break it of the bad habit it has acquired. If it has plucked any places bare, you might anoint them with vaseline, repeating the dressing frequently, and put a piece of iron in the drinking water, which, becoming oxydised on the surface, communicates to it a tonic property, and will assist in the renewing of the feathers, should the bird be induced to discontinue its bad habit. Give fresh water for bathing every mild day, and avoid an over-heated room; the bird-room should be well ventilated while free from draughts.—S. S. G.

Canary (*Fancier*).—You should have given particulars as to the feeding and general management of your bird, as without such data it is often difficult to come to an accurate conclusion as to the cause of death. The bird appears to have been suffering from inflammation of the bowels, which may be caused either through its having caught a chill from a sudden change in the weather, or through its having bathed in a cold temperature, or it may arise from errors in feeding. Although all remedies appear to be ineffectual against this malady, especially if not taken in hand in good time, relief is sometimes obtained by keeping the patient warm and in a state of quietude; administering a few drops of olive-oil, and putting it upon spare and simple diet, of a non-stimulating character. A little freshly-made bread and milk may also be given daily. Cage-birds require the greatest care and attention, being at the best but frail creatures. Many die very suddenly, and a good songster will often sing to the last, as in the case of your Canary, although suffering from a deadly complaint. Do not pamper your birds with rich food of any kind; give Canary-seed as a staple diet, a little Rape, and only a few seeds of Hemp occasionally. Supply fresh green food in small quantities, removing what is not consumed before it becomes withered and stale. Maintain an even temperature in the bird-room, as far as possible avoiding cold currents of air, and supply plenty of fresh, pure water, both for bathing and drinking.—S. S. G.

MANAGEMENT OF CAGE BIRDS.

The Red-backed Shrike (Lanius collurio). This very handsome bird is migratory in its habits, appearing in our island in April, taking its departure early in October. It is abundant in some seasons on the Downs and common lands in Surrey, Sussex, and Kent, and generally selects a dense Furze-bush or Hawthorn in which to build its nest, which consists of dried Grasses, Moss, and vegetable fibre intermixed with wool. The eggs are of a pinkish-white, with markings of pale brown, and five or six in number. In the male of this species the upper parts generally are of a rufous-brown, the head, back of the neck, and tail-coverts grey, breast and flanks of a roseate tint, quill feathers dark brown. The two central tail feathers are black, the rest more or less white. The length of this bird is about 6¼ inches. In the plumage of the female the upper parts are of a dull chestnut-brown, the under parts greyish-white, with narrow semi-circular brown lines on the chest and flanks, while the back of the neck is tinged with ash-grey. The young of this species are so very clamorous while in the nest that they often betray their place of concealment. In its wild state the Shrike feeds upon large insects, especially of the beetle tribe, and grasshoppers, and impales numbers of these on the spines of the Thorn or Furze for future use; small field mice, small birds and nestlings also fall victims to its rapacity. This is a very lively, animated bird in captivity, and is a great imitator of the songs of other birds, which it interweaves with its own natural strain, and mixes together the notes of the Nightingale, Goldfinch, Redbreast, and Lark. S. S. G.

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GARDENING ILLUSTRATED.

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INDIAN AZALEAS AFTER BLOOMING.

The flowering of these fine and well-known greenhouse plants is often so profuse that it proves most exhausting to the plants, and, again, another heavy strain is on their energies by new growth beginning before the blossoms fade. To these are added attempts at seed bearing, almost before the flowers begin to droop or wither. The plants are thus subjected to a threefold tax upon their energies, which frequently brings them into a very weak state; hence, the moment the blossoms fade, means should be adopted to check further exhaustion and renew the vigour of the plants. To accomplish this essential matter, all stale blooms and embryo seeds should be at once picked off. Exhausting as a full crop of flowers is, a very few seed-pods allowed to develop will take more vital force out of Azaleas than a full head of bloom does; therefore, unless in cases where seeds are desired to mature, they should be promptly removed whilst still young, and before they begin to swell. There is another powerful antidote to the exhaustion of Azaleas and other plants, which, owing mostly to shortness of labour when most needed, is far less used than formerly. This consists in the careful removal of all weakly and crowded shoots the moment the parent plants are out of blossom. This operation concentrates the strength of the plants and secures all the light, air, and sap available for those left, and these grow more vigorously in consequence. So much for the prevention of a waste of vital force in the tops of Azaleas after flowering. Not a few, however, of the more successful cultivators begin the process of husbanding force (in the case of these plants) before the flowering season. They thin out the smaller bloom-buds before they open as well as remove the more weakly shoots afterwards; by such means the bloom is finer, more equally distributed, and higher coloured. Loss of vigour through excessive blooming is also prevented, and in regard to such matters the hackneyed phrase can hardly be too often repeated—that prevention is infinitely better and safer than cure. As to the more direct means of renewing the vigour of Azaleas at the time now under consideration, they are of a threefold character—heat, moisture, and fresh food. Though practice differs considerably as to the first, there can hardly be a question that a temperature of from 60 degs. to 70 degs. proves a welcome stimulus to them for a month or six weeks when they are making their new growth. It almost seems that the more rapidly this were made the better for the health, vigour, and free flowering of the plants. Of the

Importance of moisture at this stage, alike at the roots and in the atmosphere, there is yet a more general agreement of opinion among practical men. Abundance of moisture in earth and air during the period of wood-making is not only the surest antidote against red-spider and thrips, but the most certain means of hastening and pushing on vigorous growth, strong enough to develop flower-buds further on in the season. As all these details of culture favour rapid growth, it follows that the roots of Indian Azaleas should be liberally fed during their growing period. It matters little whether they are fed by liquid or solid food, the one point of importance being that when needed it should be supplied in abundance. Such a great deal has to be done by these plants in so short a time that double supplies of nutriment may be needed by their roots during their wood-forming period. For this and other reasons not a few prefer to shift their plants into larger pots when they require it as soon as the bloom fades. Whatever compost is used, fresh soil of any suitable sort provides more or less of new food just when the strain on the plants is about to reach its maximum. Hence it seems logical, and has also proved very successful, to shift Azaleas at this stage. But it is easy to give these plants too much of a good thing in the form of over-large pots. When this occurs, and especially when combined with applications of liquid-manure-water, the Azaleas lose their flowering habit and run off into rampant growing evergreen shrubs of little ornamental value, and through such mistakes being made reshifting them before or during active growth has come to be by some regarded with doubt and suspicion of evil to come; but if the shift given be a small or moderate one, no evil comes of potting before or during growth. The matter of size of pot should be so nicely adjusted to that of the dimensions and character of plants as to ensure that when the new shoot growth is finished the still active roots should be pushing through the soil against the sides and bottoms of the pots with great energy. This pot-filling and root-pressure prove, in fact, important, if not vital, factors in producing Azaleas with full heads of bloom annually, and deserves more attention at the hands of gardeners of all classes than is sometimes the case. Carefully shunning the danger of overpotting, Azaleas may be most safely and successfully shifted just as they are starting into growth. They will thrive well in pure peat with a little silver-sand added, or two-thirds peat to one of loam, or a half and a half of loam and peat, or equal parts of loam, leaf-mould, if sweet, and peat, a liberal allowance of sand, with a little broken charcoal being used in all cases. Some use a little bone-dust, horn-shavings, etc., in the compost, but everything in the form of manure is best provided in the shape of clear liquid, and for Azaleas soot-water of very moderate strength and free from sediment is one of the very best of all liquid stimulants.

After treatment.—First, gradual exposure to the open air in the late summer in a semi-shady spot (not under trees) for a few weeks in the summer until the growth hardens, and then placing in the sun till the end of the growing season. In such positions the plants will require frequent turning round, careful watering at the roots, and during dry weather they should be carefully syringed overhead with clean soft water at least twice a day. Should thrips or red-spider appear, which they really ought not to do under such treatment, a sprinkling overhead with a weak solution of Tobacco in warm, soft water will either kill these pests outright or drive them away from the plants in disgust. Towards the middle or end of October, according to the weather, house the Azaleas, at which time each shoot will, in the case of healthy plants, show a terminal flower-bud so prominently developed that, subjected to less or more heat, as needed, the plants may be had in bloom at will from December to May. Some few growers, to save watering, turn their Indian Azaleas out of pots into prepared beds of soil, either in cold pits or in the open air throughout the summer and autumn months, say from June to October. This answers well when carefully managed, but the system of planting out needs more labour and skill than that of growing in pots. Every cultivator of these Azaleas no doubt will have noticed how hard the balls of roots of the plants become; they are almost like wood or iron through the number of their fibres and the severe pressure of the latter on the pots before turning out; and, unless the bed of soil between the plants (when set out in this way) is made almost as hard (by ramming down) as the balls of the plants are, the water slips away through the looser portions of the beds, and leaves them with their fringe of living roots on their exterior surface to perish of thirst.

THE MEADOW RUES (THALICTRUMS).

There are many members of this family, distinguished by finely-cut leaves, but none are, however, remarkable for their flowers. Not a few of the smaller forms are as charming as a Maiden-hair Fern, and the leaves of T. minus are used for decorations.

T. anemonoides (Rue Anemone).—This produces its delicate white flowers, much resembling those of the Wild Wood Sorrel (Oxalis) above its daintily-cut foliage in the spring. The plant is best adapted for rockwork in deep, moist soil, and partial shade. A double-flowered variety is in cultivation, and may be preferred to the single one.

T. minus, one of the most desirable of all the species, forms slightly glaucous, compact tufts, from 1 foot to 18 inches high. It may be grown in any soil, and requires only that the slender flower-stems, which appear in May and June, should be pinched off. Not alone in its aspect, as a little bushy tuft, does it resemble the Maiden-hair Fern, for the leaves are almost pretty enough to pass, when mingled with flowers, for those of the Fern; they are stiffer and more lasting than Fern-fronds, and are well suited for mingling with vases of flowers, etc. There are probably several forms or varieties of this plant. It would look pretty isolated in large tufts as an edging, or in borders, or in groups of dwarf subjects. Easily increased by division.

Fern Rue (T. adiantifolium) is valuable solely for its foliage, which bears a striking resemblance to the fronds of the Maiden-hair Fern, from which it derives its name. The elegance of the delicately-cut foliage gives the plant a graceful appearance, and its fronds, as they may almost be called, are most useful to arrange with cut flowers.

T. tuberosum grows about 9 inches high. Besides the graceful foliage which we find in all

the dwarf forms of the genus Thalictrum, we have in this instance an additional beauty in the abundant mass of yellowish cream-coloured flowers which this plant produces. It is perfectly hardy, and thrives in a deep peat soil. S. Europe.

Besides these dwarf kinds there are about two dozen species in cultivation, all of which are of tall growth, ranging from 3 feet to 6 feet high. There is a great sameness amongst them, as all have elegant, finely-cut foliage. One or two of them are well worthy of cultivating in a mixed border, as their elegant growth associates admirably with gay flowers, and for this purpose we should choose

T. AQUILEGIFOLIUM, which is about 4 feet in height, and a vigorous grower in any soil. When the tall flower-heads expand their somewhat insignificant blossoms into a cloud of yellowish-white inflorescence, the effect is striking, the finely-formed leafage and purple stems making a pleasing contrast. It looks well with L. croceum. There are two or three varieties of it, one (atro-purpureum) with dark purple stems and leaves. All of the Meadow Rues are admirable subjects for naturalising.

MAKING GRAVEL WALKS.

WALKS may be laid down correctly enough, and yet not be enjoyable at all times owing to their faulty construction. If they cannot be used in wet weather or after a frost, of what use are they? They may be properly drained, the gullies on steep walks being sufficient in number—and the gratings connected with these be kept properly cleared—to keep the gravel from being washed away, and yet be imperfect. So-called binding gravels are, as a rule, unreliable. While the weather is favourable they give a good finish to a walk and are also pleasant to the feet, and it is a pity they are not more durable. The way out of the difficulty with many is to face over the walk either with fine gravel, and which in some few cases is not harsh to tread upon, especially that procured from the seaside. Of late years, however, "chippings" have taken the place of both faulty binding gravel and the pea-like gravel obtained from the coasts, said chippings being in many cases hard stones cracked up finely by tramps who patronise casual wards, doing this work instead of, as heretofore, picking oakum. This form of surfacing is not particularly expensive unless hauled a considerable distance, always looks clean, can be walked upon in all weathers, and is very durable. All the same, it is far too coarse and harsh to the feet. If loose gravel is used as a surfacing, it ought always to rest on a well-prepared foundation of coarse stones, with a middle layer of similar material of a size that would pass through a 1-inch mesh sieve. Fine waste from stone quarries is preferable to chippings, and if this is passed through a quarter-inch circular-wired sieve, the coarser parts going underneath and that which passes through the sieve being used as a surfacing, there will be no harshness about it, and the walks could be passed over in comfort during wet as well as fine weather, frosts having no prejudicial effect. Where binding gravel is freely used weeds and Moss most abound, this necessitating, or at all events leading to, the fine gravel being turned every two or three seasons. Now that the application of weed-killers has rightly become so very general, gravel walks of all kinds are very simply and cheaply kept in a clean state, and these do not make them so damp and rotten as used to be the case when salt was largely used as a weed destroyer. As far as kitchen gardens are concerned, the walks ought to be both few in number, straight, and well made, binding gravel being of little service in these places. Much wheeling quickly wears out the best made gravel walks, and when the latter lick up badly owing to the presence of too much clay in the binding gravel nothing can be more miserable to deal with.

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GARDEN WORK*

Conservatory.

The latest improvement in golden-flowered Arums, Richardia Elliottiana Rossi, is named after Mr. Donald Ross, the superintendent of the Cape Town Botanic Gardens, and will no doubt soon be plentiful in this country at a reasonable price; but it is not likely to be so popular as the white form. Hundreds of thousands of the white Arum blooms are used in wreath-making, and were it not for its adaptability for this work the demand in a cut state would not be so great, though it will always be a valuable plant for the conservatory, and the yellow form will be very useful for the same work when it becomes common. To obtain strong corms—and these only will throw fine spathes—the cultivation must be good from the first. If more stock is required, the young offsets may be carefully lifted out of the pots containing the old plants, and be potted singly in good loam and a little old cow-manure and some sand. Pot firm and place the pots in a light position and keep moist. Plants started now and shifted on as more pot-room is required will be good flowering stuff next winter. When grown in a crowded state, often a considerable distance from the glass, they are bound to come weak and poor. Roses in pots should now be a special feature in this house, and if a few standards are grown in pots they will come in very useful. Standard Teas are very useful in the conservatory; in fact, more so than dwarfs. It will, of course, be easily understood that only well-established plants will force, though the late-potted plants will be useful later on brought on cool. Acacias will be nicely in bloom now. They are charming plants at this season, and are not difficult to grow. Prune into shape after flowering, and repot if necessary when the young shoots are an inch or so long. Yellow loam is the best soil for Acacias; pot firmly. Sometimes a little leaf-mould or peat is used with the loam, but if the loam is first rate nothing need be added. The growth in yellow loam is sturdy and short-jointed. Azaleas, both the Chinese and the deciduous varieties, are very bright and effective now. A number of plants have to be grown to keep up a succession of bloom from Christmas till April or May. The late plants, in addition to being late varieties, will have been retarded in a cold-house. As soon as the early Azaleas are over, pick off faded flowers and seed-pods, and see that they are free from thrips, and then move to warm vinery or intermediate-house.

Stove.

Caladiums and other foliage plants which have been resting will now be moving, and should be repotted. The strong growing varieties will make larger, sturdier foliage in yellow loam and old cow-manure. The delicate sorts, such as argyrites, must have a lighter compost. The last-named is a delightful little table plant when well grown. Gloxinias will be starting now—in fact, I have had the early bulbs in flower in February and others coming on in succession till the end of the summer. It will be found advisable to grow these things in rather better soil than is customary, and the remark applies to the Streptocarpus If shifted on into 8 inch or 10 inch pots, there will be no difficulty in having plants from 2 feet to 3 feet over. Instead of potting these things in peat, leaf mould, and sand, get some good yellow loam and old cow-dung, and a little sand and crushed charcoal just to keep the soil open. Drain the pots well, and pot fairly firm. A few of the early-rested Achimenes may be started now. Give a little weak liquid to Himantophyllums, Amaryllis, and Eucharis Lilies, which are in condition for bloom. Pancratiums are lovely things, and one plant may last in bloom for some time, though this is a disadvantage where the whole spike is required for cutting. For wreath-making the flowers are very valuable, much more so than the Eucharis Lilies. Temperature at night 65 degs., with moisture in proportion.

The North House.

This will be found very useful now for retarding Heaths, Azaleas, and other plants required later, as it will come in useful for Pelargoniums, Fuchsias, Tuberous Begonias, and any other plants one may require late. Calceolarias, for instance, and Cinerarias we used to keep back for the April shows; but there is always a use for a north-house.

Early Peach House.

Use the syringe daily if the water is soft. See the young wood is sufficiently thinned to secure sturdy, short-jointed growth Rub off all young fruits from the underside of the branches. If there are any signs of black or green-fly, vaporise with nicotine. See that the inside borders are properly moistened. Night temperature, 55 degs. Give a little air early in the morning, and increase it during the forenoon, but avoid cold draughts. Close by instalments, finishing finally about 3.30 on bright days. On dull days very little air will be required. Damp down immediately the house is closed.

Melons.

A light span-roofed house about 12 feet wide, running north and south, is the best structure for early Melons. The roof should not be of too steep a pitch, or it will be difficult to keep down red-spider; about 45 degs. will do. They must have a bottom-heat of 80 degs. to 85 degs., and also heat at night of 65 degs. to 70 degs. Plant in good yellow loam, and later on top-dress with similar material and press down firmly. Plant 2 feet apart, and do not stop main stems till the top of the house has been reached. Give liquid-mauure when the crop is set. Ventilate Melons freely so as to keep the foliage hardy and strong, but close and damp down early in the afternoon, so that the thermometer may rise to 90 degs. or so.

Window Gardening.

If any green-flies show themselves on Pelargoniums rub them off with a small brush (tooth-brush will do). Repot Fuchsias, and put in cuttings of young shoots under bell-glass. Sow Petunias, Verbenas, Balsams, and Tuberous Begonias. Tuberous Begonia tubers will soon be starting now, and should then be repotted in good loam, leaf-mould, and sand. Put in cuttings of Campanula isophylla alba.

Outdoor Garden.

All bulbs will be through the soil now, and the soil between may be broken with a fork to make spaces for sowing annuals by-and-bye. Violas or Tufted Pansies in the cutting or seed-beds may be put out now in good-sized patches. If any parts of the border require manure, some short, rich compost should be forked in As regards pruning Roses, it is too soon to prune the general collection yet, but we have an early border where we grow early-flowering sorts for cutting, and these for several years past have been pruned early in March. We have a good patch of General Jacqueminot that will be pruned first week in March to get early blooms for cutting, but the bulk of these will not be pruned till the 20th of March or later, as, for instance, we should not prune in frosty weather. It may be necessary to look over newly-planted trees and shrubs and see if they want water. There has been no rain of any account in our district for a long time, and I notice some recently-planted evergreens require water. Stir the soil among Carnations, Pinks, Tulips, Hyacinths, Pansies, etc. The season has been very favourable for growth. Pull weeds out of lawns and apply top-dressing.

Fruit Garden.

Look over orchard-trees and do any little trimming which may be required. When two branches cross each other the one most in fault and that can be best spared should be cut out. If there are any signs of Moss on the trees, give a good sprinkling of newly-slacked lime. The lime should be applied when the branches are damp, so that more of it may stick. Any trees which require top-dressing may have it now. This may assume more than one form. If there is a farmyard tank full of the drainings of the cattle-sheds, this may be carted and distributed over the roots of those trees which require nourishment. If the tank liquid is too strong, dilute it with plain water. If something more is wanted, give a sprinkling of some patent manure and water it in. Old Strawberry-beds may be treated in this way. In the early vinery the Grapes will now have been gone over with the scissors for the first time. A little more thinning may be required to relieve the thick places later on. The regulation of the lateral growth will be a weekly affair now. Some growers elect to lay the syringe on one side now and give the necessary moisture by damping borders and floors All inside borders must be moistened with warm liquid-manure. Dress Vines in pots with patent manure freely, and water it in.

Vegetable Garden.

The land is in prime order for seed-sowing, and many will be sowing main crops of Onions, Parsnips, etc. As a rule, the 1st of March is early enough to sow, but on soils much given to attacks of maggot February sowing gives the young plants a chance of growing away before the maggots appear. Wood-ashes from the bottom of charcoal heaps forms a good top-dressing for Onion and Carrot-beds, and a little may with advantage be dusted along the rows of Parsley, which are usually sown alongside a walk, where it will be easily gathered. Take more Celery and Rhubarb to Mushroom-house. A few strong roots of Victoria Rhubarb should be covered with tubs. The Rhubarb will soon grow under them now. A row or two of late Seakale should be covered with ashes or burnt earth to blanch. The Seakale should be covered at least a foot deep to ensure perfect blanching. As fast as the Celery is taken up clear the ground, and in digging over the land let the manure from the trenches be equally blended with the earth on each side. Cauliflowers, Peas, Beet, and Carrots may also follow Celery when the land has been dressed with soot and a little artificial-manure. Salt is a good dressing for porous lands, for root crops especially, at the rate of 10 lb. per square rod. Thin Carrots, Radishes, and Lettuces. Thinnings may be planted in other frames or on warm border outside. E. HOBDAY.

** In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

February 28th.—Potted Tuberoses, and plunged a part in bottom-heat; remainder will come on in succession. Planted Cauliflowers in a trench in front of one of the forcing-houses. Planted Duke of York, Beauty of Hebron, and Earliest of All Potatoes, covered from 5 inches to 6 inches deep. Put stakes to early Peas. Earthed up Cabbages Tied up a few of the earliest Lettuces loosely. Gave another dusting of lime to Gooseberry and Currant-bushes to keep away birds.

March 1st.—Put in more cuttings of various bedding plants. Anything will strike now in heat. We have a hot-bed for soft things and to raise seedlings. "Geraniums" are rooted over hot-water pipes in vinery. Our spring-struck plants are as good, sometimes better, than those struck in autumn. It improves the autumn-struck cuttings to take off the tops, and it at the same time doubles the stock; but this cannot be done without heat. Looked over early Peach-house to do a little more thinning of the young wood and remove young fruits from lower side branches.

March 2nd.—Moved Strawberries just beginning to colour to light, sunny house to ripen. We are finishing off with a little nitrate of soda and guano, 1 oz. to the gallon twice a week. Other plants are coming on in succession, as it will not do to be without Strawberries from the time we begin to gather till they can be had in the open ground. A border of Royal Sovereign can be partly covered with frames, if necessary, in order to hasten them. We have covered another portion of Asparagus-bed with lights to hasten growth.

March 3rd.—Planted a span-roofed house with Tomatoes. The plants in early house are now growing up the stakes, and the bottom trusses of bloom showing. Flowers will be fertilised as they open. Later on, with other houses, tapping the Bamboo-canes to which they are tied will generally suffice to distribute the pollen. Shifted Chrysanthemums into 4-inch pots. They are kept quite cool now. Cuttings are being struck for various purposes yet. Planted out Rhubarb which had been forced in rows to get strong again.

March 4th.—Sowed more Cucumbers for planting under glass. The main varieties are Rochford's Market, Lockie's Perfection, and Daniels' Defiance. Sowed main crops of Onions and Parsnips, and a few rows of Turnip-rooted Beet and Early Horn Carrot. Late Peaches are in bloom under glass. Bees from the apiary near generally enter the house when the lights are open on fine days and fertilise the blossoms. Weeded and top-dressed rock garden. Old potting soil comes in useful for this purpose.

March 5th.—Manure will be used for top-dressing Gooseberries and Currants. They always bear freely, and we find this top-dressing is a great help. The rows of Raspberries will be treated in the same way. Onions and Leeks that were raised in heat are now in cool-house to harden and strengthen, and will be pricked out in prepared bed middle of March. Replanted a lot of hardy edging plants to large flower-beds. There are plenty of spring flowers coming now. Masses of Honesty give us a shade of colour that contrasts well with the bulbs.

THE PLANTAIN LILIES.

FUNKIAS are amongst the most useful of our hardy foliage plants, increasing in beauty from year to year when planted in good soil. The subject of the accompanying illustration

A variegated Plantain Lily (Funkia ovata marginata). From a photograph by Mr. Metcalf, Mill House, Halifax.

(F. ovata marginata) is the handsomest of the variegated forms, being effective, as is here shown, when grown as a single clump, and being often utilised with good results as an edging for beds of sub-tropical plants. Funkia Sieboldi is, perhaps, the most popular of the family, its great, glaucous leaves acting as an admirable foil for taller-growing forms of vegetation. F. grandiflora is another kind of merit, and possesses, as its name implies, larger flowers than the other members of the family. The chief beauty of the Funkias, however, lies in their foliage rather than in their blossoms. There is some confusion in the nomenclature of this genus, many of the varieties being known under different synonyms. The following include all the best-known forms: F. Fortunei, F. grandiflora, F. lancifolia, or undulata, of which there is a variegated variety, F. ovata, F. ovata marginata, F. Sieboldi, and F. subcordata. The subject of the engraving, and F. lancifolia variegata and F. grandiflora, are often used as pot-plants, and are, in that state, valuable for the decoration of conservatories. S. W. F.

THE KITCHEN GARDEN.

EARLY TOMATOES.

EVERYWHERE the aim now is to obtain ripe fruit of this, as of other subjects, as early as possible. The earliest fruit almost invariably realises the best price when grown for market, and even where the object is home consumption only, the first dish is sure to be eagerly welcomed. Plants from seed sown in January cannot, however well grown, be expected to afford the first ripe fruits before the middle or end of May, and if it is not got in until February, or from any cause the plants are not kept growing on steadily from first to last—this frequently occurs through lack of the means of maintaining a sufficient degree of heat, or rather warmth—June will be well in before the first fruits begin to take on the welcome colour. These January-sown plants usually do well; better, perhaps, on the whole, than those started in any other month—that is, of course, provided that they are kept moving, and not allowed to become starved, or neglected in any way. But if there is not enough heat at command to ensure a free and vigorous germination, and keep the plants growing on healthily throughout, it is better to wait until February, or even March, before sowing, and put up with the crop being a little late. As the spring advances, however, the plants grow faster, and with less care and artificial warmth, so that the loss of a week or two in the early part of the year does not necessarily imply a corresponding delay in the ripening of the crop. A temperature of about 60 degs. is necessary to ensure free and fairly rapid germination; but once the seedlings are well up and on the way, if the thermometer seldom falls below about 50 degs., and never below 45 degs., they will do quite as well as in a higher temperature, if not better, the growth being more sturdy and short-jointed.

But in order to obtain fruit earlier than the above, the seed must be sown in the early autumn, the young plants being wintered in a moderately cool house, and planted out or potted into the fruiting sizes soon after the turn of the days. The best time for sowing this batch is about the middle of September, or, in cold or late districts, a week or two earlier. Get them pricked off, or, better still, transferred singly to small (2½-inch) pots—as regards the stronger seedlings, at any rate—as soon as possible, and well established or rooted out by the end of October. To assist in this they should be placed in a moderate warmth of 60 degs. to 65 degs. for a time, after being potted, afterwards transferring them to a high shelf or stage, near the glass, in a light and well-ventilated greenhouse where an average range of 45 degs. to 50 degs. is maintained. Here they will make a very robust and stocky growth, and may be transferred to large pots, or planted out in a ridge of suitable soil, as early in the new year as may be convenient, turning on a little extra warmth, at any rate for a time, to encourage the plants to make fresh roots and start into growth again quickly. For the earliest crops I prefer to fruit the plants in moderate-sized pots, those 9 inches or 10 inches in diameter being very suitable. Plants in pots do not usually afford such heavy crops as those planted out, but they frequently do better early in the season, and if allowed to root out through the bottom of the pots into a bed of good light soil they will remain in bearing for some considerable time, especially if a judicious system of feeding is adopted.

It is not, as a rule, advisable to sow the seed much earlier than the date specified above, as the plants then get too forward, and not setting much fruit to speak of before about the end of February, may lose the first truss or two. Those intended for winter fruiting must, of course, be started considerably earlier—in May or June—as the fruit never sets at all well or freely after the end of October. On the other hand, if sown much later the plants do not get sufficiently strong or established by the time the winter sets in, and in severe weather are apt to suffer severely.

The soil used should consist principally of good, fresh fibrous loam, avoiding, as far as possible, any that has grown Tomatoes or

Potatoes previously. With this may be mixed a third part of good leaf-mould or old hot-bed manure, with a sprinkling of soot and bone-meal. For drainage there is nothing equal to broken oyster or cockle-shells, and a proportion of the same, crushed quite fine, may be advantageously added to the compost. B. C. R.

GOOD RUNNER BEANS.

Amateurs in common with other growers are interested in the culture of the Runner Bean, and the variety illustrated may be classed as one of the best. It is not so large as some kinds, but mere size is not required; but it is an excellent variety, crops well, and, as shown in the illustration, the pods are produced in clusters. Of newer kinds the Scarlet Champion is a little larger than Ne Plus Ultra, and doubtless a selection from it. This is an excellent variety for amateurs who have space at command. Of new Runner Beans, Sutton's Prizewinner is a splendid variety. It is one of the very best yet raised, and the Beans are produced in clusters of from nine to twelve. The Mammoth Scarlet is a good variety too. It is as long as Prizewinner, and, with good culture, can be grown 15 inches in length. There are some good white flowered varieties which are earlier in some soils than the old Scarlet—the pods, too, are less stringy. There are several varieties, such as Giant White, a very long pod, broad and thick, a very heavy cropping variety. Mammoth White is also a good kind. A note on good Runner Beans would be incomplete without reference to the Climbing French Beans. These are, in my opinion, of greater value than the Runner. Of course, to be correct, they are Runners, but so different to the old type that there can be no comparison. The pods are more shapely, and a freer crop is produced, but these kinds need much moisture, rich soil, and the pods should be gathered daily, as they get old more quickly than the Scarlet Runner. In small gardens the climbing French Beans are most valuable, and to the amateur of much importance. Less staking is needed, as ordinary Pea-sticks, 5 feet or even less, will suffice. The plants may be given less space between the rows, and even then produce as heavy a crop as runners 5 feet to 6 feet higher. The climbing French Bean produces pods down to the soil, and is much earlier than the old Runner. There are now several kinds; Tender and True was one of the earliest, and is still welcome. This variety combines the good qualities of the two types—the Dwarf French and Scarlet Runner. The pods are equal to the best French Beans as regards shape. These plants need smaller stakes and to be placed closer together than the Runners. Excelsior is a splendid new Bean of this type, and a great improvement on the old Runner. It is a more vigorous grower than Tender and True, and grown for the table and market it weighs and sells well, and should be grown in all gardens where good vegetables are needed. Another variety, Epicure, is quite a distinct climbing Bean; the pods are so shapely, and produced in great clusters from top to bottom of the plants. It has no equal as regards quality, and remains fresh when fully grown, longer than the others, bears early, and though not large, is deliciously tender and succulent when cooked. Those who study quality in vegetables should grow Epicure. Another good point is that these Beans are free from disease when watered during a hot summer. They are fit to gather weeks in advance of the Runner.

Culture is simple. Ordinary garden soil in many cases, where it has been worked several years, gives good results. But I have seen many failures in new gardens where the ground has not been prepared. Beans like a well-drained land, not too porous and not on gravel. A good holding loam is needed, but at the start a little light soil is advantageous, as it assists rapid germination, the seeds needing warmth to send out roots. Runners are usually sown early in May, as one cannot be sure of the weather previous to that date. There is no need to defer sowing the dwarfer climbing section so late, as I find the seeds are less subject to damping than the larger varieties. Sown in April there will be splendid crops for the table early in July or even June, if the plants can be given shelter for a time as soon as they push through the soil; anything in the way of protection at night will suffice. For Runner Beans sow in trenches, placing a liberal quantity of well-decayed manure in the bottom, and then a covering of light soil. The trenches protect from early frosts, and in dry summers liberal supplies of moisture are necessary. Grown in the usual way, 12 feet between the rows is none too much for Runners that reach that height, and for the climbing French Beans 6 feet may be given. In the case of Runner Beans grown in the open, it is not always at the grower's command to get stakes for Beans, and the market gardener's plan may be adopted—namely, to sow 3 feet apart in rows and pinch the points out when the plants are 18 inches high. Some may say, why not grow dwarf varieties? but the Runner yields more, and Dwarf Beans soon get tough if not gathered young. W.

Scarlet Runner Bean Ne Plus Ultra. From a photograph by Mr. Parren, Northgate-street, Canterbury.

POTATOES FOR EXHIBITION.

There are two popular errors existing in certain directions with respect to what are termed exhibition Potatoes. The first is the assumption that the varieties most commonly exhibited or grown for that purpose are not such as are generally grown for consumption; that they constitute, in fact, a diverse section beautiful to look upon, but useless as food. Such an assumption is an absurd one. It is derived from the undoubted fact that sometimes varieties of such inferior quality as International (White Kidney) and Mr. Bresee (Red Kidney), are shown; but these are mere accidents, and they are now much less seldom seen than formerly. Then there is the second assumption that only very special high-class culture can produce exhibition tubers. That, too, is an error. Just the culture given to produce handsome show samples is the description of culture that should be applied to the production of ordinary crops for eating. It is less that the culture to produce show tubers is high, but rather that too much of the culture seen in relation to ordinary eating stocks is too low. Now, several important factors are needed to enable handsome tubers to be produced from any variety or stock. First, soil must be naturally of fairly good quality, deeply worked, and thoroughly pulverised. Second, the dressings must not be of coarse, raw manure, but rather of leaf-soil, well-decayed road trimmings, wood-ashes, bone-meal, Kainit, soot, and similar materials, applied when the planting is done, and a little nitrate of soda or sulphate of ammonia after growth has commenced. Then the seed tubers should always be carefully selected when the crop is lifted in the autumn. For handsomeness, evenness, smoothness, and thorough maturity, these should be wintered in shallow boxes in a cool, light, airy place, where they harden, yet kept from frost. So exposed in the course of nature shoots will break from the crowns, and these shoots should be carefully preserved.

It is good practice to scoop out neatly with the point of a small knife all other eyes but the strong bud-producing one, and thus in growth later, limit the plant to one stout stem only. Sets are best whole, and should in size be from about 2 ounces to 3 ounces, and these sets, it has invariably been proved, give the best average results. Planting is again a matter of importance. This should never be done too early. Having regard to the fact that the sprouts made on the sets before planting represent a fortnight's start, it is evident that, for all ordinary purposes, the end of April is soon enough to secure the tops from harm by late, white frosts. Distance apart has to be regulated somewhat by height of top, but, as a rule, Potatoes are planted too closely. To enable good sets to be produced the plants must have ample space, so that the leafage can obtain plenty of light and air to enable it to form starch granules, and create sound, handsome tubers. For all moderate growers the rows should be 2½ feet apart and the sets 14 inches apart in the rows. For strong growers the widths should be 3 feet and 16 inches respectively. The result will show that whilst in wider planting there is a saving of seed, the crop is even finer than results from closer planting. The object of the grower is to secure not only fine handsome tubers but a crop of great evenness, and a crop of that description only ample room will give. Where soil has been previously employed to carry a crop of Peas, Cauliflowers, Onions, Spinach, or Celery, and has for that purpose been well manured, is of the best description. It is of little use, as some writers will insist, that it shall be of certain quality. Everyone has to make the best of the soil they find in their gardens. However, dealing with such ground as may be thought best for the purpose, it is well to have it trenched so far as throwing out the top spit, breaking up the bottom soil deeply and well, then covering that with the top spit from the next trench, and so on all over the area to be prepared. A good dressing of soot buried at the same time may help to destroy the grubs and other troublesome insects. The soil may lay exposed to the air until planting time, then, a trench being opened at one end, planting may proceed. For this purpose throw out a trench a spit wide and 10 inches deep. Dig two spits forward so as to be fully 18 inches from the end, then strain a line across the ground, marking the place of the first row with a spade; chop down 6 inches deep a clean furrow, strew along it the manure dressing, which may be wood-ashes, one half; the rest soot, bone-meal, Kainit, all well mixed; and, if you can, add to it the same entire quantity of fine soil, leaf-mould, or other similar material. Dress that mixture liberally along the furrow, then plant your seed tubers. Fork the soil over them lightly, and proceed to dig further, 2½ feet to 3 feet as may

be needed. Make another furrow, dress it, and plant it as before.

Sometimes, instead of digging, as the planting is done, furrows are thrown out with a spade at the desired distances, dressed, planted, and filled in, leaving the intermediate forking to be done later. Others are content to merely dibble in the sets, but the practice is not nearly so good as is that first described. No doubt with many persons it is at planting time a question of trouble and labour, but success in any gardening matter cannot be hoped for without taking trouble. When the Potato tops are well through the ground, the first duty is to give it a good deep flat hoeing, but taking great care not to harm the plant stems. Earthing should have more trouble bestowed upon it than is usually given. A well-worn flat-tined fork or a short spade is best, putting the earth to the plants on each side, taking care that leaves are not buried, as commonly happens when the moulding is done carelessly with a hoe. Let this earthing up be done twice, the last one being of a very complete character, the soil going well round the stems.

Where there is leafage that cannot be otherwise than buried, it is best to gather it off as the work proceeds. Moulding up should invariably be done in dry weather, and the mould should work backwards to obliterate all footmarks. It is very difficult to do more to the breadths for some time, except to pull or keep down weeds that may spring up. It need hardly be said that a couple of sprayings with Bordeaux-mixture will not only do much to prevent the disease spore from affecting the crop, but also will save the leafage for some three weeks longer than otherwise would have been the case, and that in securing size and starch is of great importance. With a proper spraying knapsack the cost of dressings, one the third week in July, the other a couple of weeks later, is trifling, whilst the benefits resulting are great. The lifting of the tuber crop deserves more pains than is usually given. Digging should be done with a long fork that goes well under the roots and lifts them clean out without breaking the skins. The best tubers should be at once picked up and laid carefully into a basket in which there is a layer of hay, and kept covered outdoors. When full the basket should be carried into a shed and the tubers neatly papered, be laid into boxes, and covered up close to exclude air and light. They will keep so put away for several weeks, and may be taken out carefully, washed, wiped dry, then re papered, and taken to the show as needed. From the moment of lifting the tubers must be kept from light and air as much as possible, and the skin must be as carefully kept from rubbing or breaking. Each variety should be also legibly labelled. Much more might be written on this subject, but this is enough for present purposes. If more information is needed it can be asked for.

Varieties that have good reputations for form and appearance are :

White Kidneys.—Snowdrop, Early Puritan, Reliance, White Beauty, Duke of York, The Bruce, Chancellor, Reading Giant, Up to Date, Record, The Canon, Future Fame.

White Rounds.—Snowball, London Hero, Triumph, Windsor Castle, Goldfinder, Jeannie Deans, Satisfaction, Renown, Schoolmaster, Abundance, Prime Minister, Syon House Prolific.

Coloured Rounds.—Reading Russett, Conference, The Dean, Lord Tennyson, Ruby Queen, King of Russets. *Kidneys:* Prizetaker, Reading Ruby, Edgcote Purple, Mottled Beauty, Beauty of Hebron, Early Rose.

A. Dean.

A mild winter in Limerick.—Such a mild season has never been before experienced. All the spring bulbs are up and the Roses have strong shoots. I have Maréchal Niel, Niphetos, and Gloire de Dijon in blossom on a south wall. I enclose photographs of rustic trellis over doorway, showing position of Roses. The trellis is covered with Passion-flower—now quite green, and some flowers open. Clematis Jackmani and the following flowers have been in bloom some time: Primroses, Snowdrops, Crocus, Anemones, Wallflowers, single and double, Violets, Daffodils, and Bluebells, and Tulips are beginning to show flower.—J. G. B.

THE PEACH-LEAVED BELLFLOWER (CAMPANULA PYRAMIDALIS).

This old-fashioned plant, which I have grown and bloomed with more or less success for the past thirty years, is very easy of culture, as it does not require artificial heat. Sow the seed in the spring in a pan or cool frame As soon as the seedlings can be handled, prick them out 6 inches apart in a semi-sheltered spot, encourage their growth through the summer and autumn. Leave them to themselves till the following spring, then select the most promising stools, say in April. Care must be taken not to break the roots. Pot into good clean 10-inch pots with loam, putting good rotten manure on the top of the drainage. Plunge the pots up to their rims in ashes, and keep the plants attended to with water. When the flowering stems appear have them properly soaked, and when buds show colour give weak manure-water twice a week. When the colour (white or lavender) shows at the tips of the buds take the pot or pots into the dwelling-house, where in ten days the plants will be a mass of bloom. Pure water, of course, must be given at proper intervals. Many people grow it in borders. It is perfectly hardy.

The plant here figured was grown out-of-doors until the colour was just visible at the point of the buds, when it was removed into the hall, where it continued to flower for ten weeks. The colour of the flowers was pale lavender. W.

The Chimney Campanula (C. pyramidalis).

Campanula grandis.—This, like the finer Bellflowers, is to be had in blue and pure white forms, and although its season of blooming is comparatively short, we ought to find a place for a fine group, as it is so striking whilst lasting in flower. No plant is more easily increased with a view to making large groups, as a small piece will in the course of about two years spread over a yard of ground. On richer soils especially it should be frequently divided, and when replanting is being done, if all the strongest shoots are selected and planted at short distances, a group will be obtained that the following summer will be a mass of flowers. If dividing is neglected and strong and weak shoots suffered to grow together, there will not be many spikes upon a group of a yard or so in diameter. By practising what is here advised it is possible to have two dozen bold spikes upon a group of the above extent, and after they have flowered enough strong shoots to plant a fresh group for another year.

FERNS.

FOUR ADIANTUMS FOR SMALL HANGING BASKETS.

However pretty and distinct the numerous Ferns generally used for hanging-baskets may be, few are so suitable for growing in small baskets as A. caudatum with its variety Edgeworthi, and A. lunulatum with its variety dolabriforme. When compared with other Adiantums, these appear to be quite different, as their fronds are simply pinnate, whereas one of the general and most admired characters of Maiden-hairs is the multiple division of their delicate foliage. They also differ from most Adiantums, inasmuch as they are viviparous and their fronds terminate in a long tail-like process, at the end of which there is a bud producing in mid-air another plant. This singular character greatly adds to the attractions of these very interesting basket Ferns, as it is not at all unusual to see from the same specimens three generations of plants hanging down 2 feet or more.

Adiantum caudatum is readily identified through the peculiar pale, dull green or greyish colour of its numerous leaflets, which, like the stalks, are covered with short pale brown hairs, more abundant as they approach the crown whence the fronds start. It is a plant of very wide range, being found wild nearly everywhere through the tropics, in China, Ceylon, Java, Madras, Cape Colony, Mauritius, on the banks of the Niger, and even on the Himalayas, where it has been collected up to 3,000 feet elevation. The variety

A. c. Edgeworthi, or, as it is also sometimes called, A. ciliatum, differs from the species principally in the smooth nature of both surfaces of its leaflets, which are also more rounded and more deeply and more conspicuously dented. Its fronds, shorter and of a more slender nature, are also produced in greater abundance, and the colour of the leaflets being of a bright, soft bluish-green is quite different and much more pleasing. This remarkably pretty Fern is also a native of China and the Himalayas.

A. lunulatum is the strongest grower of this group and an easily recognised species, for its fronds, borne on very flexible stalks, are furnished on both sides of the rachis with numerous leaflets of a bright green colour and peculiar shape, being almost fully developed on one side and scarcely at all on the other, their lower edge being nearly in a line with the short stalks on which they are borne, while their upper edge is rounded and, like the sides, usually more or less lobed. When the fronds of this species are mature, the stalks are of a beautiful shining black colour, while those in course of development are of a deep pink, turning to a light brown tint quite different from that of those of all other species. It is found wild in Hong-Kong, Cochin China, on the Himalayas up to 4,000 feet elevation, in tropical Australia, Madagascar, Brazil, etc., and is of a deciduous nature, losing its fronds about December, and starting into growth again about the beginning of March. This accounts for its disappearance in many cases, as care must be taken during the winter that it does not become thoroughly dry, or it will never start into growth again. It is best to keep it moderately moist at the roots all the year round, and although under such treatment it does not get so much rest as an ordinary deciduous plant, it has the advantage of starting more strongly into growth in the spring.

A. l dolabriforme is an East Indian variety differing from the species principally in its

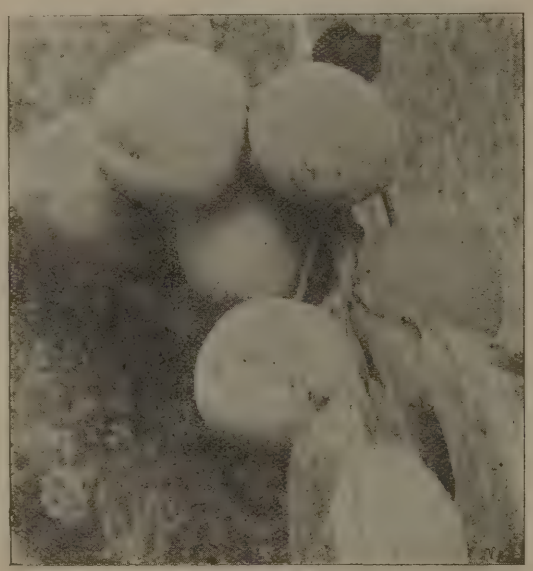
evergreen character, remaining as it does in full foliage all the year round. Its fronds, which, like those of the species, are repeatedly proliferous, are of a much more slender nature and produced in greater quantities, and their leaflets, more axe-shaped and more abundant, are of a pale grass-green colour.

As may be seen from the above descriptions, these four Adiantums are much better adapted for baskets than for pot-culture, and the soil in which they thrive best is a compost of a light nature, consisting of two parts of either peat or leaf-mould, one part chopped Moss, one part loam, and one part sand, in which their slender roots may run freely. They require an abundance of water at the roots, and although they are particularly fond of light, they require shading from the strong rays of the sun. G.

FRUIT.

GAGE PLUMS.

The popularity of the Gage Plums, the common green form of which is here illustrated, is undoubted, and the rich flavour possessed by most of the varieties entitles them to this popularity, though, as a class, they are less hardy and more fastidious as to soil than are most other Plums. In addition to its use as a dessert fruit the common Green Gage is in great request for kitchen use, also for jam making and for bottling; indeed, it would not pay to grow it largely in most districts for dessert use, as it is impossible to let the fruit hang long enough to become fit for this purpose, unless protected from wasps and birds. To the private gardener it is a little annoying to see the market filled with Gages plucked long before they are ripe, but growers for sale know their business, and find that it is only by selling them in this state that they can make the crop pay. The ripening fruit splits badly in showery weather, so taking all things into consideration the production of a full crop of Gages in perfect condition for dessert requires a good deal of care. It is popularly supposed that the honour of introducing the Green Gage into this country belongs to Sir Thomas Gage, from whom it derives its English name, and who first grew it in the gardens at Hengrave, not far from where I write, but it is almost certain that this is an error, and that it had been introduced previously under its Italian name of Verdoch. Be this as it may it is certain that its cultivation at and distribution from Hengrave helped to make it popular.



Plum Green Gage.

The Gages cannot be well grown on very heavy soil, but are best suited with a medium loam, and they also do well where the soil is light and sunny, provided it is of good depth. Their greatest enemies are the bullfinches, which clear off the buds wholesale if not checked; the instinct of these birds appears always to draw them to the buds of the best-flavoured fruits, so that all the sweet dessert Plums suffer more or less, but the Gages are the first victims. Spring frosts, too, do much damage, so in choosing a site for the growth of the trees low ground near water or positions near woods or thick hedges should be avoided. Trees may be readily raised from suckers, which grow quickly, and they may also be raised true from the kernel, so that there is no need to graft or bud in order to raise stock. Some of the best trees here have come up where they stand from suckers, and these are so thrifty that the older trees have been cut away to give them room. For garden purposes a selection of good varieties should be made, and if these can be given good positions on east or west walls a succession of fruit may be kept up from July to October, but I think it is a mistake to attempt to grow the very late varieties on north walls, unless in an open position in the southern counties. Reine Claude de Bavay, for instance, is a grand Plum as grown here on south and west walls, but utterly unfit for dessert from a north wall, as the fruits lose all their richness. The following selection includes the best of the well-known varieties, and would cover the entire season. I would have included the Purple Gage, which is so delicious, and which, if it can be kept dry, shrivels into a rich sweetmeat, but I find that it splits so badly under the slightest fall of rain that it is next to impossible to have it good except under cover.

Old Green Gage needs no description here.

July Green Gage.—Valuable as ripening a fortnight in advance of the above.

McLaughlin's Gage.—A large yellow Plum, speckled red and carrying a slight bloom.

Guthrie's Late Gage.—Large green, ripening late in September. Fruit very rich, the tree hardy and free.

Bryanston Green Gage.—A larger and later form of the old variety, taking the same place for lateness that the July Green Gage does for earliness. Of extra good constitution, and should be grown on a wall.

Oullin's Golden Gage.—Strong grower, very free. The fruit is more inclined to oval than is common with Gages; of a deep golden colour and ripening in August.

Transparent Early.—A very fine addition to the class, rich, early, and good.

Transparent Late.—This is valuable as ripening better than most late kinds on trees in the open.

Reine Claude de Bavay.—The latest and one of the richest. It is a true Gage with large fruits and must be grown on a wall. J.

Culture of Peaches in pots (*Pot Peach*).—We have often given advice about the treatment of pot-trees in these pages, but in reply to your question gladly furnish a few details. In the first place, you do not tell us what size the trees or pots are. This is important. If of a fruiting size, young trees at the start would be in from 9-inch to 12-inch pots, and you have done well by placing them in a cool-house. The temperature at the start by fire-heat during the day should not exceed 55 degs., and 5 degs. to 10 degs. lower at night. The trees will need syringing twice overhead daily until the flowers expand, but not during the flowering period. When the flowers are set give a little air during bright sunshine, but close early in the day soon after 2 p.m., and then damp over the trees if not in bloom. Give water when necessary, but little will be required until the trees have set their fruits. There is little demand on the trees until the leaves have formed. After flowering, disbudding must be attended to. This consists in the removal of surplus buds, as if all were left the trees would be so crowded that few fruits would mature. When disbudding leave two well-placed shoots or buds at the base of the shoots, another half way up, and one at the top. If there is fruit at any bud or shoot leave that shoot, or in a week or two pinch back to, say, within 3 inches of the fruit. With pot-trees disbudding is carried on a little at a time, as there is less strain upon the trees, and one can see better, by allowing more time, what shoots should be removed. There is more pinching or stopping of shoots with pot-trees. To sum up briefly, you must remove a portion of shoots where thickly placed, and pinch others to form spurs, which are left a little later than those entirely removed, before they are long enough to pinch back. Removal of buds or shoots will be necessary directly the fruits have set. Thinning of fruit is also necessary if very thickly set. Remove those too close together, leaving the largest; but as pot-trees often shed new fruits, leave at least twice as many as will be needed, as a final thinning can be made during the stoning period—that is, when fruits are about half grown. Temperature after flowering may be by fire, 10 degs. higher by day and by night also. Syringe trees twice daily. Give food in way of liquid-manure, not strong, but twice a week. Never let the trees get dry at roots, and mere food may be given from May to June. Water freely at roots even twice or thrice a day at that period. Give the trees a top dressing of decayed manures to prevent drying. Remove wood also where too thick or shading the fruit, and to keep trees clear of red-spider by constantly syringing overhead. Maintain a moist atmosphere in the house, fumigating regularly. After fruiting plunge the trees in the open, giving ample moisture both at root and top. During growth allow a liberal temperature by sun-heat, in addition to that given artificially. The trees will need repotting next autumn—say, in October—giving a small shift and removing a portion of old soil and the drainage. Pot very firmly in heavy loam, with a portion of wood-ashes or old mortar rubble, and house in a cold-house when potted or when you wish to force.—W.

GRASS WALKS.

Why should gravel walks be formed where good turf would answer as well, or, according to some people's ideas, even better? Give a number of visitors to a garden the chance of walking either on a gravelled walk or a strip of turf, and the latter will be selected by a great majority of them. So much is this the case, that when the public are admitted to private places every precaution is taken to keep them off the turf. The latter will certainly not bear the strain of much traffic in all weathers, but is fully equal to the strain in very many situations where gravel at present predominates. If the ground is well drained, the turf, being perfectly level with a good bottom, the Grass also being kept closely shorn, there is nothing more enjoyable to walk upon in hot weather, and in not a few instances it is not so damp to the feet during the winter as a smooth gravel path would be, the disagreeable licking up common to the latter also being avoided. Especially are turf-covered walks desirable in the fronts of or between herbaceous and other floral borders, both in the kitchen garden and out of it.

The freedom and variety of the above in gardens have not been taken such advantage of as they deserve. It is not only in the flower garden where we may have much beauty of flower, but away from it. There are many places better fitted for growing the more beautiful things which do not require continual attention and propagation. Unhappily, the common way of planting shrubberies has robbed many such walks of all grace. The great trees, which take good care of themselves, are frequently all we want, and in the older gardens we often find specimens of uncommon or rare trees; but the usual mixed plantations of evergreens so common up to our own day means death to the variety and beauty we may have by Grass walks in sun or shade. The shrubs are frequently, for no good reason, planted in mixtures, in which the most free-growing are so thickly set as finally to cover the whole ground, Cherry Laurel, Portugal Laurel, Privet, and such common things very frequently killing all the rest, and forming dark walls by such walks. Some of these evergreens, being very hungry things, overrun the ground, rob the trees, and frequently, as in the case of the Portugal Laurels, give a dark, monotonous look, while keeping the walks wet, airless, and lifeless. T.

OUTDOOR PLANTS.

IRISES IN THE WILD GARDEN.

The beautiful Flag Irises are amongst the loveliest of our earliest summer flowers, but nowhere are their charms displayed to such effect as in the untrammelled freedom of the wild garden. Here are no stiff lines, no evidence of the foot-rule or of the study of geometrical design, but the informal grouping of flower and foliage that creates, as may from the accompanying illustration be seen, a picture infinitely beautiful, since in its composition Nature has not been bound hand and foot, but has been permitted to exercise, within due limits, her beneficent sway. The sword-shaped leaves of the Irises curve boldly out, their tall flower-heads, with heavy-drooping falls, standing boldly against the crimson blossoms of the great leafy Pæony. In the background, beneath a tree, stands another colony of Irises, a breadth of white, whilst fine form is present in the cordate leaves of the Funkia, and in the thin, rush-like leafage of the bulbous Irises, that are thrown into sharp relief by the distant

An Iris border. From a photograph by Miss Willmott, Warley.

greenery. Irises always appear to best advantage when planted in fair-sized clumps and groups, as they then show when in flower a broad colour effect. The Flag section appears to succeed in most diverse soils and situations, flowering in deep soils, beneath deciduous trees, and on shallow, hard-baked railway embankments with equal freedom. A wide selection of beautiful tints may be made from the Flag Irises, flowers that, whilst individually as lovely as those natives of the tropics that can only be looked upon in this country in the steamy confines of the hot-house, possess the additional charm of being associated with other and natural beauties—the fresh green of the Grass, the full-foliaged trees in the zenith of their loveliness, the shifting lights and shades of the ever-changing skies, and the sense of atmosphere that softens the blue distances and limns with a tenderer hue the colours of the flowers of the open air. S. W. F.

Lilium auratum for exhibition.—I intend to grow some bulbs of Lilium auratum in a cool greehouse for exhibition in the middle of August next. Will you give me some idea when to plant them? The scarlet Tropæolum that grows in greenhouses, and which flowers so freely, is it grown from seed or tubers, and when is the best time to start them?—L. M.

*** The bulbs of Lilium auratum should be planted at once. They should be carefully looked over, and if any signs of decay are observable, affected parts should be cut out with a sharp knife. If the bulbs are large, as they presumably are, since "L. M." intends exhibiting them when in flower, 6-inch pots will be a suitable size. A square of perforated zinc placed over the hole will be found useful in preventing the ingress of worms to the pot. These, when once established within the pot, often choke the drainage, and thereby throw the plants into an indifferent state of health, and are difficult to get rid of. Above the zinc a good-sized crock should be inserted, and the drainage completed with half-inch bones and pieces of charcoal, while over this Moss, sprinkled with soot, should be spread. A good compost is one which consists of two parts peat and one part fibrous loam, with which a liberal allowance of silver-sand should be incorporated. The pot should, at first, be not more than half filled with soil, this being covered with a layer of silver-sand, and the bulb pressed down gently into the compost; then more silver-sand should be poured over the bulb, so as to fill up the interstices of the scales, and sufficient compost added to barely cover the top of the bulb. The surface of the soil should now be about 2 inches below the rim of the pots, and, for the time, this space should be left unfilled. The soil at the time of potting should be fairly moist. When the bulbs are potted they should, preferably, be placed in a cold-frame and covered with Cocoa-nut-fibre to a depth of 6 inches. An occasional inspection should be made by carefully moving aside the fibre, and, as soon as signs of growth appear, the covering material may be removed, the pots being left in the frame, and the plants attended to in the matter of ventilation and watering, although little of the latter should be needed until they are in strong growth, when they may be removed from the frame and placed in a sheltered position in the open. As soon as the plants evince a disposition to throw out stem-roots, which will appear just above the surface of the soil, the vacant space left at the top of the pots should be filled up with a rich top-dressing, thoroughly decomposed hot-bed manure and fibrous-loam in equal portions forming a good mixture. In this the roots will run freely, and add greatly to the vigour of the plants. A partially-shaded position is the best for the Lilies at this stage, as they suffer from a scorching sun or drying wind. Syringing should be attended to on dry evenings, and care taken that they are never allowed to become dry at the roots, although the soil must on no account get into a saturated condition. Waterings of weak liquid-manure are also beneficial, and an occasional application of soot-water tends to impart a deep green tint to the leaves. Before the first blooms expand the plants should be brought into the greenhouse, the portion in which they stand being slightly shaded. They should be in perfection by the middle or end of August, but they can easily be hastened or retarded to suit the cultivator's wish by bringing them under glass earlier or standing in an airy shed. By following the above instructions, which have been found to produce excellent results, "L. M." should have some fine plants for exhibition. The Scarlet Tropæolum referred to is, probably, one of the varieties of T. Lobbianum, and should be propagated by cuttings taken in the autumn, or possibly "L. M." may be referring to T. trisolorum, which grows from a tuber. The vagueness of the query renders it impossible to identify the plant with any certainty.

Diseased Violets (*H. F.*).—The Violets are attacked by a disease which is, unfortunately, not uncommon with frame plants. These may appear quite healthy when first planted in the frame, but shortly exhibit signs of damping, even under the most careful culture, and finally lose their leaves and die. There appears to be no method of checking the disease when it has once infected the plants, and as it spreads rapidly it is rare for any plant to escape the contamination. Picking off the diseased leaves, sprinkling with charcoal-dust or wood-ashes, careful ventilation, and, in cases where the pits are fitted with hot-water pipes, giving a little artificial heat to keep the atmosphere buoyant, all seem equally ineffectual. If any growth remains when the plants are divided and replanted in the spring, it is well to dip this in a solution of Gishurst compound or some other insecticide before planting. Every particle that is not retained for planting should be burnt, and the bed where the plants are to grow through the summer should be far removed from the quarters occupied by Violets in the

preceding year. The whole of the frames should be entirely cleared of the soil in which the Violets were planted, so that no chance of infection may remain in this quarter. The best course to pursue, under the circumstances, would be to burn all the old plants after they have become useless, and start with an entirely new strain procured elsewhere.

ROSES.

THE WHITE MACARTNEY ROSE.

This charming single Rose, botanically known as Rosa bracteata, was introduced from China about 100 years ago by Lord Macartney. Unfortunately, it is not hardy, and on that account one could not recommend it for a cold district. However, where a nice well-sheltered south-east wall is available a plant of this Rose should find a place. It would be sure to please all who admire these beautiful Roses. It is practically an evergreen plant, and the glossy sheen of its tiny Berberis-like foliage greatly enhances the purity of the Apricot-scented flowers. There is probably no Rose with such a wealth of golden-yellow stamens as this variety, and yet it is a very shy seeder. It blossoms most profusely both in summer and autumn, and considering that it is an evergreen and so free, it would even deserve to occupy a pillar in the conservatory. A variety of the same species—viz., Marie Leonida—is equally worthy of a place, and would make a good companion to the single white form. Its flowers are rather large, double, and of a creamy-blush hue. All through the summer months it is a mass of blossom, and continues to unfold them almost to Christmas Day.

Rosa.

Flowers of the white Macartney Rose. From a photograph by Miss Mary Cotton, Ballynadyne, Lismore, Ireland.

ROSES UNDER GLASS.

There are not many subjects under glass needing more care and attention at this season than Roses. It is the same whether they are in pots or planted into borders of soil. We should be busy, too, in heated and unheated structures. Recently we have been mulching our Roses in an unheated house, with fresh turf from an old pasture. It is not often one is so fortunate as to be able to procure this in quantity; so, to make the most of the opportunity, we removed as much as possible of the old soil, even to laying many of the Rose roots bare, and filled in with the fresh turf and a little well-decayed manure. No amount of mulching with manures or feeding with liquids could do so much real good as will this fresh turf. We would have preferred to do this a few weeks earlier, but even now any reader who has the opportunity may be sure of good results by mulching late Roses in this way.

Climbing and other Roses in borders should be well watered with weak liquid-manure now. A mere surface watering is not sufficient. We must remember that no winter rains can reach these borders, and they are often much drier than might be supposed a little below the surface.

All pot-Roses in growth that were not shifted on this season will benefit from frequent applications of weak liquid-manures. But do not give these to plants recently repotted. Liquid and other stimulants should not be given until the roots have thoroughly permeated the soil, and taken out the bulk of the plant food contained, when an additional help is of great benefit.

Although so frequently pointed out, I must once more repeat that we are sure to regret any delay as regards checking and killing insect foes as soon as they are perceived. One cannot commence too early. It is not only safer, easier, and less expensive, but we avoid the need for strong measures, and prevent our plants being harmed

There is also need for very great care in the matter of ventilation, and I fear that the majority of amateurs afford too much air to their Roses. If this could be given without chilly draughts, or such sudden fluctuations of temperature, it would be of undoubted benefit; but as this is so seldom the case I would prefer to keep them shut up closer and endeavour to regulate the temperature with artificial heat. Even if a few hours' sunshine breaks through I would avoid ventilation as far as possible by damping off the fires and throwing a little water about upon the walls and walks of the house. Our earliest batch of Roses are well in bloom, and the second and third batches are coming along rapidly. All pot-Roses should be in heat now where possible. If the house is unheated, keep the plants as backward as you can. We may get a spell of cold weather yet, and even in a cool-house our Roses are apt to be a little too forward for safety during March and early April. There is such a contrast between the present mild weather, added to the protection of a greenhouse, and the 10 degs. or 12 degs. of frost we often experience late in March. By that date our Roses will be in full leaf unless the weather changes, however backward we may try to keep them.

P. U.

Cutting back Roses (*M. B. G.*).—We shall publish next week a complete article upon pruning Roses, which we hope may be of use to you and that will give you full instructions. You do not say if your plants are established, or only planted during the present season. In either case a good dressing of thoroughly decayed manure can do no harm. The three in poor soil might be lifted yet, and the soil replaced by a better compost, especially if they are replanted at once. You have a capital collection of climbers, but it might be improved by adding Bouquet d'Or and Mme. Chauvry.

Standard Roses on round bed (*R. R.*).—Monsieur Boncenne is a fairly good Rose, but rather shy in blooming. We would prefer Prince Camille de Rohan, both as being freer and of a more decided dark colour. For a white you cannot beat Boule de Neige. General Jacqueminot, deep crimson; Marie Van Houtte, yellow; Mrs John Laing, pink; Duke of Edinburgh, scarlet; Duke of Connaught, maroon and scarlet; Dupuy Jamain, light cerise; Heinrich Schultheis, pinkish-rose; Suzanne Marie Rodocanachi, bright rose; Viscountess Folkestone, creamy-white and flesh; and Franciska Krüger, salmon-yellow, make a dozen good varieties and most reliable. You can have four plants around the centre standard, and seven more in the outer ring.

Rose Bardou Job (*Lady Amateur*).—The variety Bardou Job is seen to best advantage when trained to a pillar, for its habit is semi-climbing. It may, however, be grown in bush or half standard form, and, indeed, looks very lovely when afforded plenty of room for its wavy branches to spread or droop. This Rose produces large single flowers of a brilliant crimson-scarlet colour, heavily shaded with velvety-maroon. It should be in every garden.

Celine Forestier Rose against an east wall (*Robinia*).—Céline Forestier has a pale greenish-yellow foliage when young, and we presume there is nothing the matter with your plant. Roses vary very much in foliage, and the description you give of yours is only its natural colour.

HOUSE AND WINDOW GARDENING.

CACTI FOR WINDOW CULTURE.

Many of the Cactuses are of the easiest culture in windows, and few plants give so ample a return for slight trouble. The seedlings which have been raised in recent years are far in advance of the old type, hybridisation having improved them greatly, and those who are interested in window gardening can scarcely do better than to procure a few specimens or a collection of these lovely flowers. Thalia, a deep crimson, shot with pure violet, is magnificent, and Vesta, a large creamy-white variety, should be grown for contrast. Those who admire soft tints will prefer Jessica, a pale lovely pink; Sirius, too, of a fine rose colour, is a glorious blossom; and Olivette is brighter carmine. The darkest of all is Nestor, of a deep purple tint, shot with crimson. These six constitute some of the best Cacti in cultivation, and may be selected now, set with innumerable buds. Their cultivation is simple. Plenty of water (they love to stand in a saucer) during their flowering season and a sunny window is all they need; the supply of water being continued through the summer (when they make their growth), and gradually diminished during October, giving scarcely any water from the beginning of November until the end of February. During this dormant period the plants should be moved away from the window, and they can be kept safely in any place where the temperature does not fall to freezing point, only very occasional watering being desirable, just enough to prevent the fleshy leaves from becoming flaccid and wrinkled. When March arrives they

Cactus in a window.

should be replaced in the window, as near the glass as possible, and supplied with saucers, these being filled every morning with warm, but not too hot, water. At the same time the dust of the winter may be removed with a paint-brush and clean tepid water, and the hard upper soil changed, without disturbing the surface roots, for a little fresh compost. In a short time flower-buds will appear at the edges of the leaves, and with a good supply of water (to which a little clear soot-water may be added) will swell rapidly, until the plant becomes a mass of bloom. Each of these should be removed directly it fades, to avoid exhausting the plant, and the opening buds should be turned to the sunshine, or they sometimes drop off. These Cacti may be propagated very easily by cuttings; a leaf, or even a part of a leaf, cleanly cut from the old plant, can be laid aside to dry for a day or two in the shade, and then inserted firmly in a small pot of sandy soil (without manure), well drained, when it will soon strike root, and can be removed to a little larger pot in October. Do not repot Cactuses often, and use rather light soil.

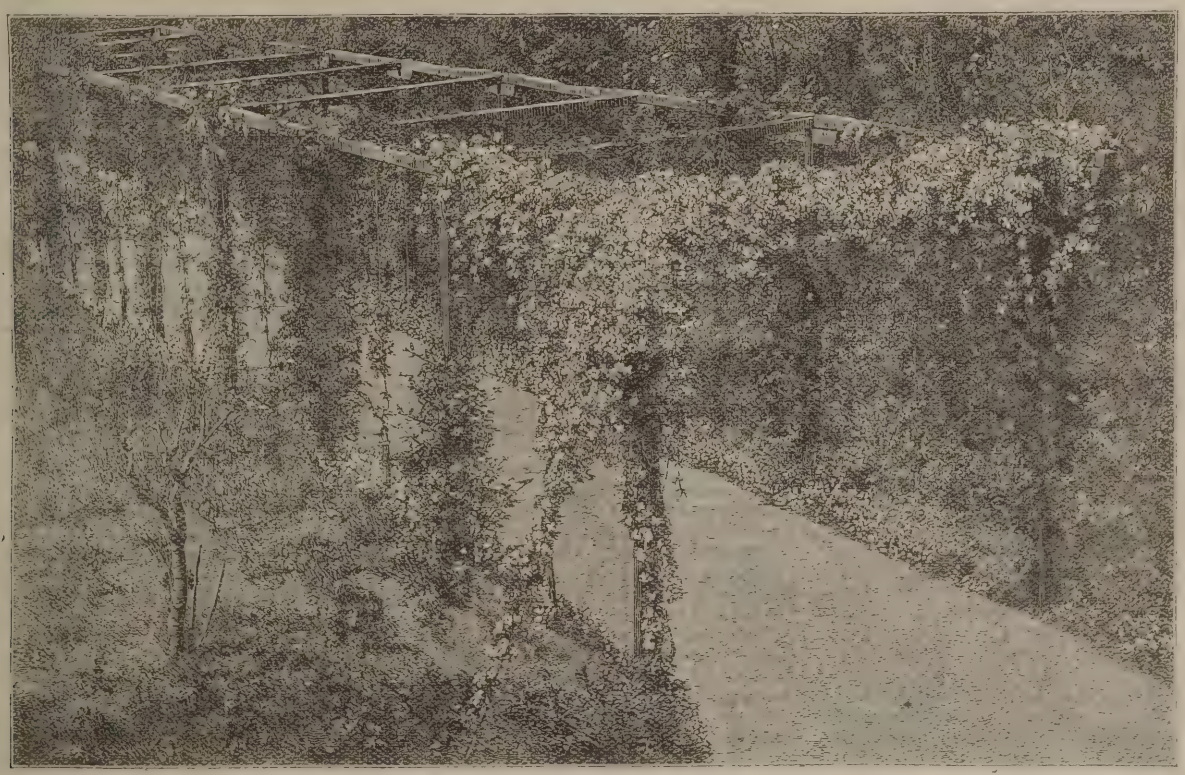
PLANTS FOR ROOMS.

(In reply to "J. C. B.")

The India-rubber-plant (Ficus elastica) is a good plant for your purpose. It is a free grower—even in badly-ventilated rooms—and if planted in a peaty soil and carefully watered during the winter months it will live and flourish for years. The leaves should be sponged occasionally with lukewarm water, so as to clear off all dust and dirt that may have settled on them. The Myrtles, especially the variety named Jenny Reitenbach, are first-rate evergreen shrubs of neat habit of growth and of simple culture. Carex japonica variegata is a very effective Grass, with long, narrow leaves. Cyperus alternifolius is another easily-grown Grass, but requires an abundant supply of water during the whole of its growing period, as it is a very thirsty plant. The best of all evergreen plants for rooms is the Parlour Palm, botanically known as Aspidistra lurida. Easily grown, always fresh and beautiful, it is one of the most difficult of plants to kill. There is a form with the leaves striped with white. It is, perhaps, even more ornamental than the green-leaved kind. Aralia Sieboldi is well known, but Araucaria excelsa is not grown nearly so much as it ought to be. Potted in good loam, mixed with peat and the pots well drained, the plants will remain in a healthy and presentable condition for many years. Yucca filamentosa variegata is a very ornamental subject and well worth cultivating on a larger scale. Although Elæagnus japonicus variegatus is hardy, it makes a fairly good room-plant provided it is never allowed to want for water. Grevillea robusta is distinct and handsome; it is also of simple culture. Dracæna indivisa is a fine narrow-leaved sort, and D. australis is also very good. Eurya japonica latifolia variegata is very enduring. Begonia metallica and Cape Pelargoniums would answer admirably. Kalosanthes jasminea is a free bloomer. Its white flowers are deliciously scented. Amongst Ferns, Asplenium bulbiferum is well known. Pteris serrulata and P. s. cristata also succeed well. Cyrtomium falcatum is easily grown and a capital plant for indoor decoration. Corypha australis is one of the best Palms for your purpose. Latania borbonica and Areca lutescens also deserve a word.

CLEMATISES OVER PERGOLA.

The accompanying illustration shows the beauty of Clematis montana rambling over a pergola. It is when thus displayed we see the true grace and beauty of the flower-laden growths, a mass of white, almost every leaf being hidden. C. montana is too unruly for garden walls, or where choicer and less vigorous creepers are near, as it overruns quickly a large space.



Clematis montana over a pergola.

Asphalte walks a mistake.—The most unpleasant walks are those of asphalte, and it is idle to write of them as a saving in labour in keeping clean, which gravel walks entail. We know a carriage-drive a mile long and 15 feet wide which is kept perfectly free from weeds by the application of a good dressing each year of a good weed killer. Such a drive would require the constant attention of one man to keep clean if this application of a weed killer was not given each summer, but there is no trouble about it. The work is quickly and cleanly accomplished. Asphalte walks are cold in look, and especially during wet weather oppressively dull and dark; and one has to endure an offensive smell and smoke of tar whilst they are in process of formation. One has only to look at the playgrounds and, unfortunately, some of our London parks, such as Finsbury Park, to see how ugly and poor these walks are compared to those made of the fine Croydon or Farnham gravel. Often, too, tar walks perish with the frost and quickly get patchy. Far better walks, where there is much traffic near the house and gravel is objected to, and, of course, Grass is out of the question, are those made of old London flagstones, set out in an informal way.—S.

CHRYSANTHEMUMS.

Chrysanthemums—revising an old list *(Miss M. N. A.)*.—As you wish only to grow some three dozen plants, you had better confine yourself to a few of the more effective colours, and kinds possessing a good bushy habit of growth. Some of your sorts are rather old, and we fear the names of several plants are also wrong. We make the following selection from the list submitted to us: William Tricker, Souvenir de Petite Amie, Mme. Edouard Rey, Colonel W. B. Smith, Gloire du Rocher, Etoile de Lyon (good sort for a late display from terminal buds), Mons. William Holmes, Chas. Davis, W. H. Lincoln, Florence Percy, Mrs. E. S. Trafford, Mrs. Dixon, Sunflower, Mme. de Sevin, Charles Black, Mrs. Libbie Allen, and Viviand Morel. We should be disposed to grow two of each sort, unless you have a special liking for one particular colour or form.

Chrysanthemums — stopping and timing *(Twenty Years' Subscriber)*.—As we have explained to other readers, the object of pinching or stopping a plant in the spring is to ensure, as far as human aid can fix it, the flowering of early sorts late and late sorts early. Many of our best flowers are seen at their best either too early or too late to be of use for exhibition purposes. On this account, therefore, an endeavour is made to bring them into bloom, generally during the first or second week of November—a period when most of the shows take place. Our advice should prove valuable to growers for exhibition, but private growers—that is to say, those who cultivate their plants for making a bright display during the dull winter months—would more often find it advantageous to let their plants break naturally. It

does not matter much when your plants were propagated, the one result of the pinching is to alter altogether the natural flowering time of the plant. By this means a batch of cuttings inserted late and afterwards pinched may be made to flower as early as an earlier propagated lot of plants pinched at the same time as the first-named.

Chrysanthemums—classification of selection (*Brockweir*).—Of your list M. R. Bahuant and J. Fulford belong to the incurved type of bloom, Gold Dust to the hairy-petalled Japanese, and Edith Tabor, Deuil de Jules Ferry, E. Molyneux, Lady Saunders, Tendresse, Mons. Georges Biron, Mlle. M. A. de Gilbert, Graphic, and Swanley Yellow (? Sunflower) belong to the true Japanese type of the flower. As a selection suitable for exhibition we cannot commend them all. Exception must be taken to some of the sorts. However, a selection is given elsewhere.

Chrysanthemums—twelve sorts for exhibition (*Brockweir*) —The following list does not include all the quite newest varieties, but embrace the best and most reliable ones for the purpose under notice: Viviand Morel, Chas. Davis, Mme. Carnot, Mrs. Mease, or G. J. Warren, Eva Knowles, Oceana, Phœbus, Edith Tabor, Miss Elsie Teichmann, Edwin Molyneux, Australie, and Mons. Chenon de Leché. The foregoing grown well would made a very fine lot for an exhibition stand of flowers.

Chrysanthemums for three months display (*E. N. P.*).—If you will refer to our reply to your query in the issue of the 5th February last you will observe that we divided your selection up into three different flowering periods—viz, October, November, and December. We also stated that you should let your plants break naturally, as by so doing you would get blossoms of the kind you desire without pinching, as advised for exhibition blooms. We therefore repeat, let your plants make a natural break, retaining second crown-buds when they appear—at least, so far as regards the October and November selections Niveum, Good Gracious, and R. C. Kingston also should be allowed to make a natural break, and first crown-buds retained. The Queen is a distinctly late sort, and if a natural break be not made by the end of May, pinch out the points of the shoots, by this means inducing the plant to break artificially, and from these shoots retain the first crown-bud.

Chrysanthemums—when to stop, crown-buds, etc (*D. C.*).—We have so often given explanations of the various terms that to do so again would weary our readers. We gave a rough diagram of different forms of buds in GARDENING, January 18, 1896.

ORCHIDS.

Treatment of certain Orchids (*C. Reader*). — The following Orchids, Odontoglossum Bictonense, O. Halli, O. Halli xanthoglossum, and O. cirrhosum, should be grown in what is generally termed the "cool-house," where, during the winter months, the temperature should range from 45 degs. to 50 degs., the lower numbers being for the night temperature and the higher for the day, while a rise of from 5 degs. to 10 degs, with sun-heat, will do no harm, providing there is plenty of fresh air admitted to balance it. In summer the night temperature should be kept as near 50 degs. as possible. During the daytime, if the house be properly shaded and carefully ventilated, the atmosphere may be kept several degrees lower than the external air. After the plants have made one growth and show no sign of flowering it is advisable to keep the compost rather on the dry side, but not so dry as will cause the pseudobulbs to shrivel, until growth recommences Plants, after flowering, should also be treated in like manner. At all times maintain a moderately moist atmosphere. We do not know Odontoglossum Arnoldianum — probably it is meant for O. Andersonianum.

Orchid for identification (*Mathew Alderson*) —The leaf sent was too withered to form any idea as to which species of Orchid it belongs. According to your drawing, the dwarf-growing species with creeping rhizomes appears to be Bulbophyllum, and the "upright Bulbophyllum (?)" is without doubt a Scaphyglottis. The best way to identify the different species and varieties in your collection is to send flowers to us as they open, and we shall be pleased to name them to the best of our ability. The "Langi Cornea" is probably Dendrobium longicornu. The Thunia seed will soon be ripe, and as soon as the pods commence to burst sow the seed upon the surface of the compost of a well-rooted plant of Dendrobium.

INDOOR PLANTS.

MAKING USE OF COLD FRAME.

I HAVE a small span-roofed cold frame, 4 feet 6 inches by 2 feet 6 inches, and should be so grateful if you could give a short account in GARDENING as to how to make the best use of it throughout the year in a small garden less than a quarter of an acre, where there is no greenhouse. Particulars as to position—whether it need be put on a hot-bed, which in a small garden would look ugly. I find seedlings are eaten by slugs, etc. Should seeds be sown in the bottom of the frame or in pots and boxes? I read GARDENING every week and find it very useful.—B. D. H.

*** Your frame is indeed small, but can be made very useful in the following way. As you have no greenhouse pot plants may be left out of our calculations Many annuals can be raised, such as Phlox Drummondi, Asters, Balsams, Zinnias, Stocks, Marigolds, and the like. Your frame would secure you many dozens of seedlings in a far better, more certain, and forward condition than if sown in the open. You could, in fact, have plants ready for pricking out into their flowering quarters; about the same date it would be safe to sow seed outside, and as so many of our annuals only come to perfection a short time before frosts appear once more this is a considerable gain. Sow these early in March, and prick off as soon as they can be handled. Use small square boxes, and stand these upon a few ashes. If the frame is placed in a warm position and simply raised a couple of feet upon a bed of decayed leaves and weeds it will be sufficiently warm. As regards slugs, etc., these must be kept down by moving the boxes occasionally and sprinkling with a little lime; lime will dispel damp and kill the enemies. When the seedling annuals are out you could use the boxes for such small salads as Mustard and Cress; also raise Lettuce-plants with more certainty than in the open. A box or two of Lettuce would be a good thing to sow in February or early March, so as to provide plants for early planting. Late in the autumn it could be filled with Lettuce and Endive to supply later salads. Celery could be sown and got on far better than in the open. Many herbaceous and other perennials could be propagated—Phloxes, Delphiniums, Anemones, etc.; in short, use it for protective purposes during winter, and to secure tender subjects earlier and safer than would be the case in the open. A neatly-made raised bed would not be unsightly.

BORONIAS.

A FEW species in this genus are well worth extended culture, but they have been to a certain extent shelved, owing to the predilection for quickly-grown showy plants; not that some of these are not showy, a few nicely-flowered plants of B. heterophylla making as bright and effective a show as most things. The delicate fragrance of B. megastigma, too, should ensure it a much greater measure of popularity. Their culture is by no means difficult The roots are very sensitive and easily injured by extremes of moisture or drought, and unless carefully examined before watering they will not be satisfactory. Too many young gardeners upon whom falls the task of watering have very loose modes of procedure in this respect; consequently the plants have the name of being difficult to grow. Yet when once the knack of watering hard-wooded plants is attained it is no more difficult than watering a Pelargonium or a Begonia. Enough must be allowed at each watering to soak right through the ball, and a fresh supply must be given before the pot rings by tapping with the fingers. One good drying imperils the strongest and healthiest of plants; to continue the treatment means killing them. Boronias are propagated by cuttings or seeds, usually the former. These should consist of half-ripened shoots. Take the shoots about 2 inches in length. They strike best in pots filled with sandy peat, well drained and made very firm with a layer of fine silver-sand on top. Give a good soaking of water to settle the sand around the base of the cuttings and place them at once under a bell-glass or in a propagating frame. In potting the young plants use very small pots and nothing but sandy peat and charcoal, but at subsequent shifting a little nice fibrous loam may be mixed with this. Small shifts should be given, as the roots are apt to decay if much unoccupied soil surrounds them. What may be termed warm greenhouse treatment suits Boronias best, and they may be gently excited in the spring by a rather closer temperature and well ripened in autumn by exposure to sun and air. If placed out-of-doors during late summer it is an excellent plan to plunge the pots in Cocoa-nut-fibre or ashes, this protecting the roots from the sun, while its action upon the foliage is beneficial. The plants must again be placed under cover when danger from early frost or heavy autumnal rains is imminent.

Eriostemon linearifolius.—As implied by the specific name, this is a narrow-leaved kind, and one, moreover, that makes a capital pot-plant for winter flowering The plant is free flowering, as are many of its race, and in the greenhouse the blooms remain fresh for a considerable time.

Leptospermum bullatum. — This readily attains to 2 feet or 3 feet high, though its innumerable pure white blossoms are abundantly produced on plants much smaller. For a cool-house it is a pretty plant, of easy culture, and when in bloom very attractive.

SWEET PEAS.

No article has recently appeared in GARDENING ILLUSTRATED on the subject of the culture of Sweet Peas. As the time has now come when most people are thinking of ordering Sweet Pea seed, I should like to tell them of my experiences as regards the sowing of the seed, and of the newest varieties which are really beautiful in colour, and really new, not merely old varieties with a fine new name.

Most growers of Eckford's new Sweet Peas know what a charming salmon shade of pink Lady Penzance is. Until Lady Mary Currie made her appearance there was no shade of such real salmon as Lady Penzance, and Orange Prince is often not such a strong grower or long-stalked variety. Lady Mary Currie is several shades deeper in colour than the variety Lady Mary Currie, and has the same rich salmon-pink. Indeed, I do not think that there was a Sweet Pea shown last year of such a vivid colour, and yet it was not red, but distinctly salmon. These two would blend beautifully together, either on a dinner-table or as an arrangement in a drawing-room. Venus, a very pale shade of the same tint, is pretty if worked in with the same arrangement. A bunch of Venus here, one of Lady Mary Currie somewhere near, and Lady Penzance in a separate arrangement within sight. Just these three, no other shades in the same room.

Another beautiful arrangement can be made by using the variety Dorothy Tennant, which is a reddish-mauve; Countess of Radnor, a pretty soft heliotrope; and Lady Nina Balfour, a still lighter tint of the same shade. These are all delightful Sweet Peas. Captain of the Blues is a very fine, rich blue colour, which works in well with a dinner-table or room decoration of the mauve Sweet Peas I before named, and produces a fine effect. Mars, a deep red, and Splendour, a long-stalked, large-flowered, full pink (not a salmon shade), are two excellent Sweet Peas, and make a capital combination, and Mrs. Gladstone, a lovely pale pink, goes well with them, as it is a paler tint of the same colour. Of the Sweet Peas which are not salmon Mrs. Gladstone is the one I admire most. It is a distinct shade to the others I have seen. Blanche Burpee and Mrs. Sankey are the two best whites, and Queen Victoria, Primrose, and Mrs. Eckford are primrose-coloured selfs, which are the nearest approach to yellow yet obtained. Chancellor is rose, Prima Donna pink, Lovely and Royal Rose are both beautiful, and Lady Beaconsfield and Peach Blossom are also

desirable in every way; these all being shades of pink.

SALOPIAN is a deep shade of crimson—the deepest I know—and Prince Edward of York and Countess of Powis are both really good deep rose-coloured ones. Lord Rosebery, Novelty, Princess of Wales, and Emily Eckford, are all worth including in a collection, and anyone possessing all those I have named will find that they have the best of the varieties which are at present obtainable, and that they will have little need of any other flowers to pick for the house next summer.

SWEET PEAS happily possess a long flowering season. All that is necessary is to pick them all as they come into bloom—not to allow them to go to seed. They then last for many months, giving a constant supply of cut flowers.

Many people sow these good varieties in a greenhouse, and plant them out; others, who can afford to risk the possibility of losing them through the ravages of slugs, or mice, or frost, sow the seed in the open ground. Some sow them thus in the autumn, others in the spring; but I think the safest way is the plan I adopted last spring. It is this: I put narrow slips of old turf in a box in the vinery or greenhouse, and in these slips of turf I put the Pea-seeds, about an inch and a half apart. When well up I laid the sods, with the young plants in them, along the rows of the previously well-prepared border in which they were to remain, and the result was that the young seedlings did not feel the move at all, as their roots were undisturbed. I had an unusually fine lot of Sweet Peas last year, and no seeds were lost in this way, which, in some instances of the expensive kinds, was a decided gain. I shall plant my Peas in the same way this year, and anyone who likes to do so also, will, I think, find it a safe plan.

MRS. JOCELYN.

GARDEN PESTS.

Preventing Hollyhock disease (*M. W.*).—When you speak of your Hollyhocks "being utterly ruined by the scale," I presume you allude to the Hollyhock-fungus (Puccinea malvacearum), and not to scale insects; or do you mean that your plants are attacked by scale insects? If it be the fungus that is infesting your plants, and you really wish to try and save them, as soon as the first signs of the disease appear sponge the parts well with two tablespoonsful of a saturated solution of permanganate of potash to one quart of water, or spray the plants with Bordeaux-mixture. This should be made as follows: Dissolve 1½ lb. of sulphate of copper in a little warm water. Slake 1 lb. of freshly burnt lime, and make it into a creamy whitewash, strain it into the copper solution, add 11 gallons of water, and stir thoroughly. If the pest is an insect, please send some specimens, and I will tell you how to treat it. A well-decayed manure mulch is helpful. We do not know the class of Lilies to which you refer.—G. S. S.

Maggots on lawn (*Ty Guyn*).—The grubs you find in your lawn are those of the small or garden chafer (Phyllopertha horticola), or they may be the young grubs of the cockchafer, which is a nearly allied insect. Whichever they be, the same treatment will be suitable. There is, however, not much to be done, as the grubs are very difficult to kill. Heavy waterings with liquid-manure, or 1-10th of gas liquor to 9 10ths of water, and frequent rollings are the best remedies.—G. S. S.

China Roses.—I have a bed of China Roses and they have shoots from 2 feet to 3 feet long. I should be glad if you would tell me if I should prune them back, and how far from the old wood?—A CONSTANT SUBSCRIBER.

*** You will see full notes upon pruning in an early issue. China Roses should be cut back to a sound eye at 6 inches to 9 inches from the older wood.

Horsforth Gardeners' Society.—A lecture was given before this society on Monday evening, Feb. 14th, by Mr. W. A. Clark (of Messrs. Backhouse and Sons, The Nurseries, York), who took for his subject, "A Ramble through the Lake District, illustrated by limelight views." The lecture was very instructive, all the principal mountains and lakes in Westmoreland and Cumberland being fully illustrated, showing different sections of the mountains inhabited by plants of various kinds. The meeting was well attended by gardeners from Yorkshire. —P

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers *(which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

Important to Querists.—*Correspondents must look through the whole of the paper to see replies to their queries, as some require longer answers than others and are put into their respective departments. Answers cannot always be given the week after the queries are received, but there is as little delay as possible in dealing with them.*

2846—**Best English and American Chrysanthemums of the last two years.**—Would some reader kindly give me the names of these?—V.

2847—**Twelve good Pelargoniums**—Being an old subscriber, will you kindly let me know in your paper names and colours of a dozen large-flowered Zonal Geraniums, Pearson's, or any other raiser? I want them for greenhouse culture.—E. O.

To the following queries brief replies are given, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

2848—**Momordica** (*J. G.*).—This query was answered recently.

2849—**Triteleia uniflora** (*Bulb*).—Not unusual. See elsewhere for reply to other question.

2850—**Asparagus plumosus amongst foliage exhibition plants** (*M. Allan*).—You should not be disqualified, though some judges would take the line that the schedule intended such plants as Caladiums.

2851—**A book about flower-beds** (*Surrey*).—Send the dimensions of the beds, kind of plants you require, and we will help you. There is no good book on the subject.

2852—**Clematis montana not flowering** (*C. R.*).—You should not prune this Clematis. It flowers upon the wood made the previous summer. We cannot account for your failure, unless it be that you have overpruned.

2853—**Treatment of Cannas.**—"Cheshire" had better leave his Cannas alone until he can place them in the hot-bed, when he can moisten the soil before putting them in the frame, dividing and repotting when they show signs of growth.

2854—**Planting Hyacinths, etc.** (*G. B.*).—Hyacinths, Tulips, etc., may be potted at any time from August until February, but October to December is the best period. Ranunculus and Anemones are best planted in October and November, but may be done until the early part of February.

2855—**Anthuriums** (*Surrey*).—These want little repotting, and you will not do any good by trying to increase by division. They thrive well in fibrous peat and turf, not broken up finely, and mixed with broken charcoal and chopped Sphagnum Moss. They are best increased from seed.

2856—**Treatment of Palm** (*A. E. G.*)—If your Palm really wants repotting, do it in April next, and use a compost of turfy loam only. Pot firmly, and be sure not to pot deeply. Palms are more often than not much overpotted, and most likely you would do better by giving a few waterings with weak guano-water.

2857—**Dracæna Mrs. Bause leaves diseased** (*An Old Subscriber*).—Your Dracæna needs more heat than 55 degs. We suspect it has also been very dry at some time. Dracænas often lose their lower leaves, it being natural for these to be shed as they age, and yours may be from that cause. It is difficult to judge with any degree of confidence from so dry a leaf as the one sent.

2858—**Arums unsatisfactory** (*L. S.*).—It is not very uncommon for Callas to develop freaks of growth. We frequently meet with more or less white variegation in the foliage. This is seldom constant or fixed, but if yours comes true season after season after being propagated, it may be a valuable novelty. We can give no reason for these and other freaks.

2859—**Plants for greenhouse border** (*Cricklewood*).—We do not think you could do better than grow Roses upon the wall, as you will not find many but half-hardy subjects thrive in an unheated house with north-east aspect. Spiræas, Deutzias, Primulas, Cinerarias, Camellias, Myrtles, Fuchsias, Zonal Pelargoniums, and Chrysanthemums would be showy in their seasons.

2860—**Salvia patens and Commelina cœlestis** (*Renshaw*).—These flower well in the sun, and their blossoms should not shrivel up as soon as the sun strikes them, as "Renshaw" says is the case with his. Probably the mischief is at the roots, which are not properly performing their functions.

2861—**Small flowers on "Geraniums"** (*R. R.*).—We suspect it is inferior varieties which you have, hence the small flowers. Your treatment would not account for this; but it is better to have a few fresh-struck plants each year than to depend upon old ones for bedding-out or for furnishing window-boxes.

2862—**Pricking off** (*Seedling*).—This is a term used for transplanting the seedlings into boxes to give them more space for development.

2863—**Pots in greenhouse** (*W. P. G.*).—It depends entirely upon the size of house. Every plant must, however, have sufficient space to extend. Overcrowding means ill-health with plants as well as mankind.

2864—**Cutting Holly-sticks** (*Benton*).—This is scarcely a query for a gardening periodical, but the buyers of such sticks like to get them late in the autumn, as soon as growth is matured. It depends upon the temperature as to how long they should be hung up to dry. A steady treatment is best.

2865—**Castor-oil-plants** (*J. B.*).—Many amateurs call the Aralia Sieboldi a Castor-oil-plant, and it is a good plant for rooms and windows. The true Castor-oil is Ricinus, and R. Gibsoni has a deep bronzy-purple leaf. They are seldom grown for market, but we consider this variety the most showy. We think you mean the Aralia.

2866—**Allamanda** (*Venus*).—Prune now by cutting last year's shoots back to within two or three joints of the old wood. Your pot will be large enough for this year, but 1 inch or 2 inches more diameter would be better next season. Do not give much water at present, but when growth is active they will need a copious supply, and weak liquid-manure will be beneficial. They must have good drainage and be potted firm.

2867—**Frame Violet leaves turning yellow.**—It is possible that "Failure's" Violets have been kept too damp at the roots, but we fear from the description that the plants are attacked by the disease, which there appears to be no means of eradicating short of destroying the old plants and procuring fresh stock. If the plants are suffering from the disease, "Failure" will find that gradually all the leaves will turn mouldy and die.

2868—**Treatment of alpines** (*Ekey Ark*).—Alpines do not requires to be sown in heat. A cool, equable temperature is best for them. Sow in seed-pans of slightly moist, porous soil, and place in a cold-frame, laying a pane of glass over the pan to check evaporation, and shade from sun. Any of the seeds which may have come from warm countries should be raised on a hot-bed, the same treatment being observed in other respects.

2869—**Celsia arcturus** (*H. M.*).—This may be raised from seed sown in seed-pans or boxes in the greenhouse or frame during the spring. It does not require artificial heat. The seedlings must be potted as soon as they attain a fair size, and shifted on as they increase in size. Ordinary potting-soil will be found to suit this plant, which is a good subject for the cool-house. It is also easily raised from cuttings which strike readily in a frame.

2870—**Lotus peliorhyncus** (*H. M.*).—This should be sown in the spring in gentle heat, potting on the seedlings when necessary. It is not exacting in the matter of soil, growing well in ordinary potting compost, and responding to the usual treatment accorded to greenhouse subjects.

2871—**Creepers for conservatory facing east** (*Elland*).—As both the wall and border vary so much in temperature, we fear few subjects would thrive. Any creeper in contact with the wall would be liable to become parched up when the kitchen fire was in full force. You will need to be especially careful as regards the water supply. We can only suggest Allamanda Williamsi, Bougainvillea glabra, Lapageria, and Stephanotis as the most likely subjects to thrive.

2872—**Bulbs in window** (*Perplexed*).—We really cannot tell you how often to apply water to your bulbs in the window-box; that depends entirely upon the state of the soil, and this, again, is dependent upon the weather. Bulbs need a good supply of water, and should never be allowed to get really dry. You are not very likely to overwater in a window-box when growing bulbs.

2873—**India-rubber-plant dying** (*A. Henderson*).—We can only suggest your plant has been kept too wet at the roots. It does not need much water at this time of the year. Very cold water might have the effect you describe. It is difficult to decide the cause without seeing the plant. The weather having been so mild, we do not think cold can be the cause.

2874—**Strawberries and frost** (*City Bird*).—Not only Noble, but all fairly early Strawberry bloom will be all the better for some protection at night when late frosts prevail. Tying nets, or frigi-domo, or tiffany, two or three times double, or light straw-litter, over the plants at night, removing it in the morning, helps to save very much. Even branches of Laurel or Spruce Fir laid over the plants in the same way furnish useful protection.

2875—**Bleeding Vines** (*L. G. T.*).—It is unfortunate that your Vines have been so late unpruned. That work is generally performed as soon as the fruits are cut and the leaves have fallen. Then by the spring the cut ends of the spurs have callused over. Now it is most difficult to stop the efflux of sap. You may drop on the cuts hot sealing-wax, and see if it will adhere. Also hot painters' knotting may be tried, and, failing these remedies, cut Potatoes in halves and force the cut pieces on to the bleeding ends to help check the flow of sap.

2876—**Japanese mould** (*Dolphin*).—The soil which you find attached to Japanese Lily bulbs is that which is natural to that country, but highly manured, as is essential to the sort of bulb-forcing for the European markets that takes place in Japan. All the same, it cannot be assumed to possess any special merit, and certainly is not equal to our best old turfy-loam. The bulbs come packed chiefly in buckwheat-shells.

2877—**Ardisia crenulata** (*Amateur*).—This keeps its berries for a long time, but it would be exceptional for them to hang for two years. They will hang until a second crop forms. A temperature of 55 degs. to 60 degs., with free overhead syringing, is most suitable. Repot early in April, and use a compost of peat, leaf-soil, and turfy loam, potting very firmly.

2878—**Rabbits eating tree-stems** (*J. H. S.*).—Where trees are standards, wire-mesh 2½ feet high fixed loosely round the stems protects absolutely from rabbits. Also put on a coating of something obnoxious, such, for instance, as soft-soap 8 lb., Quassia-chips 1 lb., soot 1 gallon, urine 3 gallons, adding some clay to make a

paint. Have the soap and Quassia dissolved in boiling water, stir in the soot and urine, also the clay, and then whilst warm well coat the tree-stems. No rabbit would touch that, especially if repeated occasionally. We do not like coal-tar dressings for bark.

2879—**Blanching Celery** (*Osprey*).—Where slugs prevail in the soil used for earthing Celery, it is wise to dust freely with fresh lime just before each earthing. Sand may be a good substitute, but ashes would be too porous and would hardly secure proper blanching.

2880—**Scorched Arum leaves** (*Forester*).—Have you been fumigating the vinery in which your plants are too freely whilst the Arum leaves were wet, or has there been any escape of burnt air from the furnace or flues into the house? There seems to be no doubt but that your burnt leaves indicate a case of scald, from out of which they will no doubt soon grow.

2881—**Peat-Moss-litter** (*Golihull*). — Peat-Moss-litter has the reputation of making excellent manure. It is usually allowed to lie longer under horses than straw, and being very absorbent, becomes highly charged with urine. All the same, we prefer to allow it to lie and partially heat, turning it over about twice before applying it to the ground, as it is then sweeter for use.

2882—**Marie Louise Violets turning white.**—There seems to be no disease in "Marie Louise's" Violets. It is natural that, in the interval which elapses between the late autumn and early spring flowering periods, such blooms as are produced should not be up to the standard as regards size and colour. In all probability the plants will bear finer and better-coloured flowers as the days lengthen and the sun acquires more power.

2883—**Diseased roots** (*Chesudus*).—The small portions of Apple-tree roots sent were so dry when they reached us that it was not possible to find on them traces of fungus. That they were in a bad way, however, was evident. We think your soil has been over-manured, and needs, for fruit-trees, occasional dressings of fresh lime and wood-ashes, or even some old mortar-rubbish.

2884—**Peach flower-buds dropping** (*Osprey*).—The premature falling of Peach flower-buds seems to be common this year, and it is difficult to account for. Generally it is attributed to dryness of border, because it never occurs outside, but only under glass. Such early varieties as Hale's and Alexander are commonly subject to this defect. Have you tested the condition of your soil low down, as the appearance of the surface-soil is often deceptive? Nature saturates Peach-borders outdoors very liberally in the winter. Possibly it may be needful next autumn to lift and replant the trees.

2885—**Arum flowers opening badly** (*W. S. P.*).—You do not say whether your Arums in pots are in a greenhouse or in a room. Then there is no mention of the conditions under which grown, so that it is difficult to suggest a remedy for the indifferent opening of the flowers. Are you sure the balls of soil are well moistened, for Arums like plenty of water? If in a greenhouse, is there defective ventilation, or does burnt air escape into the house from the fire? We cannot, because of lack of information, make any practical suggestions. That your Genista has gone wrong also leads to the suspicion of foul gases in the house, or of burning by fumigating, or watering with some overstrong liquid, thus causing the falling of the buds.

2886—**Gooseberry varieties** (*R. B.*).—The varieties of Gooseberries you have as Early Kent and Keepsake do not seem to be properly named, as you say one is upright growing and the other pendulous. These two varieties are very much alike, so that some growers regard them as the same, and their habit of growth is half pendulous or drooping. Whinham's Industry and Whitesmith are both rather erect growers. Both the two first named are green when ripe. Industry is red and Whitesmith is white.

2887—**Cobæa** (*Miss T.*).—Cobæa scandens is a rapid-growing climber, and is too rampant for a conservatory. It should be cut hard back next month. The Plumbagos should have been pruned after flowering. If they are cut back now there will be a loss of flowers this year; they had better, therefore, be allowed to flower and then pruned back. Cobæa scandens is scarcely attractive enough for a greenhouse or conservatory, and being so vigorous soon overgrows its neighbours. Solanum jasminoides would be preferable, though this also would have to be kept in bounds.

2888—**Erica hyemalis** (*Clark*).—No doubt your plants have been pushed on in warmth, and unless you have a warm greenhouse to stand them in, beyond shortening back the decayed flower-spikes somewhat, it will be well to leave the harder pruning for a month at least; then cut back to below the old flowers, and after new growths or shoots are partially made repot. Turn the plants out of the old pots, remove the drainage, and with a pointed stick some of the soil. Have clean pots a size larger. Give an inch of drainage, on that some coarse peat and turfy loam in equal parts, with a good infusion of sand. Stand the plants in a close frame or house for a month. Syringe freely, and afterwards stand outdoors to harden the growths.

2889—**Pigeons in garden** (*Fancier*).—We should distinctly object to the presence of pigeons in a garden, as once they get accustomed to a taste of green vegetation of almost any description they devour it greedily. Lettuces, Peas, Cabbages, as well as Rose-buds, as in your case, young flowers, and such things, and fruits also, are by them soon destroyed. Still further, they soon become an intolerable nuisance to neighbours, as they are no respecters of gardens. If in such case birds you very much value came to harm, the fault would be with yourself. You will do well if you keep pigeons to have them netted or wired in.

2890—**Bleeding Walnut-trees** (*H. H. H.*).—Your piece of ground is just over 120 rods or poles. There are 30¼ square yards to the rod. As to your Walnut-tree bleeding, it shows the evil of late pruning, so that wounds cannot calluse over before the sap rises, and that is beginning so early this year because the weather is so mild. You will find it difficult, probably impossible, to stop the sap waste now, but the most you can do is to heat a little Stockholm tar and dab it over the cut surfaces at once, or, failing Stockholm, use coal-tar.

2891—**Treatment of Dahlia roots** (*G. Brond*).—If you only want to increase your stock to two or three times its present quantity, the large roots can be divided, taking care to have some eyes upon each portion. They can be potted up, as you suggest, for a time, and then planted out later, or they may remain as they are until April and then be planted in the open borders, covering the tops with a few sifted ashes or Cocoa-nut-fibre. To root cuttings needs a little heat and a close propagating-case.

2892—**Potato-Onions** (*Biggleswade*).—The Onion you require is known as the Potato or underground Onion. The Tree Onion is seldom seen now, and is very diverse, as this variety sends up tall stems from the bulbs which carry clusters of other bulbs. The Potato-Onion is treated like a Shallot. Bulbs are planted singly on good soil in rows 12 inches apart and just buried. These give off other bulbs, and they ripen early in the autumn, when they may be lifted and stored in a cool place for the winter. February is a good time to plant. We notice in one seed list they are quoted at 5s. per twelve bulbs; 6d. per lb. seems to be the prevailing price.

2893—**Begonia Gloire de Sceaux** (*M. A.*).—We do not find any allusion to Begonias upon page 129 of the present volume, so are rather at a loss to answer your query. As soon as cuttings or bulbils from severed leaders or veins in Begonia-leaves have made roots, they should be transferred to small pots of the following compost: Turfy loam, peat, leaf-soil, and coarse sand in equal proportions. Water through a very fine rose, and keep close for a few days. When the small pots are full of roots, shift on into some of 4½ inches over, using a compost of turfy loam, one half, and the remainder made up of leaf-soil and thoroughly decayed manure. Very little sand will be needed this time.

2894—**Myosotis Victoria dying** (*R. Binns*).—The reason for the Myosotis-plants going off is doubtless excess of atmospheric moisture in the confined air of the greenhouse. The fact that the same plants are healthy out-of-doors points to the culture of the potted ones being at fault. The Myosotis is very impatient of anything like a confined atmosphere during a damp winter. Possibly the plants may have been kept too wet at the roots before the signs of ill-health were noticed. In this sort of weather, Forget-me-nots do best in a cold-frame with the lights off, merely closing these to prevent the plants being injured by frost.

2895—**Planting out seedling Hellebores** (*Mrs. Sharples*).—Seedling Hellebores may be moved immediately after the flowering season is past. For the Christmas Rose (Helleborus niger) and its varieties the permanent beds should be deep and rich. A bed of heavy loam, 3 feet deep, to the lower foot and a half of which cow-manure has been freely added, suits them well, especially if it be in a slightly shaded and sheltered position. The Lenten Rose (Helleborus orientalis), which is often misnamed Christmas Rose, is extensively raised from seed. This plant is not so exacting in its requirements as H. niger, and will flourish in most soils and positions. Hellebores are also often transplanted in September, but, as the seed-bed would probably become crowded with roots if the seedlings were left so long undisturbed, they had better be moved now if they belong to the H. niger family, and in a month's time if to that of H. orientalis.

2896—**Petunias for exhibition** (*Amateur*).—You do not say whether you want single or double varieties of Petunias for exhibition. Both, in superb strains, can be obtained from seed. The finest mixed, large-flowered single, giving blooms equal to any named ones, may be purchased in 1s. packets. The seeds may be sown shortly in warmth. The finest double mixed is quoted we note at 1s. 6d. per packet. Of these, however, only a fair percentage come really double, but still very fine. Nearly the whole of the double named Petunias are of Continental origin, but you will find a fine half dozen to be Rubens, rich crimson; Snowdrift, white; Duke of Edinburgh, purple, striped white; Adonis, white, blotched purple; Derviche, deep red, bordered white; and Leon Gautier, rosy-carmine, blotched silvery-white. These range about 1s each.

2897—**Cucumber-plants failing** (*Borton*).—It is by no means unusual for Cucumber-plants suddenly to collapse when in full fruit. It arises from stem canker, the evil generally being found close to the soil surface. Sometimes it arises from excessive feeding with strong manure, sometimes from watering too freely close to the stems. That should always be avoided, and it is best therefore to have the plants on small mounds, putting a little lime round close to the stems. Oft-times also canker comes from the soil being far too light and porous, as Cucumbers like a rather firm though not a wet loam best, and very little manure.

2898—**Seakale roots** (*Cheshire*).—It is certain that if you allow the crowns now on your Seakale roots to remain untouched they will send up flowering stems and you will get no crowns to produce good blanching heads next year. You may cover these crowns with ashes and soil 10 inches deep, and cut the blanched growths presently, when several inches high. Then clear away the ashes and soil and cut the stems off even with the surface, and they will produce new crowns which may be thinned down to one or two at the most. If you do not blanch the crowns, then you will have to cut them clean off in any case, that new crowns may be formed during the summer, and these will carry strong leafage, but will not send up flowering stems.

2899—**Plants for north border.**—"Smyth" might plant Delphiniums at the back of his 3 feet 8 inches wide border if it is well enriched. Hardy Lilies, such as Lilium croceum, L. candidum, L. chalcedonicum, L. tigrinum splendens, L. t. Fortunei, and L. umbellatum, should also do well. The old scarlet Lychnis chalcedonica is effective in the summer-time, while Montbretia crocosmiæflora, hybrid Alstrœmerias, hybrid Aquilegias, and Iceland Poppies might be successfully utilised. In the square plot the bright gold Coreopsis grandiflora, Campanula carpatica, Dianthus Napoleon III., Carnations, Tufted Pansies, and the Ivy-leaved Pelargoniums Mme. Crousse and Souvenir de Charles Turner would give pleasing colours.

2900—**Hibiscus rosa-sinensis** (*H. M.*).—This should be sown in heat in seed-pans, containing sifted peat and silver-sand in equal quantities. When the seedlings are sufficiently advanced they should be potted in a compost of peat and fibrous loam in equal proportions, with which a fair amount of silver-sand has been incorporated. Until the plants have reached a flowering size they should be kept growing in heat all the year round in order to attain size with as little delay as possible. When they reach the flowering state they should be kept moderately dry during the winter, started in moist heat in the spring, and any straggling shoots shortened back. The plant is, however, not necessarily grown in the hot-house, as it will live in a cool structure from which frost is excluded, although its blooming is rarely satisfactory under such circumstances.

2901—**Mossy lawn** (*Woodstock*).—A dressing of 3 cwt. per acre to a very mossy lawn is but about 2 lb. per rod, and that is not much. To render efficient service in destroying Moss, the dressing might be at the rate of 5 cwt. per acre. Get it on at once. But after the Moss is destroyed you will have first to clear it off by using a fine tooth-rake, or, better still, a good bush-harrow, freely; then the lawn should be dressed liberally with soil, road-grit, wood-ashes, and native guano, well mixed; or if not guano, then give a dressing of sulphate of ammonia at the rate of 2 lb. per rod, or of Peruvian guano; or failing that, of fresh soot. It is evident the Moss thrives on the poverty of the soil, which in turn kills the Grass.

2902—**Plants in heated vinery** (*Forester*).—The plants you name—Ferns, Genistas, Arums, Fuchsias, Pelargoniums, etc.—should like the temperature you give (from 50 degs. to 60 degs.) to help to bring them on into bloom early. You will have to watch lest the warmth generates aphis or green-fly, and to fumigate perhaps once a fortnight. To repress red-spider you will have to gently syringe, but not to injure the flowers, in the evening, and, if not so, then lightly damping the floor and syringing the pipes. Plants growing in warmth may need water daily, and should on fine days have ample top ventilation. If there be too much drip in the morning, give a little air at night.

2903—**Asparagus plumosus** (*Burslan*).—Your Asparagus is evidently not nanus, dwarf or compact, but the climbing plumosus. That the growths shrivel up just as they should be climbing leads to the natural assumption that roots are pot-bound and dry. These plants are rather gross feeders, needing ample root-room. They usually do best planted out into a small border at the base of a back wall; or else into a large pot or tub, and then trained up the wall, either nailed or tied to wires. Can you not serve your plant in this way. Perhaps standing the pot on the stage promotes dryness at the roots. The trouble you find is so unusual that we find it difficult to give any definite opinion. If what we have urged be not correct, then there must be in the house some local cause. Your soil seems to be very fitting for the plant. Try standing the pot on the floor, and less exposed to a dry atmosphere.

2904—**Propagating Aucubas** (*Middlewick*).—The best time to insert cuttings of these shrubs is early in the autumn. They should be about 8 inches long, and of firm wood. Set them in under a wall or fence in well prepared ground, using sand in the shallow furrows, 12 inches apart, in which the cuttings are stood upright. Press the soil against the bottom portions buried, and tread it firm. These should make good rooted plants in a year. Lower branches may also be layered, treating them as Carnation layers. Cupressus tops may be put in now in very sandy soil. Use 6-inch pots. Set a dozen small points or tops into each, and in the centre, and then cover each pot with a bell-glass, and stand them in a close frame where there is a little warmth.

2905—**Sample soils** (*Scone*).—Your No. 1 sample of soil seems to be capital leaf-mould, such as gardeners delight in. It should not, however, be used too freely in any compost, except for raising seeds or plants to remain in their pots a short time. Mixed with good turfy loam in the proportion of one-fourth, also a little old stable-manure and sand, a good compost for most plants in pots should result. Oak-leafage gives the best of leaf soils. No. 2 sample, taken from beneath Fir-trees, resembles a first-rate fibrous peat, but, as a rule, soils from beneath Fir is much charged with turpentine. Yours smell of that a little, though but slightly. Still, it seems to be capital stuff to mix with loam for Heaths, Azaleas, Genistas, and similar hard-wooded plants. Get loam from an old pasture if you can, as that is so much better than is garden soil for potting.

2906—**Long-spurred Pear-trees** (*W.*).—No doubt the pruning of your large, wall-trained Pear-trees has been much neglected. We advise you, now that the bloom-buds are becoming white and conspicuous, to preserve these so far as possible, and shorten hard back all other portions of the thickets of spurs, even cutting clean away with a small saw every other cluster of spurs, especially if without bloom-buds. If there are few or none of these, then cut all the spurs close back at once. From the bases where cut will break shoots. These you can allow to remain until it is possible to select the strongest, then cut or pull out all others. These strong shoots may be cut back to about four or five leaf-buds at the end of July, and the back buds will plump up and change into fruit-buds, cutting back the spurs in every case to two of these. You will in that way soon renovate your trees.

2907—**Begonias for bedding.**—"Cheshire's suggestion of placing damped Cocoa-nut-fibre among his Begonia-tubers, which are stored in a cold cellar, would, if carried out, probably lead to disastrous results. Moisture, unaccompanied with warmth, would tend to rot the tubers rather than start them into growth. With a temperature of from 50 degs. to 55 degs. the tubers will start in December or January; but "Cheshire" has no heat at his disposal, and therefore he will be wise if he leaves the tubers alone until the end of March or beginning of April, when he may start as many as he has room for in a sunny window, placing them in shallow boxes in slightly damp Cocoa-nut-fibre, Jadoo-fibre, or very light soil, removing the boxes into the warmest part of the room at night. Such as he has not convenience for in the window must be allowed to start naturally in the cold-frame and treated in the manner described. If the soil surrounding the tubers becomes dry, it should be watered with a fine rose, and when the roots commence to move freely this will have to be frequently attended to.

2908—**Frame Cucumbers** (*R. R.*).—It is not the rule to grow ordinary Ridge Cucumbers in a frame, as these will usually do very well outdoors in a warm

position, whilst any fairly good variety, such as Telegraph, Lockie's Perfection, or Duke of Edinburgh will, as a rule, do well in a frame without bottom-heat from the middle of May onwards. That your Ridge Cucumber fruits turn yellow before cut seems to lead to the inference that you leave them to become nearly ripe first. Of course, for eating they should be quite green. But then when so fit for eating they are rather small, hence of no great value; indeed, they are usually sold at about 1d. each. Why not try a fresh stock, such as King of the Ridge, which is of good length and perfectly green. We advise you to shift your frame on to fresh soil each year if you can; also to place in the centre a ridge or mound of, say, a couple of barrow-loads of rather turfy loam. Growing Cucumbers in the same soil each year is likely to lead to canker or other disease. Add just a little of old decayed manure to the soil, but not much. If you can get your plants raised in a little warmth by someone, sowing the seed end of April and planting out the end of May, you will get a good start.

2909—**Vegetables for exhibition** *(Ignorant).*—It would not be possible to determine from our English point of view what conclusions Irish judges of vegetables may come to, but we place twelve vegetables, having regard to season (August 1st), in the following order of merit: Peas, any fine podding variety, the pods fresh, green, well filled, and very even in size, must be quite young and tender. Runner Beans of the long, straight Ne Plus Ultra type, fresh, tender, even, straight, and not at all discoloured. Cauliflowers of any good variety, heads of good size, solid, white, not at all frothy, and of all same size. Potatoes, any variety, but white by preference, fresh, bright, clean, smooth, handsome, even in size, and not over large. Tomatoes, rich red colour, smooth, handsome, even, good size, without crack or flaw. Onions, either autumn sown, any fine, clean sample; or winter sown, raised under glass. Carrots of the short, blunt-rooted Nantes type, very bright, clear, and even, of good size for the variety. Cucumbers, any nice green variety, fruits 15 inches long, straight, even, with very short necks or handles, and quite fresh. Marrows of medium size and length, white for preference, very handsome, even in size, and skins quite tender. Beets, Turnip-rooted, blood-red, good size, but not too large, dark colour, handsome, even. Cabbages, medium size, hard, solid hearts, without blemish, not many outer leaves. And Broad or Long-pod Beans, such as the Saville, if quite young, long, well filled, good cream colour, straight, and even. From these you can select the first six, and the best twelve you require. You can have Dwarf Beans and very early Celery for reserve.

2910—**Hyacinths flowering too soon.**—I shall be obliged if you will tell me through GARDENING the reason of bulbs flowering before they have attained their proper height? All of mine were potted in November and kept in a frame under ashes, and brought into the greenhouse a few weeks ago. When about an inch high the blossom commences to come out. The greenhouse is not very well heated.—M. B. E

*** *"M. B. E.'s" treatment of the Hyacinths has been perfectly correct, and the failure is not due to any cultural error. Last season was evidently unfavourable to the growth of Hyacinths, and resulted in the embryo flowers being weakly and abortively formed, so that when these are produced they either fail to emerge from the leaves, or show poorly-flowered spikes. There is this year a very general complaint that the Hyacinths are very unsatisfactory, and we have seen bulbs, purchased from the best firms at expensive rates and others that had been procured direct in Holland, flowering in the manner that "M. B. E." complains of. Reports from market-growers of Narcissi state that these promise to give but an unsatisfactory crop, so that it appears that Hyacinths were not the only bulbs affected.*

NAMES OF PLANTS AND FRUITS.

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR *of* GARDENING ILLUSTRATED, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Jack*—We do not know variety of Camellia. There are so many. The yellow flower is Coronilla Emerus.——*Piper.*—1, Mahonia Aquifolium; 2, Cotoneaster microphylla; 3, Pyrus japonica; 4, Polyanthus flower; 5, Berberis aristata; 6, Please send in flower; 7, Acacia Riceana; 8, Davallia canariense; 9, Primula capitata var.——*E. Sealy*—The yellow flower tied with pink wool is Forsythia viridissima; the other, the Cornelian Cherry (Cornus Mas).——*M. Buchanan*—A variety of the Lenten Rose (Helleborus orientalis)——*Sam*—1, Dracæna indivisa lineata; 2, D. congesta; 3, Kalosanthes coccinea.——*Amateur.*—We can make nothing more of your Rose than a Gloire de Dijon.——*F. M.*—Pteris serrulata; the shrub is the Mezereon (Daphne Mezereum).——*Yorkshire.*—1, Ophiopogon Jaburan variegata; 2, Lonicera japonica; 3, Selaginella Kraussiana; 4, Phlebodium aureum.——*Renshaw.*—1 is an Agave, probably A. socotrana, but as there are some hundreds of Agaves, it is impossible to say without seeing the flower. It should have a sunny position in a moderately warm-house, should be kept dry when not making growth, but should be afforded plenty of water when it commences to move. 2, Boussingaultia baselloides. This requires a rich, porous soil, containing a good proportion of humus, and a sunny position in the house. The bed in which it grows should be well drained. It should flower with this culture. 3, Polypodium vulgare variety.——*F. T. L.*—The name of your Orchid is Eria flava.——*Mrs. Pode.*—The name of your Fern is Phlebodium aureum, syn. with Polypodium aureum. It is one of the best and showiest greenhouse Ferns, and few thrive better in a room or window during the summer months. It does not belong to the Hare's-foot section, although the creeping rhizomes might easily lead one to that opinion.——*R. P.*—Garrya elliptica.——*W. H.*—Lælia anceps.——*F. T. L.*—1, form of Dendrobium nobile; 2, D. nobile; 3, Eria flava.

TO CORRESPONDENTS.

H. W.—You should be able to procure your water-plants through any of the hardy plant firms who advertise in GARDENING. If they do not happen to have the plants themselves they would get them for you.

LAW.

Is a gardener a domestic servant?—In your issue of February 12th (page 730), "K. C. T." says in answer to "A. E. G." that a gardener is legally a domestic servant, a statement that appears to be very doubtful, though a gardener is usually thought to be such. A few months ago a gentleman died, and by his will left a certain amount of money to his domestic servants, and his widow told three of the gardeners (one of them being a young man employed under glass) that the gardeners would share with the rest. But although the indoor servants received shares, none of the gardeners received anything, and one of the executors, who is a lawyer, said that a legacy to domestic servants did not include gardeners.—G. W.

*** You have scarcely quoted the reply on page 730 with exactness. The words actually used were: "The reason why a month's notice is necessary, is that legally a gardener appears to be a domestic servant, or, at least, that he so much resembles a domestic servant that he falls into the usual rule as to a month's wage or a month's notice." It was not stated definitely that a gardener is a domestic servant, only that he so much resembles one that he is within the rule as to a month's notice. At the same time, I am not prepared to say that a gardener is not a domestic servant, and the term "domestic servant" has not exactly the same meaning for all purposes. There have been cases where litigation has ensued as to the meaning of the term "servants," and it is considered very doubtful whether a legacy to "my servants" would include gardeners; where it is intended to benefit gardeners also, the words "servants indoor or outdoor" should be used. There are cases in which the distinction has been raised on actions to recover legacies, but it is not necessary to go into these now. The question at issue was whether a gardener engaged as such, but without any special contract as to notice to determine the service, is entitled to a month's notice. I think that such a case falls within the rule applicable to domestic services, and for this purpose a gardener is in the same category as a domestic servant. I think that, as a rule, all male servants, for whom male servant's licenses are required, are subject to the rule of a month's wage or a month's notice.—K. C. T.

Tenant removing flower-bulbs on quitting.—I am the yearly tenant of a house. Can I remove bulbs and perennials which I have planted in the garden, as I am about to move to another house?—R. E.

*** When planted, flower-bulbs and similar matters become the property of the landlord, and the tenant may not remove them. As a rule, the landlord consents to such removal if his consent be asked, although he would decline to allow a garden to be entirely stripped. Things placed temporarily in the ground may be removed, but not such as are permanently set out or planted.—K. C. T.

Gardens prejudiced by the shade of a neighbour's trees.—My freehold house and gardens are enclosed by a wall, which is about 9 feet high. On the western side, and just outside the wall, is a row of very tall Lime-trees. The roots of the trees travel long distances under my vegetable beds, so that I cannot grow good crops, and my gardens are seriously injured. In the summer the shade of the trees makes my house very dark in the afternoons, and air is excluded from the gardens, so that in hot, showery weather my flowers, etc., suffer. The trees are close together in a row, and to a great height they form a dense screen. Of course I lop the overhanging branches, as I am entitled to do, but this does me little good. It seems unjust that an owner of land should be allowed to plant forest-trees on his boundary and rob another of soil and fertility and of sun. As my garden is rather longer from north to south than from east to west, the trees do me the maximum of harm. I am told I have no power to alter the existing arrangements, but that I can prevent any trees being replanted. I somewhat doubt that I can do even this. Will you advise on the matter generally?—F. W. C.

*** I do not profess to have any acquaintance with Irish law, although, so far as this matter is concerned, I believe Irish law and English law are practically the same. You have no remedy for the loss of sunlight or of air, or for any other adverse result of the shade of the trees; neither can you prevent the planting of more trees. But you need not allow the roots of the Limes to penetrate your land and rob your vegetable crops of fertility; you may cut off these roots wherever you find them entering your land. There is nothing unfair in the present state of the law, which allows you, if you choose, to carry your walls upwards to any height you desire, so long as you do not block the light to windows which have already existed twenty years. If you write us again, kindly write only on one side of the paper.—K. C. T.

Effect of memorandum of tenancy.—I have taken a house and garden on a yearly tenancy at £30 per annum. My landlord and myself have signed a memorandum to this effect, the rent to be paid quarterly. When I took the house a short time ago I told the landlord I should only take it for one year to start with, and at the end of the memorandum is put "the first year's tenancy to expire at Lady-day, 1899." Must I give six months' or twelve months' notice to leave? Or is notice in this particular case unnecessary? If I remain after Lady-day, 1899, what notice must I give when I wish to leave?—SAPOO.

*** It may be that you intended to take the house for one year only, but you say that the memorandum sets out that the tenancy is yearly at an annual rent, payable quarterly. In the face of this memorandum it is useless to contend that you took the house for one year only, and that the tenancy terminates at Lady-day, 1899, without any notice being given. The addendum to the memorandum is worse than useless in support of your contention, for if it means or implies anything, it is that the tenancy is for more than one year. If not, why speak of the first year? Does not first imply a second? To have made the position clear you should have sent an exact copy of the memorandum, and not have tried to set out the effect of a document which you evidently do not fully comprehend. If the garden be a market-garden, you must give a year's notice to determine the tenancy, and so to quit at Lady-day 1899, you must give notice at or before Lady-day, 1898, and if you remain after Lady-day, 1899, you will have to give a year's notice when you wish to quit. But if the garden be not a market-garden, and is merely a private garden attached to the house, you may leave by giving half a year's notice previous to Lady-day. To leave at Lady-day, 1899, you must give notice at or before Michaelmas, 1898, and if you wish to leave in any other later year, you may do so by giving notice at the previous Michaelmas. If the memorandum follows the terms of some agreements of tenancy, and the place is let to you for "the term of one year from Lady-day, 1898, and thenceforward upon a yearly tenancy," the effect is that you cannot determine the tenancy at Lady-day, 1899, by any notice whatever, for the earliest date on which the tenancy will be determinable is (in this event) Lady-day, 1900.—K. C. T.

POULTRY.

Death of chickens *(Ty Gwyn).*—Your chickens are dropping off really as the result of mismanagement. They are suffering from pneumonia or inflammation of the lungs, and this disease often breaks out in a severe form amongst chickens which have been hatched in an incubator and are being reared in a foster-mother where the heat is maintained at too high a level. It is practically the same in your case with the glasshouse; the chicks are being treated as hot-house plants, and for this they are altogether unsuited. Pneumonia is not a disease which answers readily to treatment unless it is taken in hand promptly, and all that I can advise you to do is to feed generously, and to dress the skin on the back in the region of the lungs with tincture of iodine. You must, however, remove the birds at once to more suitable quarters. As the principal chicken-breeding season is now close upon us, a few notes on the subject of rearing will be acceptable to many readers. Assuming that the eggs are

of the same age when placed under the hen, the chicks will all make their appearance within a few hours of each other. For the first twelve hours no food should be given, and I never remove any chicks from the nest. After that time—in some cases a longer interval might elapse—the first feed, consisting of hard-boiled eggs mixed with stale bread-crumbs, should be given on a board put before the nest. Get your coop ready, and a few hours after that meal remove the chicks and hen to it. Then feed four or five times daily for the first fortnight, using the foods before mentioned, Oatmeal, sharps, meat scraps, bread sopped in ale or milk, and some coarse Oatmeal (in its raw state) or groats, once a day. Early hatched chickens require some stimulating food, as suggested above, and it should always be forthcoming. Give the chicks plenty of fresh air, but, of course, keep the coop warm. Do not use Rice in any shape, nor hard corn, such as Wheat, until the chicks are three weeks old. Bear in mind that a certain sign of pneumonia in chickens is a ravenous desire to run here and there for food with the wings outstretched. The chicks never swallow anything, so that they starve themselves to death.—DOULTING.

Poultry dying (*Dr. A.*).—I should be glad to know the opinion of the expert. In all probability, the attack is either due to Fowl cholera or to liver disease.—DOULTING.

Fowls for laying purposes (*T. C.*)—I do not think there is any breed of Fowls which can be honestly pronounced as the best kind to keep for laying purposes in all situations. You must not forget that some poultry-yards are extremely exposed to keen and cutting winds at all seasons, and it is generally admitted by those best qualified to judge that the birds most likely to thrive in such quarters are those which are of robust constitution and bred upon the spot. Take another place, and here from its sheltered position it may be possible for even delicate breeds to establish a good record. The subject, however, should be approached from another standpoint altogether. To the casual observer Fowls of the same breed may be all classed together, and their value is determined by the excellence or otherwise of their outward points, such as plumage, combs, colour of legs, and so forth. The poultry-keeper who goes in for eggs or profitable results knows otherwise. He is fully aware that a long continued course of breeding for fancy or show points must, in the end, have the effect of injuring egg production and other useful properties, and so he is careful to avoid buying birds for stock purposes, whose principal recommendation lies in the fact that they are closely related to this or that prizewinner. Remember, I do not throw out any suggestions that poultry shows are doing mischief. I only wish to make it clear to the readers of GARDENING that breeding poultry for prizes and for profit are two very different things. Now for your query. You say your White Leghorns are eight months old, and do not lay at all well. They may, as already explained, belong to some prizewinning strain, and may, therefore, be naturally indifferent as layers. I would, however, rather attribute their failure to the fact that they are essentially spring and summer rather than winter layers. A non-sitting breed, such as Leghorns, possesses large combs, and these suffer almost as much from keen winds as from frost. I would not, therefore, rely upon such birds exclusively for winter eggs; but should prefer pullets which are a first cross between the Leghorn cock and some hen which lays a coloured egg. If you can arrange to breed such this spring you will have no cause to complain of a scarcity of eggs next winter. I am not partial to Peas as a food for Fowls.—DOULTING.

BEES.

Spring treatment of Bees (*Mr. G. A. Warriner*).—If your hive contained 20 lb. weight of honey in September, it would be sufficient to carry the Bees well into the spring, but to "turn up" a frame-hive was not quite the right way to examine it, and the amount of stores could not be accurately ascertained by such an unskilful proceeding. It would be well to examine the hive early in March—choosing a mild day for the operation—by gently removing the coverings of the frames. If the Bees are found to be crowding towards the tops of the combs, it will indicate that feeding is at once necessary. The stores of a hive are consumed from below, the Bees gradually working upwards as the quantity lessens. Replace the coverings of the frames as quickly as possible, using a little smoke to quiet the Bees if they show any disposition to prove troublesome, and if feeding is found to be necessary, cut a hole in the quilts the size of the mouth of the feeder, which fill with syrup, made in the proportion of 3 lb. of loaf sugar to one quart of water, boiling for a few minutes, and adding a pinch of salt and a few drops of vinegar, and place over the hole in the quilts. The syrup should be given in a warm state, and the feeder well covered up. Do not give syrup in cold weather, but supply sugar-cake in preference, which may be made by boiling about a pint of water, and gradually stirring into it 6 lb. of loaf sugar, continuing the stirring to prevent burning. Ordinary sugar-candy is also good Bee food. If yours is a properly constructed bar-frame hive, you should be able to remove all combs at will to ascertain their condition in respect to stores, brood, presence of queen and so forth, and in the honey season to remove them for the extraction of honey from the combs by means of the extractor. Movable combs are considered by the most advanced Bee-keepers to be indispensable both to profitable Bee-keeping and to the study of the natural history of the inhabitants of the hive. It is to be presumed that you have a wooden roof to your hive in addition to the three pieces of match-boarding that your man put on. The roof should, of course, be movable, and on lifting this off you should find two or three thicknesses of carpet, felt, or other warm material completely covering the tops of the frames; these are the "quilts," out of which you must cut circular pieces before putting on the feeder. A wide-mouth pickle bottle with two or three pieces of muslin tied over the mouth makes a very good feeder. If candy is used, it must be slipped in between the quilt and the tops of the frames. Your colony would not appear to be very strong, as only one individual came forth upon the sides of the hive being tapped. You can obtain hives and all Bee-keeping appliances of the manufacturers, such as Neighbour, of Holborn, London; Blow, of Welwyn, Herts; Baldwin, of Bromley, Kent; Meadows, of Lyston, Leicester, who will send you illustrated price lists on application.—S. S. G., *Uxbridge*.

BIRDS.

Canary (*C. A. Bilne*).—It was unfortunate that you did not give the slightest information as to what treatment this bird had received, what kind of seeds it had been fed upon, and so forth. It appears to have been a very bad case of fatty degeneration of the liver, which frequently results from feeding upon food too rich in nitrogenous compounds, and is also due to the mal-assimilation of the food taken into the system. You could not have saved your bird in the advanced state o the complaint; precaution is, however, easy by feeding upon suitable food, affording plenty of exercise, and keeping up a good supply of coarse grit-sand, from among which the bird will select enough small stones to keep its digestive organs in proper working order. Possibly the bird did not get sufficient exercise. As a rule, the larger the cage the better is the health of the inmate, a garden aviary being the best of all places in which to keep Canaries and other song-birds.—S. S. G.

Canary ailing (*H. Blick*).—You have not been feeding your bird judiciously, and it has become surfeited through partaking of food of a too stimulating character. You must discontinue the Hemp-seed, and give in its stead Rape-seed of the smaller kind, which is of a cooling quality, while all luxuries in the way of bits of sugar, sweet-cake, and so forth, must be strictly forbidden, and the general diet restricted for a time in quantity as well as quality. Supply fresh green food daily, but begin with small allowances, for if the bird has not been used to this, an unlimited supply suddenly offered might cause it to gorge itself and bring on diarrhœa. Anoint the feet with vaseline, and keep the patient warm. You might cover the perches with some soft material for a time, until the feet become less tender, and if you wish to treat the bird medically, put a teaspoonful of liquid magnesia in an ounce of the drinking-water. A little freshly-prepared bread-and-milk may be supplied two or three times a week, and a piece of cuttlefish-bone (which can be obtained of corn-chandlers and seed-merchants) should be placed between the wires of the cage, for the bird to peck at; this, and old mortar in a powdered state in which some salt has been mixed, are alike good in assisting to check disease. The continually eating and drinking is a bad sign, however, and it appears very doubtful if it will pull through under the most careful treatment.—S. S. G.

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